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Walter of Evesham Abby and the intellectual milieu of fourteenth-century English music theory

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WALTER OF EVESHAM ABBY AND THE INTELLECTUAL
MILIEU OF FOURTEENTH-CENTURY
ENGLISH MUSIC THEORY

A dissertation presented
by

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Presented to the School of Music at
Prifysgol Bangor University

Supervised by
Christian Thomas Leitmeir & Thomas Schmidt

Prifysgol Bangor University
Bangor, United Kingdom
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ABSTRACT

This thesis investigates the authors and readership of fourteenth-century English music treatises. Its objective is to provide a context from which we might better comprehend an intellectual milieu of musical activity that happened within England. A topographical focus on English authors brings a new perspective when considering what was peripheral and what was central to the developments of musical thought. By identifying centrality among English theorists, this thesis reveals a previously unconsidered milieu and transmission of music theory. One of England's greatest theorist, Walter of Evesham Abbey (Walter Odington), will be the protagonist of this inquiry.

For some time now, it has been acknowledged that Walter was a great scholar, based not only on the authorship of *De speculatione musica*, but also on the authorship of an alchemical treatise, the *Ycocedron*. A close study of manuscript sources now held in Oxford and Cambridge libraries, however, reveals that the author was two different people: Walter of Evesham Abbey authored *De speculatione musica* while Walter Odington of Eynsham Abbey authored the *Ycocedron*. A separation of the two offers musicologists the chance to reconsider where and in what context music treatises were read and written.

Until recently, Cambridge, Corpus Christi College 410 (*GB-Ccc* 410) has been the sole manuscript available for consultation. A fragment, London, British Library Additional 56486a (*GB-Lbl* Add. 56486a), has been held in the archive for forty years unstudied. Yet it offers for thought hitherto unconsidered information on the transmission history of *De speculatione musica*. With its addition, it is now possible to see that the treatise was copied in several different ways, bringing to light the possibility that the text had a wider circulation than has previously been thought possible. This in turn may contribute to the fact that Walter's text, however briefly, became a source of authority for subsequent authors. For some reason, one diagram in *GB-Lbl* Add. 56486a is different from the until now main manuscript for *De speculatione musica* (*GB-Ccc* 410). The unusual variance requires an understanding for the function of medieval diagrams in general. The visual transmission of ideas examined in this thesis offers the possibility to understand medieval treatises differently than a mere study of their texts. The thesis closes with a concluding chapter which presents an overview of music notation found within English treatises of the fourteenth century. This show that although continental influence can be traced within some writings, English musicians had an insular debate independent from other controversies dominant in Continental works.

Recent scholarship has begun to question how the university at Paris had anything to do with the development of measured notation, concluding that in the late-thirteenth century, it was highly unlikely that music was an important part of this scholastic community. Offered for consideration instead are the ecclesiastical institutions which were not only powerful but well-connected throughout various European regions. For the most part, focus has been given to ecclesiastic communities surrounding Paris, subconsciously suggesting that these were central to the development of Western music practice. Consequently, developments happening in England and other regions bordering Western Europe have been considered peripheral, both geographically and in significance. This thesis shows that theorists such as the monk Walter of Evesham Abbey (Walter Odington) read, studied and wrote music treatises within their monastic institutions.

For Mom & Dad

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Cambridge, Mass., 2014

Sources

Manuscript Sources (Music)

France (F)

- Paris, Bibliothèque Nationale de France, fonds latin 6755 (*F-Pn 6755*)
 Paris, Bibliothèque Nationale de France, fonds latin 11266 (*F-Pn 11266*)

Germany (D)

- Erfurt, Bibliotheca Amploniana, MS 8^o94 (*D-EF Amp. 8^o94*)
 München, Bayerische Staatsbibliothek, MS Clm 367 (*D-Mbs 367*)

Great Britain (GB)

- Cambridge, Corpus Christi College, MS 260 (*GB-Ccc 260*)
 Cambridge, Corpus Christi College, MS 410 (*GB-Ccc 410*)
 Cambridge, Peterhouse, MS 169 (*GB-Cp 169*)
 Cambridge, Trinity College, MS 1122 (O.2.18) (*GB-Ctc 1122*)
 Cambridge, Trinity College, MS 1441 (O.9.29) (*GB-Ctc 1441*)
 Cambridge, Trinity College, MS 944 (R.15.22) (*GB-Ctc 944*)
 Cambridge, Trinity College, MS R.5.33 (*GB-Ctc R.5.33*)
 Cambridge, University Library, MS li. I. 13 (*GB-Cu li. I.13*)
 Cambridge, University Library, MS li. III.12 (*GB-Cu li. III.12*)
 Dublin, Trinity College, MS 359 (*IRL-Dtc 359*)
 London, British Library, Additional MS 4909 (*GB-Lbl Add. 4909*)
 London, British Library, Additional MS 15549 (*GB-Lbl Add. 15549*)
 London, British Library, Additional MS 21455 (*GB-Lbl Add. 21455*)
 London, British Library, Additional MS 56486a (*GB-Lbl Add. 56486a*)
 London, British Library, Cotton Tiberius MS B IX (*GB-Lbl CT B9*)
 London, British Library, Harley MS 460 (*GB-Lbl Harley 460*)
 London, British Library, Harley MS 625 (*GB-Lbl Harley 625*)
 London, British Library, Harley MS 957 (*GB-Lbl Harley 957*)
 London, British Library, Harley MS 3763 (*GB-Lbl Harley 3763*)
 London, British Library, Royal MS 5 B.XII (*GB-Lbl Royal 5 B.XII*)
 London, British Library, Sloane MS 513 (*GB-Lbl Sloane 513*)
 London, British Library, Royal MS C.12.VI (*GB-Lbl Royal C.12.VI*)
 London, Lambeth Palace, MS 67 (*GB-Llp 67*)
 London, Newham Museum Services, MS LD PEM AD/AY 0001 (*GB-Lnms MS LD*)
 Oxford, All Souls College, MS 90 (*GB-Oas 90*)
 Oxford, Balliol College, MS 173 (*GB-Obac 173*)
 Oxford, Balliol College, MS 306 (*GB-Obac 306*)
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 Oxford, Bodleian Library, Bodley MS 77 (*GB-Ob 77*)
 Oxford, Bodleian Library, Bodley MS 842 (S.C. 2575) (*GB-Ob Bodley 842*)
 Oxford, Bodleian Library, Laud misc., MS 623 (*GB-Ob Laud 623*)
 Oxford, Bodleian Library, Laud misc. MS 674 (*GB-Ob Laud 674*)
 Oxford, Bodleian Library, Digby MS 90 (*GB-Ob Digby 90*)
 Oxford, Bodleian Library, Digby MS 119 (*GB-Ob Digby 119*)
 Oxford, Bodleian Library, Digby MS 191 (*GB-Ob Digby 191*)
 Oxford, Bodleian Library, Rawlinson MS A. 287 (*GB-Ob Rawlinson 287*)
 Oxford, Bodleian Library, Selden MS supra 25 (*GB-Ob Selden 25*)
 Oxford, Bodleian Library, Tanner MS 165 (*GB-Ob Tanner 165*)
 Oxford, Pembroke College, MS 47 (*GB-Opc 47*)
 Oxford, Corpus Christi College, MS 118 (*GB-Occ 118*)
 Oxford, Corpus Christi College, MS 224 (*GB-Occ 224*)
 Oxford, Jesus College, MS 4 (*GB-Ojc 4*)
 Oxford, Merton College Rolls and Records:
 1047, 3666, 3668, 3674, 3776, 3677, 3678, 3680, 3707, 4090, 4077
 Oxford, Pembroke College, MS 47 (*GB-Opc 47*)
 Oxford, Queen's College Roll, Long Roll: 76, 90, 97
 Oxford, Trinity College, MS 47 (*GB-Otc 47*)
 Peterborough Cathedral, MS 15 (*GB-Pc 15*)
 Wellington, Turnbull Library, MS 16 (*GB-Wtl 16*)
 Worcester Cathedral, MS Q.27 (*GB-Wc Q.27*)

Italy (I)

Firenze, Biblioteca Medicea Laurenziana, Ashburnham MS 1119
 (*I-Fl Ashburnham 1119*)
 Milano, Biblioteca Ambrosiana, MS I.20.inf. (*I-Ma I.20.inf*)
 Milano, Biblioteca Ambrosiana, MS H.165.inf. (*I-Ma H.165.inf*)
 Milano, Biblioteca Ambrosiana, MS Q.9.sup. (*I-MA Q.9.sup*)
 Roma, Biblioteca Apostolica Vaticana, Barberini MS lat.307 (*I-Rvat Barb. lat. 307*)
 Roma, Biblioteca Apostolica Vaticana, Reginensis MS lat.1146 (*I-Rvat Reg. lat. 1146*)
 Siena, Biblioteca Comunale degl'Intronati, MS L. V. 30 (*I-Bp L.V. 30*)
 Venezia, Biblioteca Nazionale Marciana, MS lat. app. cl. VIII/85 (coll. 3579)
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Latin text and transcription conventions

The objective of this thesis is to understand English treatises as they are found in their original manuscripts (and not exclusively through editions). For this reason, some Latin texts have been preserved as they are found within their original sources. Much of the Latin in the manuscript *GB-Ccc 410* which contains Walter of Odington of Evesham Abbey's *De speculatione musicae* is corrupt, sometimes making the meaning of a sentence or word indecipherable. Yet, this is also the text which readers of this manuscript would have read, and we presume, understood. This makes corruption and inconsistencies of particular interest rather than something which should be discarded as irrelevant. For the purpose of understanding what the manuscripts actually contain, I have sometimes left texts in their medieval format rather than edit them and lose authenticity.

The transcriptions found in Appendix 1 adhere to the following transcription conventions: Abbreviations (truncation, contraction, superscript letters and conventional signs) have been expanded through *italicization* according to the rules set out by Adriano Cappelli.¹ Where one source contains a lacunae passage, or where a passage is completely missing, this passage has been supplemented with texts from an alternative source indicated within square brackets []. Coloured letters and words have been retained (red and blue). Where they differ, letter forms and graphic symbols have been changed to their modern equivalent. Words underlined in red are indicated with a wavy underline (ex. Plato). Breaks in lines are indicated by a vertical line (|). Arabic numerals have been changed into Latin form (ex. 2^o = duplo, 4^{or} = quatuor, etc.).

I have translated the Latin text in this thesis, with the help and advice of Leofranc Holford-Strevens. English translations already in existence in other secondary literature have not been altered unless specifically noted.

¹ Adriano Cappelli, *The elements of abbreviation in medieval Latin palaeography*, trans. David Heimann and Richard Kay (University of Kansas Libraries, 1982).

INTRODUCTION

IN A GLOWING REVIEW OF JEFFREY PULVER'S *Biographical Dictionary of Old English Music* from 1927, Harvey Grace excitedly writes:¹

As Mr Pulver shows, this country produced during the period not only composers, but performers of the first rank in all the branches of executive art possible. More; there were in medieval England writers of musical treatises. This is a department of our musical past concerning which little is known, and a very interesting paper might be written on the theorists included in this Dictionary.²

The statement reveals a common national pride among two English musicologists as both rejoice in a satisfactory realisation that their own nation had a glorious musical past—a past which included the writing of music theory.³ Yet, it is not the patriotic sentiment which is striking here: there is

¹ Jeffery Pulver, *A Biographical Dictionary of Old English Music* (London, 1927).

² H[arvey] G[race], 'Review: *A Biographical Dictionary of Old English Music* by Jeffrey Pulver', *The Musical Times*, vol. 68, no. 1011 (May, 1927), 441-442. I thank David Fallows for identifying Harvey Grace as the author of this review which is signed only with the initials H.G. in *The Musical Times*.

³ 'The history of music in England, dealing with the five centuries that lie between the period which made the Reading rota possible and the death of Purcell, is a story of unimaginable fascination. Yet in spite of the labours of a few faithful workers who fought, with weak weapons, to win their merited place for the musicians of England in the affection and regard to their countrymen, it was only comparatively recently that we awoke to the fact that our musical history is as

genuine astonishment and excitement that can be detected in their realisation that in the Middle Ages there were *Englishmen* who wrote music treatises.

Of course, these are not the first times that English authors discovered their own musical past, nor were they the first times that music theorists were mentioned in dictionaries. In his preface to *A General History of Music*, Charles Burney noted that since Italy, France, and Germany possessed good music histories of their own, it would be of equal importance for the English to own one in their language.⁴ Taking on the challenge to provide a narrative history for his country, Burney published his findings in 1776, filling two volumes which brought together both English and European music histories. Though presenting his text as a general history of music, Burney covered a range of topics beyond compositions, including, music theory. However, just as the disjointed nature of English music sources leaves few means with which to tell a cohesive narrative of musical style, so too the same disjointed nature of English music treatises raises the same problem for cohesive narratives of English music theory.

Yet, it was at the beginning of the twentieth century that an interest in English music began to rise once more. Between the years 1933-39, in response to Grace's suggestion, Pulver published a number of short articles through a series entitled 'The English Theorists' in the same journal.⁵

glorious a one as that possessed by any other country of Europe.' Pulver, *A Biographical Dictionary* (London, 1927), 1.

⁴ Burney, *General History of Music*, 13.

⁵ Jeffrey Pulver, 'The English Theorists: I. John Cotton', *The Musical Times*, vol. 74, no. 1088 (Oct., 1933), 892-893; 'The English Theorists: II. The Two Garlandias', *The Musical Times*, vol. 74, no. 1089 (Nov., 1934), 984-985; 'The English Theorists: III. Robert de Handlo, IV. Simon Tunsted, V. Theinred', *The Musical Times*, vol. 75, no. 1091 (Jan., 1934), 26-28; 'The English Theorists: VI. John Hanboys', *The Musical Times*, vol. 75, no. 1093 (Mar., 1934), 220-221; 'The English Theorists: VII. John Hothby', *The Musical Times*, vol. 75, no. 1095 (May, 1934), 408-410; 'The English Theorists: VIII. Lionel Power', *The Musical Times*, vol. 75, no. 1098 (Aug., 1934), 709-710; 'The English Theorists: IX. Guilelmus Monachus', *The Musical Times*, vol. 75, no. 1099 (Sep., 1934); 'The English Theorists: X. William Bathe', *The Musical Times*, vol. 80, no. 1152 (Oct., 1934), 900-902; 'The English Theorists: XI. Thomas Campian', *The Musical Times*, vol. 75, no. 1102 (Dec., 1934), 1080-1082; 'The English Theorists: XII. Thomas Ravenscroft', *The Musical Times*, vol. 76, no. 1104 (Feb., 1935), 124, 126; 'The English Theorists: XIII. Thomas Morley', *The Musical Times*, vol. 76, no. 1107 (May, 1935), 411-414; 'The English Theorists: XIV. Elway Bevin', *The Musical Times*, vol. 75, no. 1093 (Mar., 1934), 220-221; 'The English Theorists: XV. Thomas Mace', *The Musical*

These articles feature theorists of English origin, beginning with the twelfth-century Johannes Cotto,⁶ and spans the time to the seventeenth-century viol player, Christopher Simpson (d. 1669).

Though a fascination for these early theorists and the presence of music in medieval England can be felt in all of the writers above, it is also not surprising that its history remains scattered. A history of English music from the eleventh to fifteenth century is much like the state of its fragmented sources making a straight-forward study of its development difficult. Moreover, musical activities in England have often been considered to be on the periphery, both geographically and within scholarship.

Writing on the music of medieval England in the final chapter of his seminal text *Medieval Music*, Richard Hoppin gives a short discourse on English music, revealing the peripheral placement of the subject through its title: 'An English Epilogue.' After acknowledging the scarcity of sources from this era, Hoppin writes that 'the disconnected nature of this evidence [i.e. English sources] and the lack of a dominant musical centre make it difficult to get a picture of English musical developments during the thirteenth and fourteenth centuries.'⁷ Yet Peter Lefferts' contribution to English music in the *Cambridge Companion to Medieval Music* reflects how modern studies have redressed the peripheral approach of England by placing it within an Anglo-Saxon

Times, vol. 78, no. 1133 (Jul., 1937), 601-604; 'The English Theorists: XVI. Christopher Simpson', *The Musical Times*, vol. 80, no. 1152 (Feb., 1939), 112 + 117-118.

⁶ The name of this theorist, who has only identified himself as monk Johannes, has more recently been the subject of some contention. Smits Waesberghe proposed connections to the monastery in Affigheem, since the monks were sometimes referred to as angels and not of English (*angelorum*). Gerbert suggests from two no longer existing manuscripts that the treatise was attributed to Johannes Cottonius, which, combined with *angelorum*, resulted in a speculation that the author was of English origin. Based on the chants found in the treatise, Michel Huglo suggests that the author was familiar with tonary practices from present-day Switzerland. Though Johannes Cotto is today thought to be an Englishman, it is more likely to place him as someone who worked somewhere along the borders of modern day Germany and Switzerland. See Claude V. Palisca, 'Johannes Cotto', *Grove Music Online* (2001) [Last accessed, 22 Nov. 2013]

⁷ Richard Hoppin, *Medieval Music* (New York, 1978), 502.

context.⁸ Lefferts suggests that ‘[t]he English were not latecomers to a game already being played elsewhere’, but that music crossed the channel regularly, with less effort than has previously been implied, encouraging us to understand English music of the Middle Ages as a part of a larger musical tradition.⁹ His ultimate goal contradicts the perception that English music was peripheral.

Though the specific nature of how information travelled across the Channel has in many ways only begun, requiring further study for how this could have been made, a transmission of materials, ideas, information and musical practice is evidenced in remaining manuscripts. Recent scholarship has shown how this interchange of ideas between the Continent and England can be detected. Music treatises of the *Ars antiqua*, namely the teachings of Franco of Cologne and Lambertus, made their way across to England and found their way into theoretical texts in different ways.¹⁰ In her study of the *Quatuor principalia*, Luminita Aluas indicates that ‘[the treatise] is an important link in the transmission to Britain of Continental speculative music theory and the traditions of the *Ars antiqua*,¹¹ revealing how the author was aware of continental music, hinted by his reference to motets by Philip de Vitry to explain how a long might be imperfected.¹²

Contrarily, it has been shown that English theory travelled across to the continent. In a recent study by Bonnie Blackburn, the rarer instance of English theory reaching the continent can

⁸ Peter M. Lefferts, ‘England’, in *The Cambridge Companion to Medieval Music*, ed. Mark Everist (Cambridge, 2011), 107-120.

⁹ *Ibid.*, 107.

¹⁰ Lambertus’ text can be readily found quoted in in the *Quatuor principalia* while Franco’s text is preserved in Oxford, Bodleian Library, Bodley 842, ff. 49r-59v.

¹¹ Luminita Aluas, ‘The Quatuor Principalia Musicae: A Critical Edition and Translation, with Introduction and Commentary’, (Ph.D. diss., Indiana University, 1996), 1.

¹² Posset tamen prima longa imperfici a parte ante, nisi punctus immediate eam sequatur, ut patet in moteto qui vocatur Hugo quem edidit Philippus de Vitriaco.

[The first longa can be imperfected at the beginning part, unless the punctus immediately follows it, as is apparent in the motet designated *Hugo* which was composed by Philippe de Vitry.]

Aluas, *The Quatuor principalia musicae*, 420; 681. A more recent edition of this motet can be found in ‘Form and Idea in the Ars nova Motet’ by Anna Zayaruznaya (Ph.D. diss., Harvard University, 2010), Appendix 6B, 369-371.

be seen. Several English authors, including Walter and the author of *Quatuor principalia musice*, use the term *proprius cantus* in their treatises to describe the natural hexachord thus making it a uniquely English term.¹³ In the rare instance when this term is used by a Continental author, Blackburn suggests that it could provide evidence for a possibility that a flow of ideas which crossed the Channel exist.

However, Margaret Bent suggests that sources containing music already exhibit a level of separation between continental influence and insular tendencies: ‘Music surviving in English sources of the fourteenth and fifteenth centuries can be seen as falling into two categories: the first, a type of music which is also to be found in continental sources, and the second a type which is not.’¹⁴ In many ways this statement can be applied to English music theory. Although evidence that English theorists knew of seminal Continental theories can be found, other studies suggest fewer connections. In a commentary of Johannes Hanboy’s *Summa*, Peter Lefferts found no direct French influence, concluding that although the notational systems of English theorists are more or less similar to the development of notation found in Parisian or Italian sources, they are still separate.¹⁵

With such a mixture of foreign and native ideas on the one hand and a separate English practice on the other, an assessment of what was current within England remains a difficult and incomplete task. Although the prospect which integrates continental theories with those existing in England is warmly welcomed, the purpose of this thesis is to establish a transmission history of

¹³ Bonnie Blackburn, ‘Properchant: English theory at home and abroad, with an excursus on Amerus/Aluredus and his tradition’, in *Quomodo cantabimus canticum? studies in honor of Edward H. Roesner*, ed., David Butler Cannata, Gabriela Ilnitchi Curie, Rena Charnin Mueller & John Louis Nadas (Middleton, Wisconsin, 2008), 80-98, here, 80.

¹⁴ Margaret Bent, ‘The Transmission of English Music 1300-1500: Some Aspects of Repertory and Presentation’, in *Studien zur Tradition in der Musik: Kurt von Fischer zum 60. Geburtstag*, eds Hans Heinrich Eggebrecht and Max Lütolf (Munich: 1973), 65.

¹⁵ Peter M. Lefferts eds, *Robertus de Handlo “Regule” and Johannes Hanboys “Summa”: A new critical text and translation of facing pages, with an introduction, annotations, and indices verborum and nominum et rerum* (Nebraska, 1991), 64.

English music theory and it is precisely the outlying position of England, an island nation in close proximity to a continent rich in intellectual music discourse, that becomes especially valuable. Rather than see its peripheral placement as negative or as a place where information travelled lastly or where segregation kept new practices from thriving, it will be considered advantageous in this study that a geographical confinement allows a closer investigation of what took place within a restricted area. The main objective here is not to investigate what was being passed to and from England but rather to first establish what was present within England itself. For while there is reason to believe that some were in touch with the larger community of theorists from the continent, it will be made clear in the present study that English authors of music theory read the texts by other English authors. This thesis thus seeks to make comprehensible the distinction between Anglo-Norman and Continental treatises by presenting the until now lesser known examples of an exchange of ideas within the island. By segregating English theorists from continental teachings, it should be possible to define specifically what was English and what was not. It will be argued that English theorists circulated knowledge amongst themselves and since a large milieu of interchanging ideas cannot be clearly understood unless the smaller circles of ideas become comprehensible, the thesis will focus on a few key theorists.

One theorist in particular provides an ideal opportunity for considering the setting in which English theorists operated. As a case study to set the scene for an intellectual milieu in England, the theorist commonly known as Walter Odington will serve as the main protagonist of the present study. In 1928, Pulver wrote a brief article on Walter Odington of Evesham Abbey, an article separate from the series that he published as the English theorists.¹⁶ Though he has been

¹⁶ Jeffery Pulver, 'Walter Odington: The Consonance of the Third, and the Common Chord', *The Musical Times*, vol. 69, no. 1030 (Dec., 1928), 1086-1089.

considered to be one of England's greatest theorists by historians throughout the centuries, it is especially note-worthy that Odington's story has yet to be told in full.¹⁷ Distinctly of English origin, Walter's *De speculatione musicæ* was demonstrably read by other English theorists later in the same century.¹⁸

Buried among the many music sources consulted by Burney is a description of the content found within the manuscript source that contains Walter's *De speculatione musicæ*.¹⁹ Noting the eminence of this author by citing previous records from history, the contribution made by Burney in his *History* reveals that he had first-hand contact with the main source of the treatise, Cambridge, Corpus Christi College, MS 410 (*GB-Ccc* 410). As many who see this manuscript for the first time have subsequently done, Burney paused at the opening folio to ponder and then comment on its unusual lacunae: 'The first page, only, has been injured by time, and some vacuities have been left by the scribe, which seem intended to have been filled up with red ink.'²⁰ As if to salvage the damage, several different hands can be seen scribbling their own attempts to 'fill in the gap' as if it were some type of intellectual exercise. However tempting it would be to believe that the missing words were simply meant to be filled in at a later date, a closer observation of the gaps leads to a conclusion that this was highly unlikely since the missing words are not always what might be considered 'important' words. Instead, they are incomplete words, sometimes the beginning, other times the end, or are words within a sentence which simply are missing. It is more likely that the

¹⁷ Nearly all historical records which exist, beginning with John Leland (c. 1503-1552) onwards, acknowledge the great mind which Walter of Evesham Abbey possessed. Further discussion of how Walter was perceived by historians appears in Chapter 2 of the present study.

¹⁸ See Chapter 4 of the present study which illustrates how Walter became an authoritative author in fourteenth-century England.

¹⁹ This manuscript was first edited by Edmond de Coussemaker and published in the first volume of his *Scriptorum de musica medii aevi nova series* (Paris, 1864). The treatise was edited a second time by Frederick Hammond and published by the *Corpus scriptorum de musica* under the title *Summa de speculatione musicæ* ([Rome], 1970).

²⁰ Burney, *General History of Music*, 516.

original manuscript from which the Cambridge source was copied was in a state of disrepair, conceivably from overuse, soiling, ripping or even burning thus leaving this folio largely illegible. In an attempt to salvage the damaged source, two scribes took on the task of preservation, most likely because the original manuscript needed to be replaced to preserve the text for future readers.

It is the content of the treatise which has in the past and present solicited interest from musicologists.²¹ Consisting of six separate parts with differing lengths of chapters, the treatise has been noted to be a *Summa*. The first part assumes the reader knows of authoritative texts, including an understanding of arithmetic as it is presented in Boethius' *De institutione arithmetica*. Part II applies numerical principles to sound, this time taking Boethius' *De institutione musica* as its main source of authority. It is here that a reader would come to understand that harmonic intervals are produced through the careful mathematical calculations. Demonstrating these sonic principles in real terms, Part III then applies the knowledge of harmonic distance to actual sounding instruments, making it both a logical succession from Part II. Numbers can be applied to poetical metre, and Part IV elaborates on how this is done to metre as it is presented in Isidore of Seville's *Etymologies*. The chant treatise of Part V takes the Sarum Tonary to illustrate the eight different ecclesiastical modes while Part VI, today the most well-known, includes a discussion of notation and an explanation of musical forms standard at the time. In sum, the reader of the treatise would have gained a wide range of information having read this text.

Best exhibiting that English authors had English readers is the *Breviarium regulare musicae* by Willelmus. Chapter 3 considers authoritative writers found within *De speculatione musicae*.

²¹ The most useful and often quoted part of the treatise is Part VI which includes definitions of notation and compositional style, such as the definition of motets and hockets. This part has been translated into English by Jay A. Huff, *De speculatione musicae, Part VI* ([Dallas], 1973), while more recent scholarship by Thomas Schmidt has investigated how texted hockets measure up to definitions included within treatises including Walter's definition as a point of reference. Thomas Schimdt-Beste, 'Singing the Hiccup—On texting the Hocket,' *Early Music History* vol. 32 (2013), 225-275.

Beginning with Walter's use of authority, the chapter investigates what foundational texts were read by English authors in the fourteenth century. Unusually, Walter's treatise was quoted and referred to in several different ways. An identification of authority contributes to the general objective to discover an insular circulation of English treatises. Willelmus' treatise reveals how an entire theoretical text could be written exclusively from treatises written or available in England.²² The insularity of Willelmus' text gives an opportunity to investigate music treatises from an Anglo-centric milieu which, in turn, will establish a foundation from which the flow of information, both to and from the continent, is better positioned in a larger context. By creating boundaries, and restricting my investigation to treatises written or copied on the island, I hope to expose the cultural and literary milieu of writers whose choices of citation and authorities tell a story of a distinct, if not entirely isolated, English version of music theory.

English theorists were imaginative, creative and innovative in their attempts to write about music as they worked in a transitional period in Western music. Changes to music notation and the methods of organizing the symbols were rapid. As Chapter 5 and 6 will show, varied and changing diagrams and mnemonic devices, such as Johannes Torkesey's outline of notation in a triangle and rests in a shield, helped to illustrate the relationship and division of measured notation.²³ Diagrams were used widely within and beyond quadrivial subjects in the Middle Ages to clarify mathematical, astronomical, liturgical and, for where what is concerned presently, musical concepts. But, why is a diagram found in the fragment source (*GB-Lbl Add. 56486a*) of *De speculatione musicae* different from that which is found in the main Cambridge manuscript (*GB-Ccc 410*)? To show how Walter's *De speculatione musicae* fits into the bigger picture among a body

²² Willelmus, *Breviarium regulare musicae*, ed. Gilbert Reaney, in *Ms. Oxford, Bodley 842 etc.* ([Rome], 1966), 15–31.

²³ Torkesey, *Declaratio trianguli et scuti*, eds André Gilles and Gilbert Reaney in *Ms. Oxford, Bodley 842 etc.* ([Rome], 1966), 58–61.

of English treatises, these final two chapters take a step back to determine how diagrams and music notation were discussed by different theorists.

The writers showed an awareness that they were in a period of change and thus the mixture of new and old ideas were bound to produce misunderstanding and error in the unlearned. Handbooks for mensural notation, such as Johannes Hanboy's *Summa*, were written to avoid corruption of the practice by the musicians of the day, 'lest on account of the shortcomings and errors of the aforesaid, the said science suffer detriment.'²⁴ In effect the general sentiment held common amongst many writers prompted him to create a new musical handbook which would not offend what was already said by those who came before, but will expose that which was found to be new, eradicating errors of the past.²⁵

The theorist Walter, called 'of Odington', is an ideal candidate for this investigation, since his treatise was influential on other English writers who followed. Though two previous editions of his *De speculatione musicae* have been made, no previous study has placed Walter's influence on English treatises in context. This treatise, its influence, and the enigmatic biography of its author is the focal point of the first half of this study. Chapter 2 revisits sources which contain biographical information for Walter Odington of Evesham Abbey, the author of *De speculatione musicae*. It has generally been accepted that Walter Odington wrote treatises on other subjects including the alchemical treatise, *Ycocedron*. Beginning by questioning the validity of primary sources which have

²⁴ 'ne forte propter defectum et errorem predictorum dicta scientia detrimentum pateretur.' Lefferts, *Robertus de Handlo "Regule" and Johannes Hanboys "Summa"*, 182-183.

²⁵ Proponimus ergo ipsam mensurabilem musicam sub compendio declarare; bene dictaque aliorum non recusabimus interponere, errores quoque destruere et effugare, et si quid novi a nobis inventum fuerit, bonis rationibus sustinere et probare.

[Therefore, we propose to expound on this mensural music in the form of a handbook, and though we will not decline to interpose the things well said by others, we will try to eradicate or put to flight errors, and if anything new is found by us, to uphold and prove it with good reasons.]

Lefferts, *Robertus de Handlo "Regule" and Johannes Hanboys "Summa"*, 182-183.

been used to inform a context for the author, it becomes apparent that the author who wrote the *Ycokedron* was not Walter Odington from Evesham Abbey but rather Walter Odington from Eynsham Abbey, an institution immediately outside of Oxford, suggesting that the musician and scientist were two different people.

Chapter 4 turns to the sources which contain *De speculatione musicae*. One manuscript source which containing the entire treatise exists today: Cambridge, Corpus Christi College, 410 (*GB-Ccc 410*). Until now, this has been the only source that can be seriously considered for scholarly research. This chapter brings to light a hitherto unstudied fragment, London, British Library MS Additional 56486a (*GB-Lbl Add. 56486a*), and places it within the other extant manuscripts to determine its significance. The evaluation of sources expands our current knowledge of sources containing Walter's treatise by providing possible stemma for each manuscript source in consideration.

The examination of Walter and his writings does not focus entirely on the newest and most revolutionary aspects of his work, which are, to be admitted, few. It should be remembered that musical influence does not always stem from the sexiest and most provocative thoughts. Jacobus's *Speculum musicae* gives one such example of a long text which extensively discusses an old practice. As Karen Desmond notes, however, much can be missed when only the innovative aspects of treatises are sought out from theoretical texts:

The problems with the ways in which research on *Speculum musicae* has been carried out is actually reflective of more general problems in our approach to the whole field of fourteenth-century music theory. We are still in the preliminary stages of understanding; we are looking to these texts to provide answers to specific problems of notation, performance or transcription; and in so doing, we skim through these

dense texts on fact-finding missions, extracting from them the nuggets of information that are most useful to us.²⁶

It is difficult to avoid an extraction of ‘nuggets that is most useful to us.’ Even the best writings on the history of music theory, such as Dorit Tanay’s determination of an intellectual context of mensural notation over 250 years, largely focus on the innovative and revolutionary aspects contained within theoretical writings, leaving unexamined conservative traditions that were fundamental to music theory.²⁷ No single study can look at every aspect of every text, yet it is essential that the mundane be examined alongside the alluring when these passages were the ones quoted and paraphrased by the younger generation. This perspective colours the present study in the six chapters that follow.

In the words of Charles Burney, Walter ‘lived in a period which furnishes but few records concerning the state of music in England.’²⁸ Today, musicologists have many more records but are equally confronted with the challenge of bringing together evidence to construct a plausible narrative to tell a convincing story of the past. A narrative requires certain components to be considered worthwhile. Firstly is the subject, either singular or plural, that propels the story forward. Second is a plot, an agenda, set out so that a continuous flow of ideas is comprehensible. If the plot is strong, the story is considered great. For a strong narrative, it is essential that the subject be comprehensible.²⁹ Unfortunately, so much of what is known about music in England

²⁶ Karen Desmond, ‘Behind the Mirror: Revealing the Contexts of Jacobus’s *Speculum musicae*’ (Ph.D. diss., New York University, 2009), 12-13.

²⁷ Dorit Tanay, *Noting Music, Marking Culture: The Intellectual Context of Rhythmic Notation, 1250-1400* ([Rome], 1999).

²⁸ Burney, *General History of Music*, 516.

²⁹ Treitler, writing on establishing a musical narrative of early music, suggests that ‘The possibility of writing narrative history depends on the positing of an “ideal object” whose continuity is followed in the narrative.’ This emphasis, he continues, has focused largely on the innovative aspects which highlights that which were novel in time. What I attempt to establish in this thesis is an examination of texts which have been considered to be less ‘innovative.’ I wish to find how the selected texts would have formed a foundation that innovation would have been proposed. By investigating the foundational texts, I wish to highlight what could have been conventional knowledge to a theorist in

hinges on sources which remain sometimes incomprehensible. Music historians have frequently had the need to confront the way in which music history has been narrated in the past. For it is on past documentation that we must build new arguments. Perhaps best describing the challenge of writing a music history which adheres to new narrative perspectives is Leo Treitler who writes: ‘One of the dimensions of historical narrative will be a narration of the changing relationship of the present to the past, generated by the historian’s engagement with past engagements with his subject.’³⁰

When it comes to the task of contextualising English authors and readers of music treatises, an array of facts are up for consideration: for the purpose of the present study, the five basic questions, who, what, when, where and how will be addressed. Working through a narrative on primary and secondary sources offers a chance to come into contact once more with how English treatises have been discussed. Thus a historiographical narrative will be made through piecing together information from manuscript sources to create a new story that is relevant to present scholarly interests.

The task at hand, establishing an intellectual milieu for music treatises associated with English theorists, has many complications. The world of music in the fourteenth century was anything but stable: musicians were required to comprehend systems of measured notation which were continuously under development; theorists hotly debated ideas of musical time and its division; musical developments were taking place in all parts of Europe. The result, a corpus of writings on music that aimed both to justify the new and to preserve the old.

medieval England. Leo Treitler, ‘What Kind of Story Is History,’ *19th-century Music*, vol. 7, Essays for Joseph Kerman (1984), 363-373, at 370-371.

³⁰ Treitler, ‘What Kind of Story Is History,’ 373.

This thesis begins first by examining an institutional context of music theory in the late thirteenth and early fourteenth centuries. The convenience of placing the instruction of music within early university in Oxford notwithstanding, manuscript evidence indicates that monastic libraries were the holders of music treatises.

MONKS SPECULATING ABOUT MUSIC

MUSIC TREATISES ARE PRIMARILY TEXTS: they are texts which first and foremost discuss music but are also texts that include a discussion of other subjects closely interrelated to itself. For this reason, it is important to understand how music treatises were incorporated within the larger environment of reading, learning and educating taking place during the Middle Ages to provide a context that is wider than circles of musical activities in England. However, early English scholastic activity remains somewhat inconspicuous, stemming from a direct result of manuscript evidence: more often than not, it is only between very thin lines found between the scant number of remaining manuscripts that facts can be gleaned for a convincing narrative to be told. There are too many missing, torn, reconstructed and reimagined tales recounting England's past and in many cases, it is simply easier to imagine what might have taken place rather than to deal with the patchy evidence that survives. One need only to turn to popular literature to find an increase of interest in creating a new narrative

account of Britain in the Middle Ages. Ian Mortimer's *The Time Traveller's Guide to Medieval England* might be one of the most imaginative social histories of its kind.¹ Mortimer specifically chooses the fourteenth century as his primary century of interest, considering it to be a century that 'comes closest to the popular conception of what is "medieval", with its chivalry, jousts, etiquette, art and architecture.'² It is within this century that he casts light onto what ordinary people might have come into contact with on a daily basis. Mortimer's aim is to bring to life what took place in medieval England by imagining ourselves within it by addressing the smells we would encounter, the places we would sleep, and the languages we might hear around us. He is bold in creating a hypothetical world based on images, texts and architecture from the past with the experiences encountered in our present-day world. Readers are asked to imagine themselves amongst the events and people to understand a past which is distant both in time and culture.³ But in contrast to the rich descriptions of other aspects of medieval daily life, Mortimer can only offer his reader this bit of enlightenment on music: 'Medieval people love music.'⁴

The vagueness of this statement is somewhat understandable considering how little is known about music from medieval England. The problem for a narrative of medieval English music is much the same as those encountered by historians: The retelling of England's musical past lacks continuity because sources are few and yet there are sources which continue to exist and it is through a close examination of their objects and content that a story of the past will emerge.

¹ Ian Mortimer, *The Time Traveller's Guide to Medieval England: A Handbook for Visitors to the Fourteenth Century* (London, 2008).

² *Ibid.*, 3.

³ A similar account of medieval Britain is Francis Pryor, *Britain in the Middle Ages: An Archaeological History* (London, 2006). Pryor explains that his book is a narrative of medieval architecture which explores topography and architectural design over political or social events. On these grounds, he avoids the pressure of creating an authoritative account such as those found in textbooks to relieve the tension to create something from little evidence. Disclaimers of this type leave the serious scholar to appreciate interesting texts of historical fiction, if only because the boundaries between imagination and available evidence can intermingle freely.

⁴ Mortimer, *Time Traveller's Guide*, 247.

Though popular literature serves the point wished to be made here, scholarly literature offers a deeper understanding of the making of English medieval history. More recent historical studies of medieval England, however, have begun to challenge the received view that the surviving sources are too few to tell the story of England's past.⁵ These posit that, contrary to received tradition which leaves English medieval history in the dark ages, there are plenty of sources from which a story of monastic England in the late Middle Ages might be told. The narrative account of monastic England, though being questioned more recently by historians, still stands on the firmly laid foundation present by Dom David Knowles' monumental writings on the subject.⁶ However, the detailed accounts of monastic activities, provided by Knowles in the three volumes, are largely based on secondary literature and not always on detailed source study.⁷ The ordinary lives of those living within the communities has been the subject of further research. Reflecting this shift of interest is Barbara Harvey whose research has changed how historians perceive monastic institutions through examining hitherto neglected sources found at Westminster Abbey, focusing on aspects of daily lives such as their food and drink, economics and charitable activities as well as the interactions with external communities.⁸

Commenting on a study of the fourteenth-century Franciscan, *Registrum Anglie de Libris Doctorum et Auctorum Veterum*, Richard H. Rouse and Mary A. Rouse make explicit the change of perspective trending among historians from large-scale political-institutional histories to studies which consider smaller, individual manuscripts as a point of departure to narrate the story of

⁵ Noteworthy among many is Richard H. Rouse and Mary A. Rouse, eds, *Registrum Anglie de Libris Doctorum et Auctorum Veterum* (London, 1991).

⁶ David Knowles, *The Monastic Order in England: A history of its development from the times of St Dunstan to the fourth lateran council 943-1216* (Cambridge, 1940).

⁷ Joan Greatrex, 'After Knowles: Recent Perspectives in Monastic History,' in *The Religious Orders in Pre-Reformation England*, ed. James G. Clark (Woodbridge, 2002), 35-50.

⁸ Barbara Harvey, *Living and Dying in England 1100-1540: The Monastic Experience* (Oxford, 1995)

individual movements of medieval life.⁹ What has now become more prominent in scholarship is a study of regional, subject-specific and close study of small records that can tell a story that is more specifically tailored to individual circumstances. The result reveals a medieval Europe which is far more complex at the grassroots level which of course affected the larger politics, theology and intellectual movements.

Although musicologists have frequently sought a historical contextualisation of manuscript sources for performance practices, this contextualisation has nearly always been made within the grand narrative of ‘music’ history in mind, sometimes leaving out the examination of how music fits into the ‘historical’ narrative. This type of isolated study of music manuscripts from other historical documents, especially in the years between *c.*1250-1370, has recently been identified by historians as shallow, for it sometimes disregards an understanding of the larger political, cultural, educational and economic developments occurring in the Middle Ages.¹⁰ Yet, historians too are guilty of lightly brushing over the significance of musical developments occurring in the thirteenth and fourteenth centuries for, unlike visual arts, literature or architecture, an understanding of music requires a certain level of training, if not a devoted interest in the subject which requires years of dedicated study. Thus it has sometimes been difficult to unite the two disciplines even if a unification would result in clarification.¹¹ Because the study of music theory involves not only the study of musical developments but also an understanding of the intellectual, scholastic and

⁹ Rouse and Rouse, *Registrum Anglie de Libris Doctorum*, xxi.

¹⁰ R. N. Swanson, *The Twelfth-century Renaissance* (Manchester, 1999), 182.

¹¹ The new interdisciplinary models of scholarship have begun to redress this lack of communication across disciplines, perhaps most noteworthy in medieval musicology circles is the joint research platform established by Helen Deeming and Ardis Butterfield through their *Medieval Song Network* (www.medievalsongnetwork.org [Last accessed 11 April 2014]). The lively discussion at opening workshop at the University of London (Workshop 1: 6-7 September 2010) revealed how much two related and integrated fields of study could be divergent.

literary traditions of the Middle Ages, it is of greater significance for the ‘historical’ and ‘musical’ contexts to be clear when discussing its placement within medieval society.

What survives from the fourteenth century (as will become increasingly clear in the course of this thesis) is evidence that music theorists in England were actively reading and writing musical texts that taught both old and new practices. But where were they doing this? This chapter seeks to establish an intellectual milieu that could have cultivated a transmission of music theory by examining manuscript evidence and library records. Though a broad picture that considers other events taking place in European regions will be discussed, the primary concern here will be the placement of *musica speculativa* in England. My goal here is not to write exclusively for historians or especially for musicologists but rather to combine information from both disciplines into one cohesive discussion. Ultimately, it will be shown here that while generalisations can help solve the larger problem of the identifying of universal movements and trends, it is also necessary to consider small regional differences which contribute to the grand narrative.

The place of *musica* in universities

It has commonly been thought that during the Middle Ages music instruction of a higher level took place within the walls of a university.¹² Nan Cooke Carpenter, Alan Cobban, and John North all propose that speculative and practical disciplines of music were taught simultaneously within a university curriculum, balancing practical music making with speculative theorising.¹³ Such suggestions were made on the grounds that the four arts of the *quadrivium* (arithmetic,

¹² This perspective is still reflected in the most recent general history text by Richard Taruskin. See: Richard Taruskin, *The Oxford History of Western Music* (Oxford, 2009), Volume 1, Chapter 7.

¹³ Nan Cooke Carpenter, *Music in the Medieval and Renaissance Universities* (Norman, 1958); Alan Cobban, *English University Life in the Middle Ages* (London, 1999); John North, ‘The *quadrivium*’, in *A History of the University in Europe*, eds Walter Rüegg and H. De Ridder-Symoens (Cambridge, 2003), 337-360.

geometry, music and astronomy) represented the foundational subjects which would have been central to a university education. Evidence used by Cobban and Carpenter supporting the presence of music within the arts faculty come from degree records from both Cambridge and Oxford, and that students were ‘sometimes required to compose a mass and antiphon.’¹⁴ Yet the degree records from which this statement is taken come from much later sources than is the concern here: a composition was a part of the requirement from the sixteenth century. North refers to the instruction of Boethius’ seminal treatise, *De institutione musica*, at Oxford, but this record comes only from a university statute of 1431—a date commonly cited as the earliest record of music education at the university.¹⁵ This later date in the fifteenth century is much later than the foundation of universities which occurred in the thirteenth century.

The generalised histories narrated by the historians above indicate that by the early fifteenth century, music could be found as a part of the instruction taking place in colleges at Oxford. This correlates well with the inception, foundation and gradual fame that Oxford colleges held in the later Middle Ages for higher learning. However, it should be remembered that the Oxford colleges were founded gradually over the course of two centuries and were not created but rather a result of an emerging interest in organised learning: the first college founded at Oxford was University College at around 1248. Several decades later Balliol (*c.*1263) and then Merton (1264) colleges emerged. The three colleges seem to have been sufficient for nearly four decades when, in 1314 Exeter College was followed by Oriel (1326), Queen’s (1340), New (1379) were established.

¹⁴ Cobban, *English University Life*, 157.

¹⁵ North, ‘The *quadrivium*’, 344.

Nearly five decades passed again before three more colleges were added in the fifteenth century: Lincoln (1427), All Souls (1438), and Magdalen (1458).¹⁶

The dates above represent the founding of colleges, though it is commonly acknowledged that some type of learning and educational pursuits were taking place in the location where Oxford University now stands from around 1095.¹⁷ This education was led by schoolmasters who provided basic education for the surrounding people. Oxford was not a wealthy merchant town in the twelfth century. Nevertheless, as with many other towns throughout England, there was a need for merchants as well as government officials to gain a basic education, such as learning Latin, in order to maintain the ability to conduct business within a greater region. The schools that could be found at Oxford resembled those which could be found in any other town with similar requirements.¹⁸ Thus these early schools were not places of higher education but places where pupils arrived from local regions to gain an educational foundation. To gain further education in the twelfth century, most English monks would have had to travelled to the continent, either to Paris or to Bologna.¹⁹ By the late twelfth century, the convenient location of Oxford was considered ideal, becoming a centre for the gathering of ecclesiastical courts to discuss law. While the reputation of legal studies increased a crisis in 1209 – the murder of a student’s mistress which led to the hanging of two students – led to an almost complete desertion of Oxford by its masters and pupils between the years 1210 and 1214.²⁰ The dates given from the thirteenth century resulted from the necessity to

¹⁶ N.R. Ker, *Books, Collectors and Libraries: Studies in the Medieval Heritage*, ed. Andrew G. Watson (London, 1985), 301.

¹⁷ R. W. Southern, ‘From Schools to University’, *The History of the University of Oxford*, ed., J.I. Catto, vol. 1 (Oxford, 1984), 1-36, at 2-3.

¹⁸ *Ibid.*, 10.

¹⁹ Once returning to England, there are records that scholars first went to Northampton to set up classes for potential students because the chance to gain a following there was much higher. Southern, *The History of the University of Oxford*, 11-13.

²⁰ Southern, *The History of the University of Oxford*, 26.

organise students after long negotiations between town and gown successfully reinitiated teaching.²¹

The establishment of Oxford colleges was anything but straight forward in its early foundation and it was only in the beginning of the fifteenth century that other colleges followed with a stronger emphasis on musical activities.²² Simply because music existed in colleges in later centuries does not imply that it formed part of the original subjects studied by early university students. In reality what the few manuscript sources reveal the contrary: once colleges began to write statutes, it becomes evident that music was discouraged for its distractive nature.

The placement of music within the university setting before the fourteenth century is difficult owing to the few records that exist from this period. Instead of sources which point to a lively musical scene, there is evidence that challenges whether the presence of music at the medieval university existed at all: a Queen's College statute of 1340 (one of the first statutes written at the time of its foundation) for example, prohibits musical instruments for the danger they posed to the productivity of students.²³ This statute is only a single instance which may have been an exception to the norm. However, further indications suggest that there was little study of any quadrivial subjects within the walls of Oxford colleges. Within the arts faculty is evidence that students engaged in the study of arithmetic or music are scarce; rather, most were devoted to astronomy in English institutions.²⁴ The relative neglect of quadrivial studies in English institutions is both puzzling and enlightening since it has been presumed that arithmetic, geometry, music and astronomy would have been studied equally as foundational knowledge.

²¹ *Ibid.*, 31-33.

²² Beth Anne Lee-De Amici, 'Cum nota solenniter celebret: music in the chapel of All Souls College, Oxford, 1445-1550,' *Renaissance Studies*, vol. 18 (2004), 171-207, at 171 & 172.

²³ Alan Cobban, *The Medieval English Universities: Oxford and Cambridge to c.1500* (Aldershot, 1988), 362.

²⁴ Cobban, *English University Life*, 157.

Yet despite their great efforts, scholars of early university studies in all European regions have never been able to clearly identify a set curriculum of the study of quadrivial subjects. Nearly all historians agree that though an awareness of quadrivial subject can be found, there is no acknowledgement for the importance of an in-depth study of the four subjects. Instead, the *trivium* sufficed for the foundational study that most students interested in attending the early universities required. Prior to a university education, students would have entered Cathedral schools or received some form of foundational education from monastic institutions. The instruction received here would have traditionally expounded upon knowledge as abstract information. Most were considered useful for the ecclesiastical service that would follow their schooling.²⁵ In the new colleges founded in Paris and at Oxford at the end of the thirteenth century, the emphasis had shifted to provide knowledge as a source for professional training (such as in law or in medicine) rather than as a means to gain knowledge as a scholar.²⁶ Thus an emphasis on subjects considered useful within ecclesiastical confines was not the only interest of students coming into the colleges.

It should be stressed here that professionalization of an education curriculum in these early colleges was the main goal of the curriculum. Olaf Pedersen, Gordon Leff, Walter Rüegg, Jacques Verger and Paolo Nardi all note the transformation of academic interest that followed the resurgence of Aristotelian studies in the thirteenth century.²⁷ The alteration of purpose to seek out knowledge for professional purposes would have caused subjects that had little impact to the

²⁵ Swanson, *The Twelfth-century Renaissance*, 20-21.

²⁶ Though it is uncertain for how the early university was specifically structured its instruction, that the late thirteenth century was one of transition can be derived from the records by Roger Bacon, John of Garland, and Henry of Avranches. Leff, *Paris and Oxford Universities*, 144; Pedersen, *First Universities*, see especially chapter 10, 271-301.

²⁷ Olaf Pedersen, *The First Universities: Studium Generale and the Origins of University Education in Europe*, trans. Richard North (Cambridge, 1997); Gordon Leff, *Paris and Oxford Universities in the Thirteenth and Fourteenth Centuries: an institutional and intellectual history* (New York, 1968); Gordon Leff, *A History of the University in Europe*, vol. 1, *Universities in the Middle Ages*, ed. Hilde de Ridder-Symoens (Cambridge, 1992); Walter Rüegg, 'Themes', Jacques Verger, 'Patterns', Paolo Nardi, 'Relations with Authority', in *A History of the University in Europe*, vol. 1, ed. Walter Rüegg (Cambridge, 1992), 3-106.

pursuit of law and medicine to become less important, especially if they were did not contribute to further studies. The shifted interest in practical learning correlates to an increased economic interest—that is, payments made for learning and fees set for teaching. This coupled with the fact that when students departed colleges they were encouraged to pursue a secularised profession, meant that students were no longer interested in pure knowledge.²⁸ Instead, there was an incentive to search for the most influential or committed teacher, especially for those economically capable to travel long distances.²⁹ This would, in turn, allow for students to later establish themselves as instructors or professionals with more credibility, much in the same way that the academic structure operates in the modern day.

In short, while the *trivium* was still a basis for the structure of a basic education, towards the end of the thirteenth century the traditional purpose for a higher level of education, that is, to expand one's knowledge in order to serve a monastic cause, had become less relevant.³⁰ What has transpired above that English institutions before the turn of the fifteenth century did not look favourably on music. Thus, the place of speculative music—a subject which would certainly offer little benefit to the study of law or medicine—becomes even more likely to not be placed within a university curriculum.

This lack of evidence that music was ever instructed within the early English university accords with what has recently been discovered about the colleges in Paris, a place central to much musical development. Recent research suggests that alternative locations were more likely places

²⁸ Swanson, *The Twelfth-century Renaissance*, 7-10.

²⁹ *Ibid.*, 27.

³⁰ For instance, at the beginning of the thirteenth century dialectic and philosophy had replaced the other liberal arts. With the inclusion of Aristotelian philosophy among other influences, grammar and rhetoric were replaced by logic and philosophy, changing the structure and elements contained in the *trivium*. Leff, *Paris and Oxford Universities*, 118-119.

for the practice of music. Sarah Fuller examined how the teaching of music could have taken place by individually assessing manuscripts that were subsequently pieced together to create a treatise, *Ars nova*, attributed to Phillip de Vitry.³¹ Since no one extant source could be found as an exemplar, Fuller hypothesised that de Vitry's teachings could have been compiled by individual teachers who brought back the new methods of musical notation from other institutions. Because Fuller was unable to find any single institution that might have served as a central milieu for instruction, she suggests that *musica speculativa* was of interest only to a narrow circle of clerics especially interested in music and who studied the subject privately.³² In a study which investigates the placement of music within the art faculty, Gilles Rico attempted to locate the institution where practical music was provided within the colleges at Paris.³³ His aim was to discover a potential link for the development of *musica mensurabilis* at the university yet the results reflect what Fuller had already suggested, that because university authorities very rarely showed any interest for practical music, whether this music was polyphonic or monophonic, it is impossible to consider that any musical developments would have been coming from within the Arts Faculty in Paris.³⁴ In a similar study concerning the position of speculative music education in the university, Joseph Dyer shared the conclusion that there was no place in the formal academic dispute or in lectures for a discourse of music in thirteenth-century Paris.³⁵ In addition to what has been shown by Rico and Dyer, Michel Huglo and Barbara Hagg investigate manuscript and library records from Paris to determine

³¹ Sarah Fuller, 'A Phantom Treatise of the Fourteenth Century? The *Ars Nova*,' *The Journal of Musicology*, vol. 4 (1985-1986), 23-50.

³² *Ibid.*, 46.

³³ Gilles Rico, 'Music in the Arts Faculty of Paris in the Thirteenth and Early Fourteenth Centuries' (D.Phil. Thesis, Oxford, 2005).

³⁴ *Ibid.*, 306.

³⁵ Joseph Dyer, 'Speculative 'Musica' and the Medieval University of Paris,' *Music & Letters*, vol. 90 (Oxford, 2009), 177-204.

ownership and readership of music theory.³⁶ Their preliminary study shows that monasteries and small colleges, rather than secular churches, held books on music in Paris.³⁷

Other studies also place speculative music within institutions outside of the colleges. Because grammatical references can often be found to explain basic principles and ideas about music, Max Haas highlights the possibility that music treatises may have been intended for younger scholars than university students at Paris.³⁸ Karen Desmond's study of Jacobus's *Speculum musicae* and Laura Weber's study of Jerome de Moravia's *Tractatus de musica* suggest that music these works were likely to have been read by a small group of enthusiasts within monastic institutions than at the colleges in Paris.³⁹ Renata Pieragostini indicates that one such small circle engaged in transmitting music theory were the Augustinian Hermits.⁴⁰ It should not come as a surprise that Olaf Pedersen's study of the *Studium generale* is silent on the role of music within the arts faculty at the foundation of early European universities.⁴¹ Instead, it is only in later centuries that music became an important part of a university curriculum.

The generalised histories that advocate the place of music within universities are accounts which paint a broad picture of the Middle Ages, leaving out many details of a transitional period. Just as regional differences should be taken into consideration, it will be considered important in

³⁶ Michel Huglo and Barbara Haggh, 'The Topography of Music Theory in Paris, 900-1450', *City, Chant, and the Topography of Early Music*, eds Michael Scott Cuthbert, Sean Gallagher and Christoph Wolff (Cambridge, Mass., 2013), 275-316.

³⁷ *Ibid.*, 314.

³⁸ Max Haas, 'Studien zur mittelalterlichen Musiklehre I: Übersicht über die Musiklehre im Kontext der Philosophie des 13. und frühen 14 Jahrhunderts,' *Forum Musicologicum*, vol. 3 (1982), 323-456; at 351-353 & 368-371.

³⁹ Karen Desmond, 'Behind the Mirror: Revealing the Contexts of Jacobus's *Speculum musicae*' (Ph.D. diss., New York University, 2009); Laura Weber, 'Intellectual Currents in Thirteenth Century Paris: A Translation and Commentary on Jerome of Moravia's *Tractatus de musica*' (Ph.D. diss., Yale University, 2009).

⁴⁰ Renata Pieragostini, 'Augustinian networks and the Chicago music theory manuscript,' *Plainsong and Medieval Music*, vol. 22 (2013), 65-85.

⁴¹ Olaf Pedersen, *The First Universities: Studium generale and the origins of university education in Europe*, trans. Richard North (Cambridge, 1997).

this thesis to separate the placement of music in later centuries from the inception of intellectual movements relevant to the study of music theory.

Instead, there must have been in England alternative centres that held a much more significant role in the transmission of music theory at this time. Because no reference to music is made in early university statutes, nor when music is mentioned is it encouraged, it is concluded here that university colleges in the thirteenth and early fourteenth-centuries had little to do with the transmission of music. The manuscript and library records from England reflect this observation.

Music in the monasteries

Within England, the alternative centres of intellectual activities were the wealthy monasteries scattered across the island. It has been noted that music was cultivated within these as well as cathedral priories throughout the country.⁴² It should be no surprise then to find texts on music within these institutions. Even if there was an established gathering of scholars to exchange theoretical ideas, it would still be necessary from time to time to consult the seminal texts of music theory. Still seminal to many theorists was the writings on music by Boethius, namely his *De institutione musica*.⁴³ With the revival of and awareness of the usefulness of this text in the

⁴² Peter M. Lefferts, 'The Motet in England in the Fourteenth Century' (Ph.D. diss., Columbia University, 1983), 16-17.

⁴³ The importance of Boethius' text is reflected in modern interest on the topic. The nineteenth-century edition by Gottfried Friedlein is the latest philological edition of this treatise and continues to serve as reference text: Boethius, *De institutione musica*, ed. Gottfried Friedlein (Leipzig, 1867). The translation provided by Calvin Bower has, ever since its creation, served as an invaluable text for modern scholarship: Boethius, *Fundamentals of Music*, trans. Calvin M. Bower, ed. Claude V. Palisca (New Haven, 1989). The general circulation of Boethius' *De institutione musica* has been studied particularly by Calvin Bower. See the following studies: 'Boethius' *De Institutione Musica*: A Handlist of Manuscripts', *Scriptorium*, vol. 42 (1988), 205-251; 'The Modes of Boethius', *The Journal of Musicology*, vol. 3 (1984), 252-263; 'The Transmission of Ancient Music Theory into the Middle Ages', in *The Cambridge History of Western Music Theory*, ed. Thomas Christensen (Cambridge, 2002), 136-167. Glosses of Boethius were studied by Michael Bernhard: Michael Bernhard, 'Glosses on Boethius' *De institutione musica*', in *Music Theory and Its Sources: Antiquity and the Middle Ages*, ed. André Barbera (Notre Dame, Indiana, 1990), 136-149; *Glossa Maior in institutionem musicam Boethii*, eds Michael Bernhard & Calvin Bower, 3 vols (Munich, 1993-1996). Gilles Rico, 'Music in the Arts Faculty'

Carolingian renaissance, Boethius became to music theorists in medieval Europe a household name to those pursuing the study of music.⁴⁴ Though it is questionable how much of the text theorists read or cared to understand, it was one text which offered a foundation of knowledge onto which a debate could be founded. Its impact lasted for centuries. For this reason, the place in which the text could be read becomes of interest when considering the transmission of musical knowledge in England.

Though a Parisian musical and intellectual milieu is more convincingly recreated, English manuscripts remain notoriously difficult to contextualise.⁴⁵ Yet monastic libraries and their holdings reveals surprising evidence: nearly all records indicate that *De institutione musica* by Boethius was in possession here. 20 extant manuscripts from the tenth to fourteenth centuries exist today in England that contain either complete copies (sometimes with extensive glosses) or partial excerpts of Boethius's *De institutione musica*.⁴⁶ The provenance and dating of English manuscripts

notes further glosses of Boethius' text while providing an up-to-date bibliography for Boethius studies. Elizabeth Mellon has studied the diagrams in *De institutione musica*: Elizabeth Mellon, 'Inscribing Sound: Medieval Remakings of Boethius's *De institutione musica*' (Ph.D. diss.: University of Pennsylvania, 2011). See also: Alexander Rausch, 'Der Boethius-Kommentar in der Handschrift St. Florian XI 282', *Studien zur Musikwissenschaft*, vol. 48 (2002), 7-83; Max Haas, 'Studien zur mittelalterlichen Musiklehre'; Anonymous, *Commentum Oxoniense in musicam Boethii. Eine Quelle zur Musiktheorie an der spätmittelalterlichen Universität*, Michael Hochadel ed. (Munich, 2002); Christian Meyer, 'Lectures et Lecteurs du *De institutione musica* de Boèce au 13^e siècle', in *Boèce ou la chaîne des savoirs*, ed. A. Galonnier (Louvain, 2003), 665-678.

⁴³ Bower, 'Boethius' *De institutione musica*', 205-251.

⁴⁴ Haas, 'Studien zur mittelalterlichen Musiklehre I', 337.

⁴⁵ Andrew G. Watson's extensive studies with English manuscripts reflects the difficulties of reconstructing a history for medieval manuscripts in England. See especially: Andrew G. Watson, 'The Post-Medieval Library of All Souls College, Oxford,' *Medieval Manuscripts in Post-Medieval England* (Aldershot, 2003), I. 65-91. Contrarily, the work by Mary A. Rouse and Richard H. Rouse of the history of one of Europe's greatest medieval book collection, the Sorbonne library, gives names and dates that are significantly lacking in records of the early English libraries. For example, the will of Robert of Douai from 1258 donates 1500 Parisian pounds for the purchase of books. A Bible was left to the library by Master John of Gondricourt in 1262; Master Nicholas of Vrigny donated seventeen books and 500 Parisian pounds in 1264 and 1266; and the Dean of Soignies gave among other goods, glossed texts of Pauline epistles and the gospels of Luke and John. The lack of this type of detailed account make the early foundation of Oxford college libraries difficult to construct. Mary A. Rouse and Richard H. Rouse, *Authentic Witnesses: Approaches to Medieval Texts and Manuscripts* (Notre Dame, IN, 1991), 346. It is only in the last quarter of the fourteenth century that colleges at Oxford saw equivalent types of donations with attributable donors. N.R. Ker, *Books, Collectors and Libraries: Studies in the Medieval Heritage* (London, 1985), 311-320.

⁴⁶ Bower, 'Boethius' *De institutione musica*', 205-251.

reveals that Boethius's text was transmitted widely especially in the twelfth century (see Table 1.1, below).⁴⁷

⁴⁷ A comprehensive study which compares and carefully examines manuscripts containing Boethius' treatise copied between the tenth-thirteenth centuries within England is yet to be conducted. This study would reveal facts to provide a better understanding for the availability and transmission of *De musica* in early medieval England and would be of considerable value for a better understanding of an intellectual milieu at the time. As the main focus of this current study is not Boethius, a careful survey of manuscripts will have to be the subject of a further investigation. For now, it is only possible to provide a brief overview.

TABLE 1.1 English manuscripts containing Boethius's *De institutione musica* (900-1400)⁴⁸

	MANUSCRIPT	BOWER #	YEAR (approx.)	ORIGIN and [LATER OWNERS]
1.	Cambridge, Corpus Christi College, MS 260	15	900-1000	Canterbury, Christ Church
2.	Cambridge, University Library, MS Ii. III.12	18	1120-1150	Canterbury, Christ Church
3.	London, Lambeth Palace, MS 67	48	1125-1150	Bury St. Edmunds [John Dee] ⁴⁹
4.	Oxford, Bodleian Library, Ashmole MS 1524*	68	1150-1200	Flemish? English? Glosses possibly written by Grosseteste
5.	Cambridge, Trinity College, MS 944 (R.15.22)	17	1130-1160	Christ Church, Canterbury
6.	Milano, Biblioteca Ambrosiana, MS Q.9.sup.*	53	1100-1200	Christ Church, Canterbury
7.	München, Bayerische Staatsbibliothek, MS Clm 367	55	1100-1200	English, Canterbury?
8.	Oxford, Balliol College, MS 306	72	1100-1200	[Simon Bredon?]
9.	Oxford, Balliol College, MS 317	73	1100-1200	England? [Peter of Cossington (Oxford)] ⁵⁰
10.	Oxford, Corpus Christi College, MS 118	74	1100-1200	[John Dunstable, ⁵¹ Robert Greene of Welbe; John Dee]
11.	Oxford, Jesus College, MS 4	76	1100-1200	England? [Persnore]
12.	Oxford, Trinity College, MS 47	79	1100-1200	[Persnore; bequeathed to Merton College in early 14th c. by master Bryce de Sharstead.] ⁵²

⁴⁸ This table is based on data from Bower, 'Boethius' *De institutione musica*, 205-251. When information is provided within square brackets, it is taken from the category given within Bower's article which indicates the manuscript's subsequent location or ownership (shown in as LOC by Bower). The order of manuscripts has been made according to their dates.

⁴⁹ According to the dating which has been given by Rodney Thompson, this manuscript is one of the earliest manuscripts containing Boethius' *De institutione musica* which survives in England, dating from 1125-50. See: Richard H. Rouse and Mary A. Rouse eds, *Henry of Kirkestede, Catalogus de libris authenticis et apocryphis*, (London, 2004), 169 & R. Sharpe, et. al. eds, *English Benedictine Libraries: The Shorter Catalogues* (London, 1996), 63-78. See also footnote 76 on page 627 in R.M. Thomson, 'The Library of Bury St. Edmunds Abbey in the Eleventh and Twelfth Centuries', *Speculum* vol. 47 (1972), 617-645.

⁵⁰ This manuscript also appears in Table 1.9 below.

⁵¹ Rodney M. Thompson has recently confirmed that the ownership of this book was once by John Dunstable, the 15th-century composer. See 'John Dunstable and his books' *The Musical Times*, vol. 150, no. 1909 (Winter, 2009), 3-16.

⁵² According to research by Charles Burnett, it is within this manuscript that significant connections to the works of Adelard of Bath can be made through the glosses. See: Charles Burnett, 'Adelard, Music and the Quadrivium', in *Adelard of Bath: An English Scientist and Arabist of the Early Twelfth Century*, ed. Charles Burnett (London, 1987), 69-86.

13.	Wellington, Turnbull Library, MS 16	130	1100-1200	Canterbury, Christ Church [<i>John Bull?</i> <i>Adam Shakerley</i> ; <i>Alexander Turnbull</i>]
14.	Oxford, Corpus Christi College, MS 224	75	1200-1300	York, St. Mary [<i>John Dee</i>]
15.	Oxford, Bodleian Library, Selden supra MS 25 (Olim 3413)	71	1200-1300	Canterbury, St. Augustine Abbey [<i>John of London</i> ; <i>W. Patten</i> ; <i>John Selden</i>]
16.	Oxford, Bodleian Library, Auct MS F. 3.13 ⁵³ (Olim 2177, Dobl. 579)	69	1200-1300	English [<i>Kenilworth</i>]
English manuscripts which contain excerpts of Boethius				
17.	Oxford, Bodleian Library, Digby MS 191	X11	1200-1300	Oxford [Merton College]
18.	London, British Library, Harley MS 625	X6	1300-1400	Oxford, Simon Bredon? [Merton College, John Dee]
19.	London, British Library, Harley MS 957	X7	1300-1400	England
20.	Roma, Biblioteca Apostolica Vaticana, Reg. lat. 1146 ⁵⁴	X15	1300-1400	England

⁵³ Although space is left within this manuscript, no diagrams are contained.

⁵⁴ This manuscript contains a somewhat corrupt version of Liber I, capitulum 27. Bower, 'Boethius' *De institutione musica*, 246.

Of the surviving manuscripts, 16 transmit the entire work of *De institutione musica*, while four only contain selected passages. Furthermore, the manuscripts with excerpts are dated as having been written later than the full copies, all placed within the fourteenth century (except for Oxford, Bodleian Library, Digby MS 191). See Tables 1.2 and 1.3.

TABLE 1.2 Complete MS copies of Boethius		TABLE 1.3 Excerpt MS copies of Boethius	
YEARS	NUMBER	YEARS	NUMBER
Pre-1000	1	Pre-1000	0
1000-1100	0	1000-1100	0
1100-1200	12	1100-1200	0
1200-1300	3	1200-1300	1
1300-1400	0	1300-1400	3
Total	16	Total	4

Most evident in Table 1.2 (above) is the significant copying of the treatise during the twelfth century: more than three-fourths of the surviving complete works of *De musica* were produced during this century, making it the pinnacle century in which Boethius's treatise was copied.⁵⁵ The three copies made in the thirteenth century trail after the previous and were repercussions of what was a tendency from the previous century. Once the texts existed in monastic libraries the creation of new manuscripts declined since they would have been readily available for consultation.

⁵⁵ According to Bower's handlist, later excerpts contain various different portions of Boethius's *De institutione musica*. Oxford, Bodleian Library, Digby MS 191 is a short exposition on music (*Brevis expositio musicae*) contains excerpts from the treatise in addition to a summary covering seminal topics within *De institutione musica*. London, British Library, Harley MS 625 contains summaries and extracts from both Boethius's *De institutione musica* and Guido of Arezzo's *Micrologus*. Harley MS 957 contains summaries and extracts of *De musica* from Books I, II and IV. The manuscript Roma, Biblioteca Apostolica Vaticana, Regimensis MS lat. 1146 only includes a fraudulent version of the 27th chapter, *Qui nervi quibus sideribus comparentur* (To what heavenly bodies the strings are compared) from Book I. According to four manuscripts, no pattern which can be derived for the transmission of excerpts can be found. Each served a different purpose - perhaps for private study or simply to be included within an anthology of other treatises for a new manuscript. Bower, 'Boethius' *De institutione musica*, 244-246.

In addition to the chronology above, the survey of Boethian sources in England indicates that manuscripts containing *De institutione musica* were widespread. Table 1.4 (below) highlights the place of supposed origin, the year in which it is thought to have been copied and the number of manuscripts connected with individual institutions.

PLACES OF ORIGIN	YEAR(s)	NUMBER OF MS
COMPLETE COPIES		
Canterbury, Christ Church	900-1200	5 (+1?) ⁵⁶
Bury St Edmunds	1125-1150	1
England (general)	1100-1200	1
Pershore	1100-1200	2
Canterbury, St Augustine Abbey	1200-1300	1
York, St Mary	1200-1300	1
Kenilworth Castle	1200-1300	1
EXCERPTS		
Oxford	1200-1400	2
England (general)	1200-1400	2
TOTAL		17 ⁵⁷

Notable is that nearly half are attributable or possibly attributable to Canterbury, Christ Church, located near to the South-East coast of England. Yet, additional copies were made in several other locations throughout England. The two manuscripts with possible attributions to Pershore in Worcestershire and Kenilworth in Warwickshire indicate that complete works by Boethius could be found in the Western regions of England.⁵⁸ From the thirteenth century

⁵⁶ The number in question here represents the Munich manuscript, Bower no. 55.

⁵⁷ Oxford, Bodleian Library, Ashmole 1524 has been excluded from this table since this manuscript is believed to have originated in the Flemish region. Two further manuscripts, Oxford, Balliol Coll., 306 (Bower, no. 72) and Oxford, Corpus Christi College, 118 (Bower, no. 74) do not have any solidly attributable English locations and have thus been excluded from this table.

⁵⁸ In a personal conversation with Calvin Bower, I was informed that many manuscripts should be revisited to confirm their provenance. Most have been dated and allocated their respective places through codicological evidence but further

onwards copies of Boethius' text were produced as far north as York. However, the excerpt copies of *De institutione musica* from Oxford appear to have been later products copied in the thirteenth and fourteenth centuries, hardly supporting a theory that the university was central to the transmission of music theory.⁵⁹

Monastic library records

In addition to the manuscripts appearing on Bower's list, library catalogues record no longer surviving Boethian sources at monastic institutions.⁶⁰ The records show nine copies of *Musica Boecii*, or similarly labelled texts, at seven Benedictine and Augustinian institutions (Llanthony Priory had three copies). Eight more institutions, including the Cistercian Woburn Abbey, had copies of a book titled *De musica* that are likely by Boethius. Four combined *De musica* with *De aritmetica* (Whitby Abbey's specifically indicates that the works were contained within one volume). In addition to Boethius, Peterborough had other music treatises, including a work

comparative study as a group of sources should bring to light more specific connections which have hitherto been unknown.

⁵⁹ I refer here to the following manuscripts with Boethian texts from Table 1.1 above: *GB-Ob Digby 191*; *GB-Lbl Harley 625*; *GB-Lbl Harley 957*; *I-Rvat Reg. lat. 1146*.

⁶⁰ The availability of medieval library catalogues for the study of England in the Middle Ages has been greatly enhanced by the recent completion of works through the Corpus of British Medieval Library Catalogues. Though not yet a completed project, the volumes which are already in print allow for some verification of how Boethius's *De institutione musica* manuscripts were positioned within ecclesiastical libraries throughout England, Scotland and Wales. It is possible then to reconstruct an entirely different picture of where Boethius's treatise could be found throughout the British Isles. What is more, our knowledge of actual locations of manuscripts through library records provides more insight into institutional affiliations for this authoritative treatise. As of 2009, 13 volumes have appeared in print while 8 more volumes await publication.

by Guido of Arezzo (probably his *Micrologus*).⁶¹ Table 1.5 (below) contains a list of monastic institutions with an indication that *De speculatione musica* was held in their library.⁶²

TABLE 1.5 Abbeys where *De institutione musica* is recorded in medieval library catalogues

	MONASTIC INSTITUTION	YEAR(s)	RECORD	CONTENT
1	Bury St Edmunds (Benedictine)	1100-1200	Oxford, Pembroke College, MS 47, f. 118r; 119r	Aritmetica et musica
2	Whitby Abbey (Benedictine)	1150-1200	Catalogue of the Library	Proemium arithmetice et musice proemium in uno uolumine
3	Waltham Abbey (Augustinian Canons)	1150-1225	London, Newham Museum Service, MS LD PEM AD/AY 0001, f. 158r	Arsmetrica ¹ et Musica
4	Rochester Priory (Benedictine)	1202	London, British Library, Royal MS 5 B. XII f. 3r	Musica Boetij
5	Glastonbury Abbey (Benedictine)	1247/48	Cambridge, Trinity College, MS R.5.33 f. 103v	Boecius de musica. leg<ibilis>
6	Llanthony Priory (Augustinian Canons)	1355-1360	London, British Library, Harley MS 460, f. 9r	1. Musica Boecij; 2. Musica Boecij; 3. Musica Boicij de addicione cordarum.

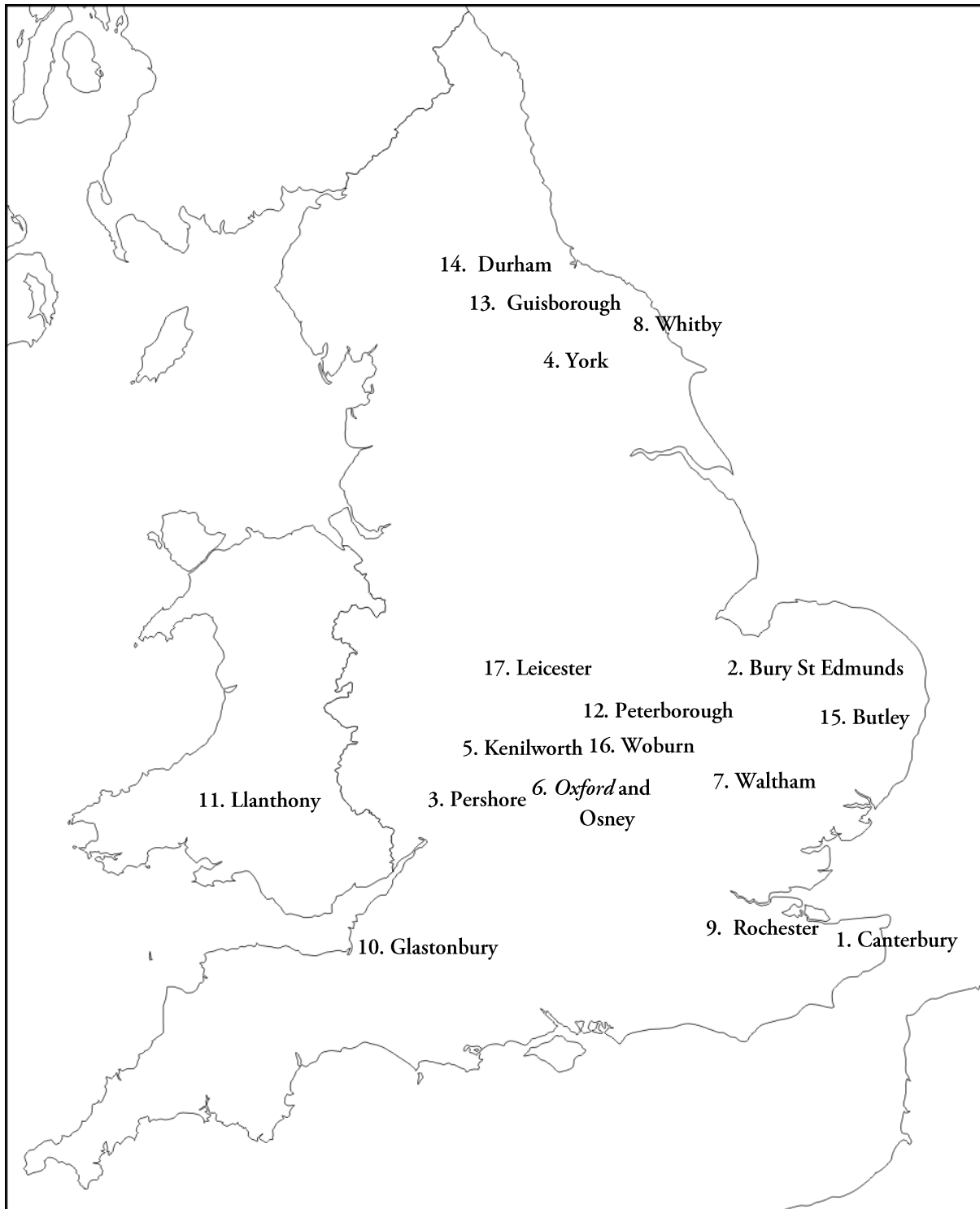
⁶¹ Interestingly, the library catalogue indicates that this manuscript was owned by Henry of Kirkestede (c. 1314-c.1378), a Benedictine monk who eventually became prior of the royal abbey of Bury St Edmunds. It is assumed that the list for this catalogue began around 1338. The task at hand was apparently considerable at the time since the 1500-2000 books had not been catalogued properly since the twelfth century. Mary A. Rouse and Richard H. Rouse eds, *Henry of Kirkestede, Catalogue de libris autenticis et apocrifis*, xliii-li, xxix.

⁶² The entries within this table have been taken from selected volumes of the Corpus of British Medieval Library Catalogues: K.W. Humphreys ed., *The Friars' Libraries* (London, 1990), 150; Rouse and Rouse, *Registrum Anglie de Libris Doctorum*, 210-211; R. Sharpe, et. al. eds, *English Benedictine Libraries: The Shorter Catalogues* (London, 1996), 63, 78, 201, 518, 642, 661; T. Webber and A.G. Watson eds, *The Libraries of the Augustinian Canons* (London, 1998), 79-80, 318, 433; Karsten Friis-Jensen and James M. W. Willoughby eds, *Peterborough Abbey* (London, 2001), 100; Rouse and Rouse, *Henry of Kirkestede*, 169.

7	York, St Mary (Benedictine)	1372	Dublin, Trinity College, MS 359, f. 47v	Boecii arismetria 3 diebus ¹ libris eiusdem musica in 5 libris
8	Guisborough Abbey (Augustinian Canons)	1300-1350	Oxford, Bodleian Library, Tanner MS 165 <i>(Registrum Anglie de Libris Doctorum et Auctorum Veterum)</i>	De musica
9	Durham Abbey (Benedictine)	1300-1350	Oxford, Bodleian Library, Tanner MS 165	De musica
10	Butley Abbey (Augustinian)	1300-1350	Oxford, Bodleian Library, Tanner MS 165	De musica
11	Woburn Abbey (Cistercian)	1300-1350	Oxford, Bodleian Library, Tanner MS 165 & Cambridge, Peterhouse MS 169	De musica
12	Peterborough Abbey (Benedictine)	1350-1400	Peterborough Cathedral, MS 15, f. 7v	a. Musica Boecii b. Musica Gwydonis et c. alii parui tractatus de musica
13	Osney Abbey (Augustinian)	1436-1444	Worcester Cathedral, MS Q.27	Item musica Boecii
14	Leister Abbey (Augustinian)	1450-1500	Oxford, Bodleian Library, Laud Misc. MS 623, f. 37v	Musica Boecii

The wide circulation of Boethius is particularly noticeable. *De institutione musica* was available (and, presumably read and studied) at institutions scattered throughout England and even into Wales (see Map 1, below).⁶³

⁶³ The modern process of compiling records from monastic libraries began with Montague Rhodes James in the early twentieth century. The representation of institutions here only reflects the incomplete research currently available. Further investigation should be made since it would reveal why the institutions indicated here had copies of the treatise. Rouse and Rouse, *Registrum Anglie de Libris Doctorum*, xxi-xxix.



MAP 1 Locations for records of Boethius' *De institutione musica*⁶⁴
 Labels in italics are non-monastic institutions.

⁶⁴ The geographic locations here are approximate. The institutions are numbered from the earliest to the latest copies of extant manuscripts found in Table 1.1 (above).

Combining the evidence of library catalogues and surviving sources, it is evident that at the height of the Middle Ages, Boethius' *De institutione musica* was acquired by monastic and priory libraries. It was, in short, a text available to readers within both Benedictine and Augustinian institutions. Table 1.6, , brings together evidence from library records in Table 1.5 with surviving manuscripts from Table 1.1 to show that text on music by Boethius were held, not primarily at the university, but within the monastery.

TABLE 1.6 A Summary of manuscript origin and library records

(numbers refer to Map 1)

PLACES	MONASTIC ORDER	CENTURY/YEAR
COMPLETE COPIES		
1. Canterbury, Christ Church	Benedictine	900-1200
2. Bury St Edmunds	Benedictine	1125-1150
3. Pershore	Benedictine	1100-1200
1. Canterbury, St Augustine Abbey	Benedictine	1200-1300
4. York, St Mary	Benedictine	1200-1300
5. Kenilworth Priory	Augustinian Canons	1200-1300
EXCERPT COPIES		
6. Oxford	<i>(University)</i>	1300-1400
LIBRARY RECORDS		
2. Bury St Edmunds	Benedictine	1100-1200
7. Waltham Abbey	Augustinian Canons	1150-1225
8. Whitby Abbey	Benedictine	1150-1200
9. Rochester Priory	Benedictine	1202
10. Glastonbury Abbey	Benedictine	1247/1248
4. York, St Mary	Benedictine	1372
11. Llanthony Priory (Wales)	Augustinian Canons	1355-1360
12. Peterborough Abbey	Benedictine	1350-1400
13. Guisborough Abbey	Augustinian Canons	1300-1350
14. Durham Abbey	Benedictine	1300-1350
15. Butley Priory	Augustinian Canons	1300-1350
16. Woburn Abbey	Cistercian	1300-1350
6. Osney Abbey	Augustinian	1436-1444
17. Leister Abbey	Augustinian Canons	1450-1500

The expansion of monastic libraries was widespread in medieval England reflecting the general expansion of knowledge collecting which significantly increased throughout Europe in the twelfth century. Since *De institutione musica* was the most important text of speculative music in the Middle Ages, that it is found primarily in monasteries suggests that monastic institutions were the main environments where music theory flourished. Scriptoriums such as those in Canterbury, Christ Church became model organisations replicated by other monastic institutions. Additionally, other ecclesiastic institutions were collecting books. One such institution, where catalogues and manuscripts have survived more intact than others because this library was one of King Henry VIII's first port of call for his own book collection (now the Royal and King's Collection held at the British Library), is Rochester Cathedral Priory, whose library, having created its own scriptorium in the late twelfth century, had, by the year 1202, doubled its holdings.⁶⁵ In the catalogue dated from this year, there is an increase in an acquisition of non-Biblical texts.⁶⁶ The addition of Isidore of Seville's *Etymologies* being one example, most significant, for the purpose of understanding the general expansion of encyclopaedic knowledge, is a drastic increase in the acquisition of scholastic texts at the end of the twelve century which is thought to have increased into the thirteenth: as it has already been shown in Table 1.5 above, with the music text were included volumes of other quadrivial subjects including arithmetic, rhetoric, dialectic, orthography and classic authors such as Boethius, Virgil, Ovid, Macrobius and Horace.⁶⁷

Such increased interest in the classics has led some scholars to suggest a renaissance movement among intellectual circles. The 'Twelfth-century Renaissance,' as historians have

⁶⁵ Mary P. Richards, 'Texts and Their Traditions in the Medieval Library of Rochester Cathedral Priory', *Transactions of the American Philosophical Society*, New Series, vol. 78 (1988), i-xii+1-29, at 13.

⁶⁶ *Ibid.*, 16.

⁶⁷ *Ibid.*, 17. The books recorded in the Rochester Priory catalogue from 1202 can be found in *op. cit.*, 23-42.

labelled this movement of knowledge collecting, has invited heated debates ever since the concept was introduced to scholarly circles in 1927; the most important question is whether or not a renaissance actually happened, but more significantly, what the definition of a renaissance.⁶⁸ This movement, however, has remained largely undiscussed within musicological literature partially because manuscript sources containing music does not correlate with the time covered by historians. However, when applying the term 'renaissance' to identify the increase of music theory literature, this term becomes useful since it can help to explain the significant increase in manuscripts available within monastic institutions. For lack of a better term and because it reflects what the library records above I will adopt the term 'renaissance' here to describe this substantial increase of classic texts.

One of the greatest accomplishments of the English 'renaissance' in the twelfth century was, as has been seen above, the increase of literary material added to monastic libraries.⁶⁹ Unlike continental libraries, English libraries had relatively few books in their possession at the end of the eleventh century. The creation of new books, however, was not a result of schools or educational institutions, which, until the foundation of scholastic colleges in the thirteenth century lagged behind many other scholastic circles in Europe.⁷⁰ They were instead almost exclusively copied and produced within religious communities. It was instead mainly through the efforts of Benedictine institutions that literary materials for library collections was increased. This 'renaissance' of knowledge can be seen to have affected the transmission of music treatises, as the tables above

⁶⁸ One of the first scholarly attempts that posited that a twelfth-century renaissance could be legitimate was Charles Homer Haskins' *The Renaissance of the Twelfth Century* (Cambridge, 1927). Later contributions to the topic have aroused fierce debates among scholars such as Christopher Brooke, *The Twelfth Century Renaissance* (London, 1969) and Richard William Southern, *Medieval Humanism and Other Studies* (Oxford, 1970).

⁶⁹ Great as this accomplishment was, Rodney M. Thompson has pointed out that this surge of book production has remained little studied.

⁷⁰ Rodney M. Thompson, 'England and the Twelfth-century Renaissance', *Past & Present* (1983), 3-21, at 12.

indicate. Map 1 above reveals that the 'renaissance' was widespread, that intellectual circles could in theory be developed in virtually any region of the country.

This expansion of manuscripts in the twelfth century occurred years in advance of the expansion of Oxford college libraries. Even by the mid-thirteenth century, when colleges were more officially being founded, libraries that owned books in Oxford were few and it is not until the dawn of the fourteenth century that records begin to show a significant increase book collecting took place. Of the many donations which were made, the donation of books by William Reed, bishop of Chichester, which began in 1374 was perhaps the most influential to the colleges at Oxford, substantially increasing the number of books at Merton, New, Exeter, Balliol, Oriel, Queen's and University Colleges.⁷¹ Because of this, N.R. Ker designates the formation of college libraries into two periods: pre-Reed, dating from the 1250s until 1375 (which can be divided further into early times to 1325 and 1325-1375) and post-Reed, after 1375. Here, it is the pre-Reed phase of book acquisition, especially Balliol (founded, c.1263), Merton (1264) and Oriel (1326) college records, which is of interest.⁷²

Table 1.7, below, indicates the number of books owned by each college by the last quarter of the fourteenth century. Within 100 years of its foundation, Balliol college only amassed 150 books. The information available from Merton College is substantially greater than what can be found in the other colleges in the fourteenth century and merits further discussion (see below). Oriel College accumulated books at a slightly quicker pace, though not as considerable as Merton College, with nearly 100 books on the shelves within 50 years of its foundation. Significantly, there

⁷¹ Ker, *Books, Collectors and Libraries*, 303-304, 311.

⁷² R.M. Thomson, *A Descriptive Catalogue of the Medieval Manuscripts of Merton College, Oxford* (Woodbridge, 2009), xxiv-xxxi.

are among the three colleges listed above, a total of 750 books that could be found in their libraries by 1375 – certainly a noteworthy number.⁷³

College	Books
Balliol	over 150 or more by 1375
Merton	1. <i>libraria</i> mentioned in 1338 and 1339 2. books are chained in 1360 3. 250 volumes of theology, 36 were <i>in libraria</i> in 1360 4. 140 philosophical books distributed among 22 fellows in 1372 5. nearly 500 books were owned by 1372
Oriel	over 100 by 1375
TOTAL (by 1375)	750

Of the three colleges, Merton's library was by far the largest in the fourteenth century and the records here are the most well-documented meriting further discussion. Table 1.8a and Table 1.8b, below, gives a list of titles found in the *c.* 1360 theological catalogue and 1372 philosophical catalogue of Merton college library. Based on the 100 or so copies of medieval manuscripts traceable to Merton College that remain extant today, all of these books are thought to have been written between 1280 and 1320 and are of English provenance.⁷⁴

⁷³ Ker, *Books, Collectors and Libraries*, 303. One other college had a unique system of organising, lending and providing books to their readers. Though records of books cannot be found until 1325, by the last decade of the thirteenth century, University College had already had in mind two different types of collections: one for reference purposes and one for loan. According to Ker, this two-fold system of library holdings was perhaps modelled after the library system already in place at Sorbonne (founded in 1257). For more detail on the library of Sorbonne and its function see: Mary A. Rouse and Richard H. Rouse, 'The Early Library of the Sorbonne,' *Scriptorium* 21 (1967), 42-71, 227-251.

⁷⁴ Ker, *Books, Collectors and Libraries*, 307.

The texts within the theological catalogue do not include anything especially uncommon or unusual. Commentaries on the Bible, works of saints, and the writings of Anselm, Bede, Bernard and Jerome are works that are to be expected within a useful and functional library at the time.⁷⁵ Table 1.8a lists the names of theological works while Table 1.8b give the list of philosophical texts (along with respective number of copies) found in the inventory from 1375.

TABLE 1.8a List of Books Held at Merton College before 1375 (Theology) ⁷⁶	
Books	Copies
THEOLOGICAL CATALOGUE (c. 1360)	
<i>historie scolastice</i>	9
<i>historie Ecclesiastice</i>	2
<i>historie Libri</i>	2
<i>Cronice</i>	3
<i>Postille</i>	28
<i>Textus bibli glosari</i>	42
<i>Sentencie Petri lumbardi</i>	15
<i>'Communis' thomas super Libros sentenciarum</i>	14
<i>'subtilis' Johannes scotus super eosdem 'doctor'</i>	5
<i>doctores alii super eosdem</i>	22
<i>Tractatus et summe doctorum</i>	59
<i>Libri beati gregorii pape</i>	12
<i>Libri Anselmi</i>	7
<i>Libri Jeronimi</i>	3
<i>Libri Ambrosii</i>	1
<i>Libri Bernardi</i>	4
<i>libri Johannis Crisostomi</i>	1
<i>Libri hugonis de sancto victore</i>	4
<i>Libri Ricardi de sancto victore</i>	1
<i>Liber Rabani</i>	1
<i>Libri boicii</i>	2
<i>Libri dionisii</i>	2
<i>Libri bartholomei</i>	2
<i>Libri senece</i>	2
TOTAL	250

⁷⁵ The two books noted in the list by Boethius are *De natura dei* and *De Consolatione*.

⁷⁶ Powicke, *The Medieval Books of Merton College*, 52-60. For a more recent and up-dated catalogue see Thomson, *A Descriptive Catalogue of Merton College*.

TABLE 1.8b List of Books Held at Merton College before 1375 (Philosophy)

Books	Copies
PHILOSOPHICAL CATALOGUE (1372)	
<i>Libri philosophie de aula de Merton</i>	38
<i>Libri mathematicales</i>	13
<i>Lib<ri> gramaticales</i>	4
FROM INDIVIDUAL COLLECTIONS	
<i>Libri philosophie ex legato magistri Bricii de Scharstede</i>	8
<i>Libri ex legato M. Willelmi de Bosco</i>	5
<i>Ex legato magistri Iohannis de Sandwyco</i>	4
<i>Libri philosophie ex legato magistri Stephani de Grauesend, quodam episcopi Londoniensis</i>	10
<i>Ex legato magistri Rogerii de Crosebij</i>	1
<i>Libri philosophie ex legato M. Rogerii Lintet (?)</i>	3
TOTAL	85

What is noticeable here, especially for the purpose of this chapter, is no mention or indication that Boethius' *De institutione musica* or *De institutione arithmetica* formed a part of this library. Instead, the texts on mathematics here include the writings of Ptolemy, Plato, Euclid and Archimedes among other works on planetary motion.

The other two libraries highlighted above each hold a manuscript containing the music treatise discussed within this chapter. Though no books in Balliol can be identified to be donations by William Reed (unlike the largely identifiable donations he made to New and Merton colleges), the earliest traces for making an inventory of books surviving from Balliol College dates from around 1385, the year in which Reed died.⁷⁷ A reconstruction of an inventory which must have at one time existed can be made by tracing book numbers entered in each manuscript and has been

⁷⁷ R.A.B. Mynors, *Catalogue of the Manuscripts of Balliol College Oxford* (Oxford, 1963), xiv-xvi.

reproduced in Table 1.9, below. Due to missing extant sources this list is incomplete. Yet the number of manuscripts is estimated to have equalled nearly 150 volumes (as shown above in Table 1.7).⁷⁸

The library at Oriel cannot be reconstructed with extant manuscripts in the way that Balliol's can. Rather, its original contents from the fourteenth century can only be deciphered through an inventory which survives from 1375.⁷⁹ Oriel College in the fourteenth century was a small college, and as can be seen in Table 1.10 below, it held mostly books on theology (more than half of the books in the inventory are on this or related topics).

Titles	Balliol MS #
ARTS	
Euclid	257
Boethius, <i>De institutione musica</i>	317
PHILOSOPHY	
<i>Textus Logice</i> [none identified]	
<i>Expositores Logice</i>	
Aegidius Romanus	119
<i>Textus Philosophie</i>	
Aristotle	232A, 232B, 250
<i>Commentatores</i>	
Eustratius	116
Averros	112, 114, 106, 244
<i>Expositores Philosophie</i>	
Aquinas	278
Albertus Magnus	99
Aquinas	311
Adam Bucfeld	241
Burley	91
Petrus de Alvernia	108
Aegidius de Columna	118

⁷⁸ Mynors, *Catalogue of Balliol College*, xvi.

⁷⁹ *A Catalogue of the Library of Oriel College in the year 1375 A.D.* (Oxford, 1865), 61-62.

⁸⁰ R.A.B. Mynors, *Catalogue of the Manuscripts of Balliol College Oxford* (Oxford, 1963), xv-xvi.

THEOLOGY	
<i>Libri Theologie</i>	
Miscellanea	277
Seneca, <i>Moralia</i>	129
Scotus, <i>Ordinatio</i> i, iv	302, 303
Ockham	299
H. de Gandavo	212
W. de Nottingham	33
Aquinas, <i>Secunda secunde</i>	43
Scotus	208
Aquinas, <i>Prima secunde</i>	42
Magister HHistoriaum	221
Ricardus de Mediavilla	198
Aquinas <i>in Sententias</i>	54
Aquinas, <i>Quaestiones</i>	47
Bertrandus de turre	179
In Hieronymi epistulas	80

TABLE 1.10 Inventory of Oriel College Library c. 1375⁸¹

Topics	Copies
<i>In primis de grammatica</i>	3
<i>De Logica</i>	4
<i>De Philosophia</i>	10
<i>De Jure Civili</i>	5
<i>[De Jure] Canonico</i>	4
<i>[De Musica]</i> ⁸²	1
<i>De Rethorica</i>	1
<i>De Arsmetica</i>	1
<i>De Geometria</i>	1
<i>De Astronomia</i>	5
<i>De Theologia</i>	63
TOTAL	98

⁸¹ *A Catalogue of Oriel College*, 59-70.

⁸² Trivet super Boecium de Consolacione per Cobildyk precio di. marc. secundo folio *Ytali*.

Among the books recorded here, one is labelled *De musica*, presumably Boethius' *De institutione musica*. The single holdings of Boethius' *musica* at both Balliol and Oriel colleges in the late fourteenth century strongly resemble the monastic library holdings from the twelfth and thirteenth centuries. At Oriel, the observation by Alan Cobban cited at the opening of this chapter – that English libraries show more interest in astronomical texts than music or arithmetic – is especially evident. At Balliol, multiple copies of the commentaries on Averros remain extant today. What is especially noticeable with all three libraries is the significant amount of theological texts which central to their holdings.

No matter how intriguing, however, library catalogues and the existence of manuscripts alone cannot imply that monks read music theory in any of the above locations.⁸³ It is important to keep in mind that these can only give an impression of what was available in medieval England. Surviving manuscripts themselves should offer more indication for whether or not these books were ever consulted but even here it is difficult to tell. Three examples follow: Numerous glosses, carefully added by a thirteenth-century hand reveals that *GB-Ob Ashmole 1524* (Bower #68) was read and studied carefully.⁸⁴ Contrarily, *GB-Ob Seld. supra 25* (Bower #71) containing both *De institutione arithmetica* and *De institutione musica*, shows a heavy readership in the first while the latter contains so few glosses or soiling making it difficult to suggest that it was ever read. The time that glosses were included can be identified by careful palaeography, such as the case in *GB-Occ 118* (Bower #74) where a differentiation of glosses can be made between the later hand, presumed

⁸³ N. R. Ker, *Medieval Libraries of Great Britain*, second edition (London, 1964), vii.

⁸⁴ For a close discussion of the glosses in this MS see: Rico, 'Music in the Arts Faculty of Paris' (Oxford, 2005), 81.

to be John Dunstable's, and an early French protogothic bookhand from the thirteenth or fourteenth century.⁸⁵

It must, however, be remembered that glosses are not the only indication that a manuscript was carefully read or studied. What the library records and existing manuscripts do offer is that when a consultation of Boethius' *De institutione musica* was necessary in the late thirteenth and early fourteenth centuries, the first protocol was most likely monastic libraries.

The importance of monastic involvement in the transmission of Boethius' treatise is most noticeable in the information presented in the tables above. Yet, it has been only relatively recently that an interest in monasticism in England has returned to the forefront of scholarship. That monastic institutions did not become the intellectual centres in the way that the twelfth-century elementary schools in Oxford did does not disregard fact that they were still, in the beginning of the fourteenth century, centres of intellectual activities.⁸⁶ On the contrary, the tradition of educating, already established in monasteries and cathedral schools in the century before, make for a compelling argument that, at least in England, these places continued to foster an environment of teaching and learning music.⁸⁷

Modern perception of monastic institutions

There is much to be said about the way through which these manuscripts were preserved to reach us today which is beyond the scope of present interest. However, it is not possible to conclude this chapter without briefly mentioning why the common perception for the placement of speculative music would have been prominent in the early university colleges. The perception

⁸⁵ Rodney M. Thompson, *A Descriptive Catalogue of the Medieval Manuscripts of Corpus Christi College Oxford* (Oxford, 2011), 54-55.

⁸⁶ Swanson, *The Twelfth-century Renaissance*, 22-23.

⁸⁷ Italy, for example, was more likely less focused on ecclesiastically centred education. *Ibid.*, 24.

of monasticism in late medieval England has been tainted by a largely protestant outlook favoured for centuries. The consequences of this perspective has left a negative impression on monasticism in this country at the time. The image retained from seventeenth and eighteenth-century depictions of the Romanticised monk, who was portrayed to be saintly and holy by Catholics advocating their own past, or cruel, greedy and pompous by those who wished to advocate a purified image of the Reformed church.⁸⁸ What has sometimes been forgotten in the shadow of alternative agendas is that these monastic institutions were some of the wealthiest and most established institutions in England. Their influence on society within and without their walls would have surely held significant impact. To formulate a hypothesis that these institutions were central to the dissemination of music theory in medieval England, then, should be a natural observation.

One way in which previous historians dismissed monasteries was likely places where intellectual debates could be held was based on a perception of disorderliness. James Clark has recently argued the contrary, that there is no reason to doubt the capability of intellectual rigour within monastic institutions. Monks would have been required to do some level of study to maintain their position within their institution. The required learning would have included the study of liturgy. Clark suggests that since music and its performance would have been a natural part of the monastic observance, the study of it would have been a part of a monks training; some who joined the order would have already had training before entering but there is a high probability that many did not have any previous training, requiring a certain level of basic training that could later be supplemented with more rigorous information.⁸⁹ The education of monks through the

⁸⁸ Martin Heale, *Monasticism in Late Medieval England c. 1300-1535* (Manchester, 2009), 2.

⁸⁹ James G. Clark, 'Monastic Education in Late Medieval England', *The Church and Learning in Later Medieval Society: Essays in Honour of R.B. Dobson*, ed. Caroline M. Barron and Jenny Stratford (Lincolnshire, 2002), 36.

reading of texts was likely an orderly event: ‘Given the number of texts involved,’ Clark writes, ‘it seems likely that their reading followed a prescribed order of priority.’⁹⁰ This would require discipline and structure equivalent to a curriculum that likely was later adopted by the colleges. For their music education, which would have naturally formed a part of a liturgical training, it is likely that short compendiums were written and used directly to teach students while the more substantial writings, perhaps Boethius’ *De institutione musica* or Walter Odington’s *De speculatione musicae*, were consulted by instructors or especially keen students who mastered the basic principles.

Given what has been shown above in library records from both monastic institutions and early college library inventories, Clark’s observation helps to build a hypothesis that the transmission of musical knowledge in England was more confined, allowing the possibility that an intellectual expansion through a systematised manner did not always require the confines of university learning. From what has transpired above, it is likely that it was not until the colleges were firmly established in the late fourteenth and early fifteenth centuries that universities became more interested in the instruction of music as a part of their academic curriculum.

This chapter opened with the broad overview of the scholastic placement of music with the university as a central locus. The generalisation which necessarily results in this approach excludes smaller intellectuals that make up the grand narrative. By focusing on regional and subject specific data available to us today, it is obvious that there is a need to further investigate what culminates into the larger picture, namely, the individuals who made the crowd. These individuals

⁹⁰ *Ibid.*

would have varied from region to region, monastery to monastery and author to author. What this thesis aims to show is how a small group of music theorists in England interacted amongst themselves. As it will become more evident in the pages to follow, there is good reason to focus exclusively on English authors since their writings indicate clearly that they read and quoted from other theorist in England.

Though little is known of the biography of Walter Odington—the most important English theorist around 1300—it has been believed that he came from the small village of Oddington. Partially owing to his expansive texts which cite Cassiodorus, Isidore and Boethius, it is thought that he was educated within the colleges in Oxford. The time that Walter was active is precisely the same as when great changes were being made, both with the establishment of colleges at Oxford and within the monastic orders of England. The question addressed in Chapter 2 is whether at this early date Walter would have been involved in learning or teaching speculative music within a college or within monastic walls. According to what this chapter has revealed, it is possible that much of his knowledge was gained at Evesham Abbey where he was monk of music. Thus the following chapter raises doubts about this received biography, and the importance of universities in the creation of music theory, by looking at all known manuscripts he is reputed to have written. From the evidence, it will be concluded that two different men have been conflated under the name Walter Odington. Most significantly, a separation of the two further diminishes the importance of the universities and reinforces the importance of monasteries for medieval English music theory.

THE TALE OF TWO WALTERS

SOMETIMES, ANONYMITY IS AUSPICIOUS. The omission of personal identification brings with it permission to suppose a variety of situations that an authored text does not. The mystery that an unnamed individual brings with him or her in turn becomes a liberation, lending the opportunity to freely consider a range of possible biographical information without hesitation. And yet, with anonymity, prominence is often lost. Because a historical narrative is made of individuals, when a name is missing somehow the story becomes less invigorating. For this reason, anonymous texts and musical sources are set aside. For it is a name that offers us the opportunity to identify, relate to, and sympathise with the struggles or rejoice in the triumphs of another human being.

Most famously anonymous, at least for the historical period discussed in this present study, is the author affectionately known as Anonymous IV. Although it is through his treatise that we

can name some of the earliest and greatest composers of Western polyphony, we know little about its author. Yet it is precisely because we know so little about Anonymous IV that we are given the liberty to imagine with whom he engaged and what he learned on the streets of Paris on his travels.¹

Though as medievalists we may rejoice when a name can be more or less securely attached as the author of a text, other problems rise to the surface. An affinity towards an individual develops into a desire to understand who this individual could have been. What caused the author to write what he or she did? How did it come about that we know of this author but not of another? What other achievements can be discovered through this identification? It is no longer possible to set aside the evidence without further investigation into its significance. It is up to historians of music theory to piece together what can be perceived as an unfinished story.

The protagonist who will serve as a central figure for the remainder of the present study bears a name: Walter of Evesham Abbey who is known as Walter Odington. Today, Walter Odington is known among musicologists as the author of the music treatise *De speculatione musicae*. He is known to have written the alchemical treatise, *Ycokedron*, and was associated with colleges at Oxford. Beyond this, however, knowledge of the English author remains somewhat a mystery; Jeffrey Pulver was astonished to discover that, although Walter is considered to be the first to mention thirds and sixths to be consonant in his treatise, his fame has been lost in the grand scheme

¹ Anonymous IV is the name given to a thirteenth-century treatise by Edmond de Coussemaker who edited the work as the fourth anonymous treatise within his *Scriptorum de musica medii aevi nova series a Gerbertina altera*. It has been edited and translated more recently by Luther Dittmer in 1959, Fritz Reckow in 1967, and Jeremy Yudkin in 1985. It is considered one of the most important texts for understanding a context for the *Ars antiqua*. Recent scholarly literature has focused on providing a contextual history for the treatise itself, though a recent lively discussion initiated by David Catalunya on the Facebook group *Ars antiqua*, reminded scholars that more work is still to be done when considering the significance of anonymous authors: Nancy Van Deusen, *Theology and Music at the Early University: the case of Robert Grosseteste and Anonymous IV* (New York, 1995); John Haines, 'Anonymous IV as an Informant on the Craft of Music Writing,' *The Journal of Musicology*, vol. 23 (2006), 375-425.

of music history.² This chapter reinvestigates all of the sources from which a narrative about the author of this treatise can be constructed. In doing so, it will attempt to answer some of the basic questions that are at the heart of this study: Who were the authors of English music treatises? With whom did theorists mingle? Why did they write new texts on speculative music? If the questions above can be answered, they would offer answers to the main inquiry here; for whom were music treatises written?

Historiography

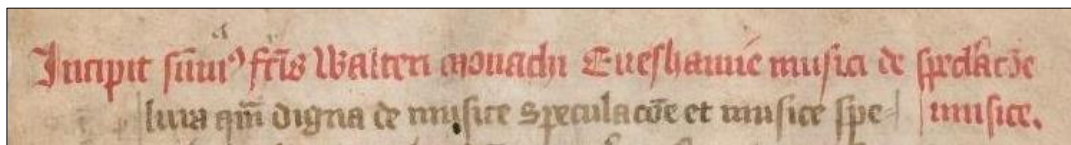
Unfortunately, historiographical accounts have contributed to a mixed narrative for the biography of Walter Odington. Prior to the modern edition by Frederick Hammond, Edmond de Cousse-maker (1805-1876) made an edition of *De speculatione musicæ* based on the manuscript Cambridge, Corpus Christi 410 (hereafter, **GB-Ccc 410**).³ If Cousse-maker knew that other manuscripts which contained excerpts from *De speculatione musicæ* existed he made no mention of it in his edition. More to the point, Cousse-maker was not interested in the philology of manuscripts but only in the text, since he had set out to create an edition of the treatise for his collection.⁴ Though not entirely flawless – including an occasional missing line within the text – the completed edition was included in his series *Scriptorum de musica* among other medieval music theory

² ‘The sanctioning of the third, major and minor, as a consonant interval and the acceptance of the common chord as something pleasing to the ear, are landmarks as important in the history of harmony, as Beethoven understood that science, as are the Ten Commandments in the history ethics. This being axiomatic, it is certainly astonishing that the name of Walter de Odington is not honoured in this country above all others, for he conferred a distinction upon England that is great only as it is understood and appreciated.’ Jeffrey Pulver, ‘Walter Odington: The Consonance of the Third, and the Common Chord’, *The Musical Times*, vol. 69, no. 1030 (1928), 1086-1089 at 1086.

³ Walter Odington, ‘De speculatione musicæ,’ *Scriptorum de musica mediæ aevi nova series a Gerbertina altera*, ed. Edmond de Cousse-maker, 4 vols (Paris, 1864; Hildesheim, 1963, reprint), I:182-250.

⁴ Though providing editions for a great number of treatises, Cousse-maker did not consult the eighteenth-century manuscript **GB-Lbl Add. 4909**, which copied the earlier manuscript, **GB-Lbl CT B9** before its destruction in the fire of 1731. See Appendix II for a transcription of this source.

treatises.⁵ In the published edition, Coussemaker curiously gave the name ‘Walter Odington’ rather than ‘Walter of Evesham’ as the author of the music treatise. Yet, no such name can be found within the Cambridge manuscript (Example 2.1, below).



*Incipit summus fratris **Walteri Monachi Eveshamie** musici de speculatione musica*

EXAMPLE 2.1 Incipit from *GB-Ccc 410*

Initially, Coussemaker’s attribution is puzzling, yet his decision was based on an entry by Charles Burney in his *A General History of Music* (1776). Since this work was still an authoritative source for music history (and, one might add, especially of English music), it is easy to suppose

⁵ Coussemaker skips a portion of the treatise in two places (the missing portion is shown in brackets [] with the missing text inserted in italics below):

1) Two lines are missing in chapter 1, Part I

Scriptorum de musica medii aevi nova series a Gerbertina altera (Hildesheim, 1963) I:183.

De utilitate ars metrice et ejus musice introductione. Rubrica.

Quoniam de musica praesens est pertractatio et ipsa quidem est de numero relato ad sonum, prius de ars metrica arbitror exponendum que est de numero per se sine qua quicquid inclitum nequit pertractari. Ars metrica autem nominis interpretatione est scientia de numero. Est autem numerus principale in animo conditoris exemplare, ut ait Nichomachus. Cum ergo exemplatum respondeat exemplari, manifestum est quod omnes creature facte sunt secundum numeralem proportionem. Et patet quoniam quatuor elementa, septem orbes planetarum proportionaliter intrinsecus certis distinctis numeris conditor ipse consolidavit. Aiunt enim astrologi primo celestem ex diapente diatessaroneque constare que unum faciunt diapason, hoc est in numeris ex sesquialtera et sesquitercia [*que duplam faciunt habitudinem ut patet posterius. Huiusmodi certa sunt interstitia. Ait etiam Plato animam mundi musica continentia*] esse conjunctam, et sic numero metiendum.

2) A sentence is missing in chapter 7, Part II

In quibus numeris constet semitonium majus.

Quum autem 193 (should be 192) tres tonos non procedit, ducantur hi numeri octies juxta priorem disciplinam et producto tunc octies 216 (should be 243), [*addatur iterum 243, et tertius tonus mox nascetur. Octies enim 192 faciunt 1,536. Octies etiam 216*] 1,727 (should be 1,728) faciunt, octies 243 faciunt 1,844 (should be 1,944); quibus si addatur octava pars, scilicet 243, fient 2,178 (should be 2,187); hoc est tonus. Rursus 256 per octonarium crescant, fientque 2,044 (should be 2,048).

that Coussemaker referred to Burney's entry on the theorist for any contextual information of the manuscript which he was working from.

In Burney's *General History*, the record for Walter Odington reveals significant information about the author of *De speculatione musica*. Burney indicated that Walter Odington was a music theorist in addition to being a scientist, mathematician and astronomer.⁶ He further claimed an awareness of the musical treatise only through the manuscript held at Cambridge University, but noted that earlier biographies by John Pits, John Bale, Thomas Tanner and Louis Moréri indicated that other works may have been written by the same author.⁷ Throughout the main text which discusses some of the seminal features of the treatise, Burney interchangeably refers to the author as Walter of Evesham and Walter Odington, indicating that the two were synonymous.

In the same manner, John Hawkins provided his entry for the English theorist as, 'Gualterius Odintonus, otherwise Walter of Evesham.'⁸ Contrary to Burney, Hawkins' *General History* does not indicate that the author of the music treatise wrote works in other disciplines. Rather, he simply states that the author was 'a writer of great skill in the science of music, was a Benedictine monk, [and] he flourished in the reign of our Henry III about the year 1240.'⁹

The manuscript source through which Hawkins was aware of *De speculatione musica* was different from Burney's. Though Hawkins was aware of the manuscript through a record by

⁶ Charles Burney, *A General History of Music: From the Earliest Ages to the Present Period*, ed. Frank Mercer, vol. I (New York, 1957, reprint), 515-519.

⁷ It is noteworthy that Burney was known to be sometimes careless in his readings of manuscripts, and in light of the numerous sources represented within his *History*, it is not surprising that this would be so. Luminita Aluas has already mentioned in her dissertation examining John of Tewkesbury's *Quatuor principalia* that Burney suggests the name Thomas as an alternative first name which was a misreading of the text. Aluas, 'The Quatuor Principalia Musica', 6.

⁸ John Hawkins, *A General History of the Science and Practice of Music*, Vol. 1, ed. Othmar Wessely (Graz, 1969 reprint), 184.

⁹ *Ibid.*

Thomas Tanner, he was not closely examined *GB-Ccc* 410, but rather was only acquainted with another manuscript, London, British Library, Cotton MS Tiberius B. IX (hereafter, *GB-Lbl* CT B9) and its copy now London, British Library, Additional MS 4909 (hereafter, *GB-Lbl* Add. 4909).¹⁰ The catalogue entry in the British Library states that the original manuscript contained 272 leaves with tracts on a number of different subjects, of which tracts 3, 4, and 5 were on music.¹¹ A transcription of the musical sections of the Cotton manuscript was presented to Johann Pepusch, and is today catalogued as *GB-Lbl* Add. 4909.¹² Having worked with the Cotton manuscript, Hawkins presented his doubt that the text found in the Cotton manuscript is genuinely by the same author as that which was held in Cambridge:

The Cotton Library, Tiberius, B. IX. tract 3, is a treatise of the notes or musical characters, and their different properties, in which the long, the large, the breve, the semibreve, and the minim, are particularly characterised; at the end of this treatise, we have these words, ‘Haec Odyngtonus,’ plainly intimating that the writer, whoever he was, looked upon Gualterus Odyngtonus as the author of it [...] ¹³

Making a comparison with the entry by Tanner with the text found in *GB-Lbl* CT B9, Hawkins concluded that the portion found in the latter was not from *De speculatione musicae*, and hence a misattribution. The confusion documented by Hawkins can be found within the manuscript itself, for contrary to being a complete work of *De speculatione musicae*, the contents found in the Tiberius manuscript as now preserved in *GB-Lbl* Add 4909 directly quote four chapters from the sixth and final part of the treatise (11, 3, 6 & 7, respectively).¹⁴ Furthermore, the attribution ‘Odyngtonus’ does not come at the end of the four chapters listed, but rather after the first copied (chapter 11),

¹⁰ *Ibid.*, 184, 239.

¹¹ British Library Manuscripts Catalogue www.bl.uk/catalogues/manuscripts [last accessed 14 November 2011].

¹² On the fire of 1731 see, Burney, *A General History*, 543.

¹³ Hawkins, *A General History*, 184.

¹⁴ *GB-Lbl* Add. 4909, ff.105r-106r.

providing no further indication that the remaining three chapters come from the same treatise.¹⁵

Thus Hawkin's account is considerably shorter and reveals little further information.

The documentation of influential persons in England was of a great concern for many early English historians. Yet, in nearly all records made in historical accounts from the 16th to 18th centuries, is the name Walter of Evesham, not Walter Odington. Moreover, Walter is noted to have been a great musician but nothing else. John Bale, John Pits, William Dugdale and Thomas Fuller all base their entries on a statement made by John Leland, who lavished praise to the diligent scholar, Walter of Evesham.¹⁶

Drawing together the sixteenth– through eighteenth-century sources that provide potential names, institutions and geographical locations for Walter, various facts concerning the authorship of *De speculatione musicæ* remain inconclusive. Table 2.1 below shows the titles given to the author along with the sources from which attributions were made. As is evident in the table, it is not until the middle of the seventeenth century that Walter's name is changed from the Latin rendition, *Gualterus*, to the vernacular equivalent, Walter. However, the split of records which occurs between the seventeenth and eighteenth centuries is striking. The division indicates that rather than relying on the Cambridge manuscript – from which all except Hawkins made their comments – Charles Burney's reference from 1776 was the authoritative source from which *De speculatione musicæ* came to be attributed to Walter Odington.

¹⁵ Within *GB-LblAdd. 4909*, the attribution is included at the end of the first included chapter as 'haec Odingtonus'. It is possible that this attribution could have been inserted later in the margins in the Cotton manuscript.

¹⁶ Reginald Lane Poole and Mary Bateson eds, *John Bale's Index of British and Other Writers* (Oxford, 1902), 283-284; John Pits, *Relationum historicarum de rebus Anglicis* (Meisenheim, 1969), 312; William Dugdale, *Monasticon anglicanum*, trans. John Stevens, vol. 1 (London, 1722, 23), 205; Thomas Fuller, *Anglorum Speculum, or the worthies of England in Church and State* (London, 1684), 874; John Leland, *Commentari de Scriptoribus Britannicis* (Oxford, 1709), 271-272.

TABLE 2.1 Author of *De speculatione musicæ*

SOURCE	DATE	ATTRIBUTION
John Leland, <i>Commentari de scriptoribus Britannicis</i>	16th cent.	Gualterus de Evesham
John Bale, <i>Scriptorum Illustrium maioris Brytannie</i>	1557	Gualterus de Evesham
John Pits, <i>Relationum historiarum de rebus Anglici</i>	1619	Gualtero Eveshamensi
William Dugdale, <i>Monasticon Anglicanum</i>	1655-1673	Walter of Evesham
Thomas Fuller, <i>Anglorum Speculum</i>	1684	Walter of Evesham
John Hawkins, <i>A General History of the Science and Practice of Music</i>	1776	Gualterus Odingtonus, Walter of Evesham
Charles Burney, <i>A General History of Music</i>	1776	Walter Odington

The music theorist

Known today as Walter Odington, the music theorist is thought to have been a medieval polymath. When the most recent edition of the treatise was published in 1970, Frederick F. Hammond included a contextual assessment of the life and work of its author.¹⁷ Here, Hammond brings together all of the known sources to present possible institutional affiliation and scholastic activities associated with Walter. Described as being a shadowy figure, Hammond, like others before him believed that Walter was from the small town of Oddington.¹⁸ It has been suggested that he could have been active in his Benedictine institution as early as 1298 and, while there, held a great interest in many quadrivial subjects, indicating that his intellect reached far beyond those which were musical to include astronomy, mathematics and geometry.¹⁹ Hammond has suggested that if the scientific treatise *Ars completa ad rubeum* was written by Walter,²⁰ it might have been possible that he was in Paris.²¹ The culmination of all sources and descriptions of the theorist makes

¹⁷ Walter Odington, *Summa de speculatione musicæ*, ed. Frederick F. Hammond, CSM 14 ([Rome], 1970), 21-27.

¹⁸ *Ibid.*, 21.

¹⁹ *Ibid.*, 21.

²⁰ The manuscript only indicates that this treatise was written by a 'Master Walter'.

²¹ According to Lynn Thorndike, the author of this treatise indicates that he spent time in Paris. Walter Odington, *Summa*, 22.

the biography of Walter complicated and varied. Yet, as central locations from which such complexity might be possible, Hammond suggested that ‘The scenes of his activity [were] the cloister and the university.’²²

Walter’s biography has remained a point of confusion and contention for some time now, especially when taking the dates and places associated with each record into consideration. One of the problems for providing a date for Walter’s activities is that unfortunately none of the main manuscripts provide any dates. For this reason, it was necessary to investigate other manuscript sources to gather information and provide a context. Numerous dates from equally numerous sources have been suggested as possible years within which the musician flourished; probable dates of activities range from 1217 at the earliest until 1346 at the latest. Though neither sources are associated with musical activities, two dates within two different sources have been suggested as more likely to be associated with the Walter in question here than others: 1298 and 1316. The date 1298 is from a chapter meeting for the Benedictine monasteries while 1316 is a date attributed by William of Worcester in 1463 to a scientific treatise now held in Cambridge.²³ Yet, when returning to the original sources where dates have been taken, questions of validity for the biographical dates presented above immediately spring to mind. To trace the reasons for specific dates attributed to our theorist, it is necessary to once more scrutinise all sources which have been suggested as possible.

On 21-23 September 1298, a general chapter for the Benedictine monasteries from the province of Canterbury was held in Northampton, gathering monks, priors and abbots from

²² *Ibid.*, 22-23.

²³ See Frederick Hammond and Peter M. Lefferts, ‘Odington, Walter’, *Grove Music Online* (2001) [Last accessed 08 Mar. 2014]

surrounding monastic institutions.²⁴ The meeting, which was concerned with academic affairs at Gloucester College in Oxford (initially founded in 1283), concluded that this college should be open to all Benedictine monks and looked after by the prior of the Benedictine abbey in Eynsham, some ten miles north of Oxford.²⁵ Were this not possible, abbots from Malmesbury, Tewkesbury, Pershore and a monk, Walter of Evesham Abbey, were to select an equally suitable candidate for the task.²⁶

While intellectual discourse had long been a part of liturgical and monastic life, it was not until around the 1280s that monks began to have close and active contact with the academic colleges in Oxford.²⁷ To provide an institutional context within which the theorist gained his education, it has been suggested that Walter of Evesham may have held close connections to Oxford. This hypothesis becomes especially convincing when taking note of the external circumstances from slightly later records when engagement of scholarly activities at the newly founded universities had significantly increased. In the constitutions from 1336, Pope Benedict XII decreed that all monasteries were to send at least one out of every twenty monks to a university to gain their education:²⁸

Since therefore Pope Benedict XII of happy memory formerly decreed, to no little honour of our religion, that from individual monasteries of our order out of every number of twenty monks, one suitable for acquiring the fruit of greater learning should be sent to a university, and established very severe penalties against those not sending them, and as we have learned from the report of many, there are still certain prelates

²⁴ William Abel Pantin, *Documents Illustrating the Activities of the General and Provincial Chapters of the English Black Monks 1215-1540*, vol. 1 (London, 1931). Monastic institutions mentioned within the document include: Eynsham, Malmesbury, Tewkesbury, Pershore and Evesham.

²⁵ Pantin, *Documents*, 137-138; Walter Odington, *Summa*, 26.

²⁶ Sin autem reverendi patres abbates de Malmesburi, de Teucusburi et de Perschore ac frater Walterus monachus de Evesham vice totius communitatis nostre eisdem potestate concessa una cum consilio dicti domini Iohannis plene disponant et eligant de quo monasterio debiant huiusmodi prior et conventus [ass]umi. Pantin, *Documents*, 137.

²⁷ Martin Heale, *Monasticism in Late medieval England, c. 1300-1535* (Manchester, 2009), 30-33.

²⁸ *Ibid.*

of our religion whom neither papal statue nor the fear of these penalties soften, so that they would send of their monks to a university according to the appointed number.²⁹

Failure to comply with orders would have incurred financial penalties in addition to strict discipline from the supreme pontiff: every year missed by a person required to be in university, would cost an institution the sum of 10 pounds.³⁰ To ensure that all Benedictine institutions adhered to the new regulations, a close account on their records were made.

As the abbey was a fairly large and important institution at the time, it is highly possible that a number of different monks were sent from the abbey for their education. It is not surprising then, that the names are associated with Evesham abbey from the early student records in Oxford colleges; a Walter of Evesham is recorded to have been a master at Merton College (*Magister Walter de Evesham*) dated 1345-1346 and several records of a Walter Evesham donating books in Queen's College from 1359-1361 provide evidence that Walter did have strong ties with Oxford colleges in the fourteenth century.³¹

But are the records above attributable to the Walter who wrote *De speculatione musicæ*? If Walter the musician was the same as the person mentioned in the meeting at Northampton in 1298, and had gained his knowledge to write *De speculatione musicæ* at Oxford in the middle of the fourteenth century as has been suggested by Hammond, his 're-affiliation' with Evesham

²⁹ Cum igitur felicitis memorie Benedictus papa xij^{us} ad nostre monasteriis ordinis nostri de quodlibet vicenario numero monachorum mittantur ad studium unus aptus pro fructu maioris scientie acquirende, ac contra non mittentes penas statuerit valde graves; sintque adhuc, sicut ex multorum relatu didicimus, quidam nostre religionis prelati, quos nec papale statutum nec ipsarum penarum metus emollit, ut de suis monachis mittant ad studium iuxta numerum prætaxatum; nos eorum rebellionem quatenus in nobis est confundere cupientes, statuimus ut prelati nostri ordinis quicumque qui virtute constitutionis papalis predictæ aliquem vel aliquos de suis monachis ad studium mittere sunt astricti, nec tamen hoc faciunt, ut tenentur, ultra penas per summum pontificem contra tales statutas, nomine eciam pene solvant annis singulis pro quodlibet quem virtute statute precati mittere tenerentur ad studium et non mittunt, dominis præsentibus qui pro tempore fuerint, decem libras in usus communes ordinis convertendas.

Pantin, *Documents*, 77.

translation by Martin Heale in *Monasticism in Late medieval England, c. 1300-1535* (Manchester, 2009), 148.

³⁰ *Ibid.*, 147-149.

³¹ Oxford, Merton College Records, 3666, 3676, 3678, 4090; Oxford, Queen's College Roll, Long Roll, 76, 90, 97.

Abbey, found in the incipit within his music treatise, is highly unusual. Having pointed out this rare circumstance, Hammond dismissed the possibility that the Walters here could be the musician in question, since ‘Odington is consistently called “monk of Evesham” in the manuscripts of his works, [and] a fellow of Merton was obliged to forfeit his place if he entered a religious order.’³² In other ways, the chronological gap of 48-63 years between the Northampton record and the college rolls provide a further reason to confirm that the three records here do not all refer to the same Walter, especially if the average life expectancy in the fourteenth century is thought to have been at most forty or fifty years.³³

TABLE 2.2 Attributions, References, and Quotes for *De speculatione musicae*³⁴

SOURCE	ATTRIBUTION
Cambridge, Corpus Christi 410	<i>fratris Walteri monache Eveshamiae musici</i>
London, British Library, Additional 56486a	[no attribution]
London, British Library, Additional 4909 [London, British Library, Cotton Tiberius IX]	<i>Odyngtonus</i> [damaged]
Oxford, All Souls College, MS 90; Oxford, Bodleian Library, Bodley 77	<i>Walterum monachum et priorem de Evesham in Musica</i>
Oxford, Bodleian Library, Bodley 842	<i>Walterus Odington</i>

So far, the sources investigated have either mentioned or had connections to Evesham Abbey. Six manuscript sources containing or referring to the music treatise *De speculatione musicae* as can be seen in Table 2.2 above.

³² Walter Odington, *Summa*, 25.

³³ Heale, *Monasticism*, 21; Barbara Harvey, *Living and Dying in England 1100-1540: The Monastic Experience* (Oxford, 1993), 112-145.

³⁴ All of the manuscript sources will be compared in Chapter 4. For the present purpose, it is sufficient to note that when Willelmus was writing his *Breviarium regulare musicae* in the second half of the fourteenth century, he refers to the author of *De speculatione musicae* as Walter Odington only. Willelmus, *Breviarium regulare musicae*, ed. Gilbert Reaney, in *Ms. Oxford, Bodley 842 etc.* ([Rome], 1966), 15-31.

Of the records, only four have specific and direct reference to the author. In *GB-Ccc 410*, the only source which contains the entire treatise, Walter is ‘*fratris Walteri monachi Eveshamiae musici* [Brother Walter, monk of music at Evesham].’ In manuscripts Oxford, All Souls College MS 90 (*GB-Oas 90*) and Bodley MS 77 (*GB-Ob 77*) which contain the *Commentum Oxoniense in musicam Boethii*, Walter is known to have had connections to Evesham as a monk and prior, *Walterum monachum et priorem de Evesham in Musica*.³⁵ In the late fourteenth-century manuscript Oxford, Bodleian Library, Bodley 842 (*GB-Ob 842*), several references are made to *De speculatione musicae* with an attribution of authorship as Walter Odington.³⁶ Furthermore, London, British Library, Additional 4909 (*GB-Lbl Add. 4909*) which is an eighteenth-century copy of the now damaged London, British Library, Cotton Tiberius Manuscript B IX (*GB-Lbl CT B9*) refers to Odington as the author of several chapters contained in the manuscript.³⁷ A fragment which contains the opening three chapters of the treatise, London, British Library, 56486a, (*GB-Lbl Add. 56486a*), purchased by the British Library in 1971, unfortunately does not include any authorship.³⁸ Upon consultation of manuscript sources which contain the music treatise, Frederick Hammond concluded that, ‘There seems little doubt that “*frater Walterus monachus de Evesham*” is Odington, since this [Walter of Evesham] is the form in which his name commonly appears.’³⁹

However, one anomaly makes a further investigation necessary. If Walter authored all of the above, one aspect among the early sources of his music treatise remains a mystery: never is

³⁵ Anonymous, *Commentum in musicam Boethii: Eine Quelle zur Musiktheorie an der spätmittelalterlichen Universität*, ed. Matthias Hochadel (München, 2002), 16.

³⁶ *GB-Ob Bodley 842*, ff. 67r, 68r, 68v, 69r, 70v, 73r.

³⁷ *GB-Lbl Add. 4909*, 105r. The portion which was copied is now illegible in the Cotton manuscript making it difficult to assess whether this reference to Walter was made by an earlier hand in the original manuscript or if it was an attribution made in the eighteenth century. In *GB-Lbl Add. 4909*, a penciled in note from the margin reads: ‘Walter of Evesham, Tanner 568.’

³⁸ I am grateful to Nicolas Bell of the British Library who brought this source to my attention. The source was not available for Frederick Hammond when he made his edition, published in 1970.

³⁹ Walter Odington, *Summa*, 26.

name the ‘Walter Odington’ mentioned in association with Evesham Abbey. Until this point, the connection and reference to the village of Oddington has been eliminated. From what has transpired, it has been established that the connection between the records in Oxford and the person who wrote the treatise are not the same person. With this possible association eliminated, turning to sources which do refer to Walter Odington will provide another perspective that can offer contextual background.

The alchemist

Though Charles Burney admitted that he never saw works in addition to the music treatise, he was the first to explicitly note that Walter was, in addition to being a music theorist, the author of scientific writings. Six extant manuscripts containing the alchemical treatise *Ycokedron* are listed in Table 2.3 below. The treatise was transmitted in scientific manuscripts alongside works of other scientists including the works of Albertus Magnus and Roger Bacon.⁴⁰ As its Greek name suggests, it is comprised of twenty chapters and primarily discuss the treatment of heat, cold, humidity and aridity which are represented through fire, earth, air and water.⁴¹ Its content has been characterised as being a ‘more systematic and restrained’ work and is one which did not necessarily introduce something new: the goal of the author was never to produce gold or other precious metals, but to bring together alchemical properties in a simple and concise manner.⁴²

⁴⁰ *GB-Ob* Digby 119, ff. 142r-147v; *GB-Lbl* Sloane 513, ff. 154r-154v; *GB-Lbl* Add. 15549, ff. 4r-24r; *GB-Ctc* 112, ff. 178r-183v.

⁴¹ Donald Skabelund & Phillip Thomas, ‘Walter of Odington’s Mathematical Treatment of the Primary Qualities’, *Isis*, LX, vol. 3 (1969), 331-350, at 331 and 336.

⁴² Skabelund and Thomas, ‘Walter of Odington’s Mathematical Treatment’, 331.

TABLE 2.3 Author of *Ycocedron* and other Scientific Records

SOURCE		ATTRIBUTION
Cambridge, Trinity College, MS 1122 (O.2.18)	<i>Ycocedron</i>	<i>Otington Monasthus de Enshemi</i>
Cambridge University Library, MS Ii.i.1.3	<i>Ycocedron</i>	<i>Odington</i>
London, British Library, Add. MS 15549	<i>Ycocedron</i>	[no attribution]
Oxford, Bodleian Library, Digby MS 119	<i>Ycocedron</i>	<i>frater Walteri de Otyngten de Enesham</i>
Oxford, Oriel College, 23	<i>Ycocedron</i>	<i>Frater Walterus de Odyngton de monachus Enesham</i>
Oxford, Bodleian Library, Laud. MS 674	Record	Walterum Enesham, 1316
Oxford, Merton College Records	Record	Walter de Enesham, 1331

Unfortunately, little is known of the practical use or transmission of any of the manuscripts that survive. What is known about the biographical accounts of Walter Odington the scientist has been presented by science historian Lynn Thorndike.⁴³ In his *A History of Magic and Experimental Science*, the first record of Walter Odington's engagement in scientific activities dates from a calendar made in the year 1301⁴⁴ and believed that Walter was associated with Oxford, mentioned in an account dating from around 1330.⁴⁵

What is clear from Thorndike's entry on Walter Odington is an assumption that the scientist and musician are the same person. Furthermore, the information from which this assumption is made relies heavily on the musicological sources already examined. However, as it has been revealed, the sources have their own problematic associations. Additionally, the only modern transcription of the alchemical treatise is made with only one source, London, British Library, Add. MS 15549 (*GB-Lbl Add. 15549*). This manuscript is a collection of alchemical

⁴³ Lynn Thorndike, *A History of Magic and Experimental Science*, vol. 3 (New York, 1934), 127.

⁴⁴ *GB-Cu Ii. I.13*, ff. 157r-177r.

⁴⁵ Thorndike bases this attribution to a comment found in the entry for Walter Odington in the *Database of National Biography*.

treatises transcribed in 1474 by David Ragor of Wales.⁴⁶ Included among other notable works is *Speculum alchemiae* by Roger Bacon. The *Ycocedron* is transmitted between ff. 4r-22v, but, does not give any attribution to an author. What is not pointed out in this transcription is that this source does not have an attribution to an author.

The other manuscripts which contain the *Ycocedron* do give an indication that the treatise was considered noteworthy to the manuscript compilers as it can be found among other important alchemical texts. Cambridge, Trinity College MS 1122 (O.2.18) (*GB-Ctc 1122*) is an elaborately decorated manuscript containing a number of different scientific treatises. Although not present in every treatise found within this manuscript, a significant amount of scribal activity beyond the main text can be found within its bindings, providing evidence that the manuscript must have been used by a number of different readers. Certain words are highlighted by underlining and many index fingers, little faces and even musical notation (longs used as a pun to ‘note’ a particular section) point out important concepts show an interaction by the readers with the content. The *Ycocedron* is placed near the end (ff. 178r-183v) and is one of the two sources which include the complete treatise.

The inclusion of the *Ycocedron* in Oxford, Bodleian Library, Digby MS 119 (*GB-Ob 191*) stands out among the other sources not only because of its intricate and clearly copied layout, but because of its elaborate decorations. Like the Trinity College manuscript, the *Ycocedron* is found at the end of the manuscript (ff. 142r-147v) and includes a substantial amount of alchemical works by notable authors including several works by Roger Bacon.⁴⁷ Several readers seem to have engaged with the manuscript as their comments can be found along the margins in a variety of hands and

⁴⁶ British Library Online Catalogue Descriptions
<http://www.bl.uk/catalogues/manuscripts> [last accessed 24 August 2013].

⁴⁷ Roger Bacon, *Breve Breviconum de Jons Dei; Tractatus trium verberum; Speculum Secretorum*.

ink. Though not presented in its entirety, the treatise exhibits some unique features including diagrams of alchemical equipment and charts (ff. 143v; 144v; 146v).

The fifteenth-century manuscript London, British Library, MS Sloane 513 (*GB-Lbl* 513) was compiled and written by Richard Dove, monk of Buckfastleigh Abbey. Its content is mostly of mathematical treatises, ranging from geometry, algorisms and arithmetic, including astronomy, fortune telling and alchemical treatises by Albertus Magnus,⁴⁸ Roger Bacon⁴⁹ and two chapters of Walter Odington's *Ycokedron*.

The purpose for investigating the manuscript sources of the *Ycokedron* was to find if any further biographical information could be discovered. As Table 2.2 above indicates, several sources include the name of the author. When the author for the scientific works given is clearly noted as Walter Odington, or simply as Odington. Two sources for the *Ycokedron* (*GB-Ctc* 1122 & *GB-Ob* 119) include an institutional affiliation for the alchemist: 'Otington Monasthus de Eneshemi'⁵⁰ and 'ego frater Walterus de Otyntonus monachus de Enesham'⁵¹ Both attributions resemble what is found in *GB-Ccc* 410 (fratris Walteri monache Eveshamiae musici) and in *GB-Oas* 90 and *GB-Ob* 77 (Walterum monachum et priorem de Evesham in Musica). A close observation, however, reveals that the name of the institution is different. Here it is important to note that the institution for the author of the *Ycokedron* within the manuscripts is noted as Eynsham Abbey, located just outside of Oxford, and not Evesham Abbey as is noted in both *GB-Ccc* 410, *GB-Oas* 90 or *GB-Ob* 77.⁵²

⁴⁸ Albertus Magnus, *Semita recta; Speculum luminum*.

⁴⁹ Roger Bacon, *Speculum secretorum Alchimiae; Liber duodecim aquarum*.

⁵⁰ *GB-Ctc* 1122, f. 183v.

⁵¹ *GB-Ob* Digby119, f. 147v.

⁵² Eynsham Abbey was completely abolished during the dissolution but it's existence is still celebrated by the town today through the historical society (www.eynsham.org).

Oxford, Digby MS 119 (*GB-Ob* 119) offers a further confirmation that the scientist, Walter Odington was a monk of Eynsham Abbey. Within the opening binding of the manuscript is a list of contents.⁵³ Under the 17th heading, the title and author of the *Ycocedron* is noted: ‘Tractatus fratris Walteri de Odyngten monachi de Enshem qui dicit ycocedron.’⁵⁴

Other sources which record scientific activities of Walter Odington state that this person was from Eynsham rather than from Evesham as has been previously proposed. A reference made by William of Worcester in 1463 notes that astronomical observations were attended by Odington in 1316 at Oxford.⁵⁵ Though being a later comment, it is claimed today as a biographical reference for the author of *De speculatione musica*. However, it is clear within this manuscript that the record indicates that Walter was from Eynsham: ‘Declaratio motus octave spere secundum majistri Walterum Enesham fecit confidasocis Oxon circa anno 1316.’⁵⁶

According to the records presented above, a clarification of persons associated with the two treatises is necessary. Taking the earliest sources from the fourteenth and fifteenth centuries, it is inevitable to conclude that two different scholars were named Walter. Moreover, both scholars may have been writing treatises within their own expertise and in association with their own institutions: one scholar from Eynsham Abbey in Oxfordshire who wrote a scientific treatise and one from Evesham Abbey in Worcestershire who wrote a treatise on speculative music. Furthermore, assuming that the attribution to Odington in both accounts are correct, both authors may have been from the village of Odington.

⁵³ Tables of contents or indices became more commonly adopted features from the thirteenth-century onwards and indicates a new trend towards seeing the manuscript as a complete book rather than separate sections. See Bernhard Bischoff, *Latin Palaeography: Antiquity and the Middle Ages* (Cambridge, 1990), 225.

⁵⁴ *GB-Ob* Digby 119, *Contenta*.

⁵⁵ *GB-Ob* Laud 674, f. 75r.

⁵⁶ *Ibid.*

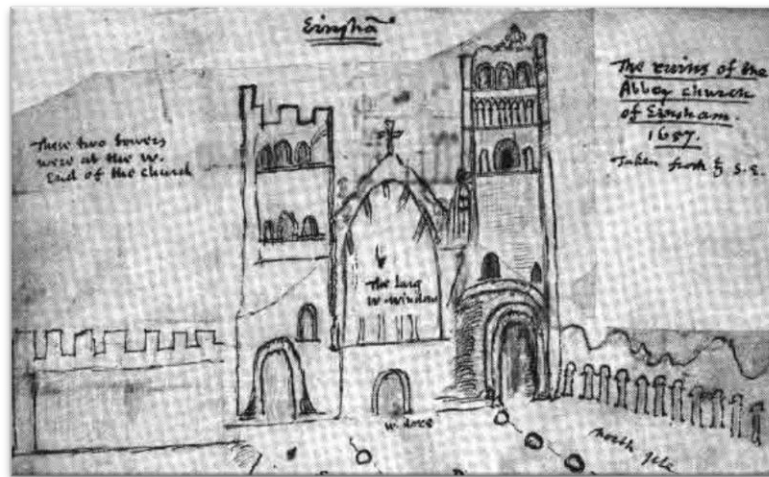


FIGURE 2.1 Sketch of Eynsham Abbey by Anthony Wood, 1657

Some hints that the two authors had been confused by other scholars have already been made but remained little noticed. In the *Memorials of Merton College* from 1885, George Brodrick made a comment to the Merton College records that a Walter of Eynsham, clearly noted as ‘Walter de Enesham’ within the roll, must in fact be Walter of Evesham and so corrected this entry in his publication.⁵⁷ In 1927, Jeffrey Pulver stated that Walter of Evesham Abbey should not to be confused with his double, Walter of Eynsham, ‘for many authorities confuse the two.’⁵⁸ Furthermore, the modern editor for Charles Burney’s *A General Music*, Frank Mercer, mentions in a footnote that Burney was in fact confusing the scientist from Eynsham with the musician from Evesham when he commented that the musician wrote scientific works.⁵⁹

John Bale’s sixteenth-century *Scriptorum Illustrium maioris Britanniae* provides some more evidence which sheds light onto why a confusion of identity between two authors has occurred. In the index of this work, Bale provides two separate entries which relate to the two people in question

⁵⁷ ‘Eynsham. Probably the same as Walter de Evesham, placed by Anthony Wood under 1331.’ George C. Brodrick, *Memorials of Merton College with Biographical Notices of the Wardens and Fellows* (Oxford, 1885), 205.

⁵⁸ Jeffrey Pulver, *A Biographical Dictionary of Old English Music* (London, 1927), 347.

⁵⁹ Burney, *A General History*, 515.

here: one for a mathematician, Walter Odington and one for the musician, Walter of Evesham.⁶⁰ According to Bale Walter Odington was a philosopher and mathematician who wrote a work on planetary motion and an almanac.⁶¹ The entry for Walter the musician, on the other hand, only includes the title for a treatise on music, *De speculatione musica*.⁶² That he considered the two authors to be different people is evident for two reasons: 1) based on John Leland's records, Bale declares that he is unaware of any further works which could have been written by Walter the music theorist; 2) two separate dates, though too early, are given as probable for the two authors, 1240 for Walter of Evesham the musician, 1280 for Walter Odington the scientist. Although clearly providing two separate entries for two Walters, John Bales' entry gives Evesham as the monastic institution for both.

Evesham Abbey is located nearly 47 miles northwest of Oxford and, though being one of England's greatest abbeys in its height during the Middle Ages, little of the abbey remains today. Nevertheless, at its political and ecclesiastical peak in the thirteenth century, an association with the Benedictine institution would have been important and significant. Built and endowed in 701 by St. Egwin, by 1086, records from the abbey indicate that the institution sustained no fewer than 140 people who served the ecclesiastical community and maintained a livelihood within its confines: sixty-seven monks lived along with five nuns, three clerks, and some sixty-five servants who maintained its grounds.⁶³ The servants harvested the food, cooked meals in the kitchen,

⁶⁰ John Bale, *Scriptorum Illustrum maioris Britanniae. Sudovolgii* (1557), 'Walter Odington the scientist,' 43; 'Walter of Evesham the music theorist,' 283-284.

⁶¹ *Ibid.*, 43.

⁶² *Ibid.*, 283-284.

⁶³ William Dugdale, *Monasticon Anglicanum: A History of the Abbies and other Monasteries* (London, 1819), 4. Further history of the monastery can be found in William Dunn Macray ed., *Abbatiae de Evesham, ad annum 1418* (Cambridge, 2012).

brewed beer, defended the abbey and even accompanied monks on their travels to Rome, France and Denmark.⁶⁴

Evesham Abbey is an abbey from early accounts of activities survive that will tell a historical narrative. Of particular interest among its long list of distinguished abbots is Thomas of Marlborough (abbot from 1229 till his death in 1236), who made extensive comments on events within the monastic institution through his *Vitae et gesta patronorum et abbatum Eveshamiae*.⁶⁵ Not only do they speak of what took place within Evesham Abbey, his writings provide detailed accounts show us that he made significant improvements to its premises through the construction of new buildings and an expansion of the library, by finishing the writings of a good number of books began by those who came before him.⁶⁶ What is more, from his extensive commentaries on foreign places, it is possible to glean that Thomas was well travelled: he was a student with Richard Poor, who was bishop of Salisbury and Durham, in Paris and went to Bologna for business in 1205.⁶⁷ Later in the same century, political instability, already felt elsewhere in England, reached the town of Evesham where the Battle of Evesham, fought during a morning thunderstorm on 4 August 1265, took the life of Simon de Montfort, one of the most influential politicians of the day.⁶⁸ The abbey, like many others in the country, was powerful and one of the largest and wealthiest institutions in the West with strong connections locally and abroad.

⁶⁴ *Ibid.*

⁶⁵ Jane Sayers and Leslie Watkiss, eds & trans., *History of the Abbey of Evesham, Thomas of Marlborough* (Oxford, 2003).

⁶⁶ Dugdale, *Monasticon Anglicanum*, 5-6. Knowledge of the library at Evesham Abbey from the early thirteenth-century comes from Thomas de Marlborough's *Vitae et gesta patronorum et abbatum Eveshamiae* written sometime around 1216. For further details see: R. Sharpe, et. al. eds, *English Benedictine Libraries, the shorter catalogues* ed. (London, 1996), 130-151.

⁶⁷ R. Sharpe, et al. eds, *English Benedictine Libraries, the shorter catalogues*, 134.

⁶⁸ J.R. Maddicott, *Simon de Montfort* (Cambridge, 1994), 340-345.

To summarise: according to the incipit found in the opening folio of *GB-Ccc 410*, the author of *De speculatione musicae* was a monk at this institution. Based on the manuscript evidence above, the musician and scientist were two different Walters, both Benedictine monks who were associated to their respective institutions; one at Evesham Abbey the other at the abbey in Eynsham near Oxford. The confusion of the two place names occurred through a simple misreading of the letter ‘v’ and ‘n’ within the original sources.⁶⁹ A distinction of the two different authors, as had been made by Bale, Pulver, and Mercer, could be made by a careful examination of existing manuscripts and records and by accepting the possibility that two persons of the same name were active in similar times. For the latter, several different Walters from Evesham were active in different circles becoming an indicative that the two Walters were two different individuals.

What this historiographical study has been able to confirm what Bale, Pulver and Mercer have already indicated: for the purpose of identifying the author of *De speculatione musicae*, it has been suggested that at least three different Walters active in the thirteenth and fourteenth centuries within a number of Benedictine institutions: Walter of Evesham, the music theorist; Walter of Odington of Eynsham abbey, the scientist; and Walter of Evesham, the bursar and *magister* at Merton College. Another Walter donated books at Queen’s College around 1359 and 1361, but it could be that this was the same as the Walter of Evesham from Merton College.⁷⁰ Over several

⁶⁹ According to Alan Hardy and Roslyn Smith, variants which the town name has undergone from the tenth to the eighteenth centuries has ranged an astonishing 47 different spellings including ‘Enesham’, ‘Eynsham’, ‘Enysham’, and ‘Enisham’. A tea towel with all of the variants was made for the millennial celebrations of the Abbey of Eynsham. Alan Hardy and Roslyn Smith, *Eynsham, a Village and its Abbey* (Oxford, 2002). See also the tea towel that gives all of the different possible spellings of the village and can be purchased from the historical society: www.eynsham.org/teatowel.html (accessed 23 November 2011).

⁷⁰ When I was examining student records through the college rolls at both Merton and Queen’s Colleges, it became evident that the name Walter was a rather common name in the fourteenth century. Numerous entries of Walters from a number of different locations within England can be found in the accounts.

centuries of historical documentation, the different Walters had been joined together as one polymath from medieval England by historiographers.

In many ways it has been the place name Oddington which has bound together the two individuals. A small town, located nearly 50 miles North West of Oxford has little to offer historically and contributes even less information for a solid narrative. Today, the church which has its roots in the eleventh century, has been restored to reveal an important medieval painting of the Last Judgment.⁷¹ Though the painting takes the subject commonly depicted in the thirteenth century, the crudeness of the painting has led Reitlinger to suggest that this wall was painted during the fourteenth century.⁷² Though the village was visited by King Henry III in the thirteenth century, the significance of this village, its place among other parish churches in England and the people who came from here remains difficult to assess, partially because of evidence lost, partially because of neglect and abandonment in subsequent centuries.

Another Oddington in Oxfordshire, near Islip (a mere eight miles North East of central Oxford), must be considered as possible locations from which either author could have originated. Until the Reformation, the manor at Oddington was first in the possession of Hugh de Grantmesnil and eventually to the Poure family.⁷³ During the fourteenth century, the manor was ruled by Walter Poure (not likely to be either of the Walters mentioned so far in this chapter) from 1307 until his son, Thomas, gained position of lord in 1337.⁷⁴ Early on the manor was never rich and was mostly agricultural while its church, which will stand today, though being restored, has

⁷¹ Gerald Reitlinger, 'The Wall-Paintings at Oddington', *The Burlington Magazine for Connoisseurs*, vol. 49 (1926), 105-107, 111.

⁷² *Ibid.*, 111.

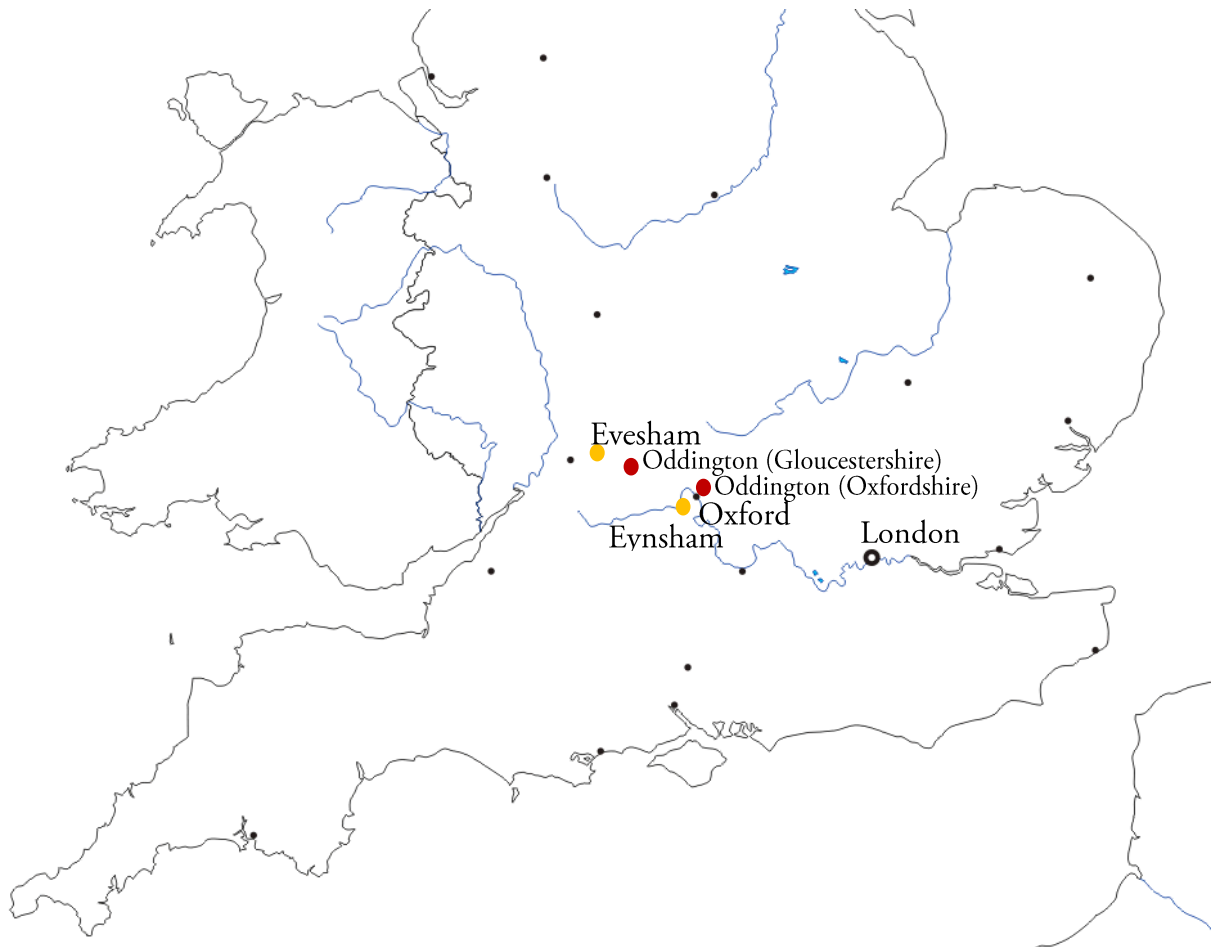
⁷³ 'Parishes: Oddington,' *A History of the Country of Oxford: Volume 6*, 276-285 [<http://www.british-history.ac.uk/report.aspx?compid=63747>, last accessed 27 February 2014].

⁷⁴ *Ibid.*

its foundation in the late thirteenth and early fourteenth century. Taxation records from 1377 show that 72 adults made payments revealing that some level of economic stability was achieved during this century.⁷⁵

It is unclear whether the village of Oddington in Gloucestershire or Oddington in Oxfordshire was where either the scientist or musician could have come from. Both modern spellings are with two 'd's which cannot be found in either author's records. It would be convenient to propose that Walter, the scientist from Eynsham, was from Oddington in Oxfordshire and Walter the musician at Evesham Abbey was from the Oddington in Gloucestershire but this will prove even more difficult to justify (see Map 2.1 below).

⁷⁵ *Ibid.*



MAP 2 Evesham, Eynsham, Oddington (Gloucestershire & Oxfordshire), London, and Oxford

Possible dates and clarified attributions

Throughout this investigation, the date for Walter of Evesham's *De speculatione musicæ* has not been discussed. It has already been doubted that the early thirteenth-century dates could be possible. This was based on the fact that had Walter lived in the first half of the thirteenth century, the content found among the treatise would have been far too advanced for the known practice of that time.⁷⁶ Hawkins refers to Thomas Morley's account of the history of notation found in his *A*

⁷⁶ Hawkins, *A General History*, 184.

Plaine and Easie Introduction to Practical Musicke (1597), which stated that Philippe de Vitry was responsible for the invention of the minim.

Since one of the currently proposed dates of 1316 has now been clarified as being the work of Walter from Eynsham Abbey, the only date from the sources discussed above which could possibly refer to the author of the treatise is the 1298 chapter record from Northampton. Table 2.4 presents the suggestions of attributions for all of the different Walters considered thus far.

NAME	DATES	WORK
Walter of Evesham Abbey (Walter Odington)	<i>fl.</i> 1298	<i>De speculatione musicae</i>
Walter Odington of Eynsham	<i>fl.</i> 1316-1331	<i>Ycocedron</i> , astronomical observations
Master Walter of Evesham	<i>fl.</i> 1345-6	Merton College
Walter Evesham	1359-61	Queen's College (donations of books) ⁷⁷

This chapter set out to investigate the biographical information for Walter of Evesham Abbey. It has resulted in an identification of an author who, rather than be music theorist and scientist, was only a music theorist. The clarification of authorship offers us a different perception of the position which music theory within an English intellectual milieu. If Walter of Evesham abbey was primarily a musician, then the position and importance of his writings change from being an all-inclusive quadrivial author to a subject specific contributor. This picture is in

⁷⁷ It is possible that 'Master Walter of Evesham at Merton College' was the same as Walter Evesham who donated books at Queen's college. The donation of books to colleges was normal for this time in Oxford since 'Every fellow was expected to leave his books to the college at death or if he entered a monastic order. A fellow who had left the college to take a living or service elsewhere was expected to leave at death either his books or a *iusta compensation* [money payment].' F.M. Powicke, *The Medieval Books of Merton College* (Oxford, 1931), 3. This donation of books was also common in college libraries at Paris where, for example, at Sorbonne, monks would leave their worldly good for the benefit of younger and not as fortunate clerks. Mary A. Rouse and Richard H. Rouse, *Authentic Witnesses: Approaches to Medieval Texts and Manuscripts* (Notre Dame, IN, 1991), 346.

alignment with other English theorists who wrote treatises after Walter's in the fourteenth century. No other English theorist is known to have written any work on a subject other than music. For them, it was important to convey musical principles and understand the new rules of notation. Little evidence can be found either in the *Ycoedron* or in *De speculatione musicae* to show that the content was written by the same author. The separation between scientist and musician now suggests that in England, specialised authors transmitted musical knowledge in newly authored treatises. It will be shown in subsequent chapters that the readers of theoretical texts were monks who read and studied both continental and English authors to understand the speculative nature of music and categorise the newly developed system of measured notation.

Manuscript evidence has revealed that Walter Odington is now considered to be two different persons. The music theorist was from Evesham Abbey, an influential, powerful, and wealthy Benedictine institution in the West of England. Though some evidence of Walters from Evesham had been found to have connections with Oxford in the fourteenth century, it is impossible to tell if the same was the music theorist himself. The records that are found at Oxford are likely to be a third person.⁷⁸ Though an intellectual exchange between scholars at Oxford and monks in Evesham was possible, in any of the sources that have been examined presently, no evidence that this took place can be found. Thus, that such a scenario could have happened must be left only to our imagination.

The one record from 1298 could be the same monk who wrote the music treatise, but even here the record fails to indicate whether or not this monk was a monk of music, as is clearly indicated within *GB-Ccc 410*. That the Walter who wrote the scientific treatise was from Eynsham

⁷⁸ The number of times that the name Walter is mentioned in college rolls is a good indication that the name was common in England in the fourteenth century.

abbey, a smaller and less influential abbey just outside of Oxford, allows for a confirmation that this was another author from a different Benedictine institution and wrote on a different topic. Very little of Eynsham abbey remains today as it was completely dissolved in the sixteenth century. The new distinction of persons presented above casts a different perspective on the place, person, and possible musical connections between monastic institutions and Oxford colleges. If the evidence found in sources investigated above are taken at face value, the author of *De speculatione musica* was more closely associated with his own monastic institution.

An investigation of primary sources has been core to the present discovery in this chapter. Chapter 3 pursues the importance of Walter's treatise to other English theorists by turning to the text of *De speculatione musica*.

AUTHORITY IN MEDIEVAL ENGLAND

NO MATTER WHAT THE CIRCUMSTANCE, important persons will always be acknowledged. For medieval theorists, the acknowledged were the *auctoritas*, the expert whose writings formed a foundation so firmly fixed, so steeped in tradition, that avoidance was simply not an option. The writings of the *auctoritas*, such as Boethius, Isidore, and Franco, were familiar to theorists in England writing in the fourteenth-century. This is known because their teachings can be found within the texts of their newly written works. It is possible, then, to identify the attributions or quotations and distinguish which texts were read and studied closely, and which may have remained on the bookshelf. Within texts, certain authors were well established and recognised in a variety of situations.

A reference to authority should matter to us too, firstly because it reveals what theorists already knew, secondly, because it is the particular use of authority that conveys what a theorist considered important to other readers, and finally because it shows us a currency of thought

which in turn reveals an intellectual context otherwise difficult to consider. What is interesting when considering authority within English music treatises is that authorities in England were not always those who were firmly canonised. Sometimes, they were the works of new authors.¹

I begin this chapter with a slight divergence by investigating how a medieval reader could have understood the inclusion of an authority, here Adelard of Bath, who is not directly related to music and could otherwise be a reference that is indifferent to us. By teasing out what this subtle reference could have implied to a medieval reader, I wish to show that a modern-day perception for the placement of authority may not necessarily align with how medieval readers interacted with information.

Who you know is important

At the end of chapter one in Part I of *De speculatione musicae*, Walter of Evesham Abbey includes a scheme of knowledge, indicating that this has been taken from Adelard of Bath (c. 1080-c.1152).² In the division found in *De speculatione musicae*, knowledge (*scientia*) is separated into wisdom (*sapientia*) and eloquence (*eloquentia*) before a further categorisation which divides

¹ Susan Fast has investigated the place of authority within three fourteenth-century music treatises through textual analysis using theories presented by the Russian literary theorist, Mikhail Bakhtin. In her article Fast takes Jerome of Moravia's *Tractatus de musica*, Jacobus de Liège's *Speculum musicae* and the English treatise, *Quatuor principalia musicae* to trace the presence of authority within works to form a literary context. Her analysis, as will be mine below, begins from the classification of music. Fast notes that it was not always necessary for authors to quote the words of authority verbatim, but that 'Medieval authors invoked the words of the *auctores* precisely in order to legitimize their arguments, and when these ring throughout a text, even in a transformed state, the text is given a certain weight.' (189). Thus she reveals how music texts contain elements of dialogism as described by Bakhtin. In what follows below, I have taken a slightly different approach: rather than apply modern literary theories to medieval texts, I have analysed fourteenth-century English texts with other medieval texts. My interest is not to identify how the texts might be explained theoretically, but rather to investigate interconnections within contemporary treatises to reveal a transmission history and intellectual milieu of thought present at the time. Susan Fast, 'Bakhtin and the Discourse of Late Medieval Music', *Plainsong and Medieval Music*, vol. 5 (1996), 175-191.

² Adelard of Bath, a philosopher renowned as the first Latin translator of Euclid's *Elements*, wrote three works in the style of a conversation with his nephew, *De eodem et diverso* (On the Same and the Different), *Questiones naturales* (Questions on Natural Science), and *De avibus tractatus* (Treatise On Birds). It is in the first that Adelard's presentation for a scheme of knowledge which Walter of Evesham abbey refers to in his *De speculatione musicae*. For an edition and translation of Adelard of Bath see: Adelard of Bath, *Conversations with his Nephew: On the Same and the Different, Questions on Natural Science, and On Birds*, ed. & trans. Charles Burnett (Cambridge, 1998).

the disciplines is made: Eloquence into grammar, dialectic and rhetoric; Wisdom into theory and practice, and so forth (Example 3.1, below).³

EXAMPLE 3.1 Walter of Evesham's scheme of knowledge

		SCIENTIA			ELOQUENTIA			
		SAPIENTIA		PRACTICA				
THEORICA						Grammatica	dialectica	Rhetorica
theologia	physica	mathematica	ethica	metaphysica	practica liberalis			
		<i>arithmetica</i>	<i>monastica</i>	<i>lanificium</i>	<i>artes liberales</i>			
		<i>Musica</i>	<i>economica</i>	<i>armatura</i>				
		<i>geometrica</i>	<i>politica</i>	<i>agricultura</i>				
		<i>astronomia</i>		<i>navigatione</i>				
				<i>venatione</i>				
				<i>medicinam</i>				
				<i>theatura</i>				

Classifications such as the above were not always rendered in a table as is the case with Walter's classification, imbedded within a text which sometimes further explained the meaning of each division. Many classifications of knowledge exist from the Middle Ages but Hugh of St. Victor's classification is one of the most well-known. Hugh's scheme of knowledge divides Philosophy into four parts: Logical Arts, Mechanical Arts, Practical Arts and Theoretical Arts. Logical Arts is divided into Grammar and Theory of Argument (further divided into necessary argument, probable argument and sophistical argument). Mechanical Arts is divided into Fabric making, Armament, Commerce, Agriculture, Hunting, Medicine and Theatrics. Practical Arts is divided into Solitary (ethics), Private (economic) and Public (politics). And finally, Theatrical

³ This portion of the scheme of knowledge was not copied out by Scribe 1 in *GB-Ccc 410* but was later added by a correction scribe (see Chapter 4 for more on the scribes who wrote the text in *GB-Ccc 410*). The correct text can be found in *GB-Lbl Add. 56486a*, f. 2 which reads: 'Eloquentia in grammaticam, dialecticam et rhetoricam. Sapientia in theoricam et practicam.' More about this fragment will be commented upon in Chapter 4 below.

Arts is divided into Theology, Mathematics (which contains Arithmetic, Music, Geometry and Astronomy) and Physics.⁴

The resulting scheme in Walter's treatise spans similar aspects of knowledge:⁵ disciplines of the mind (here found under *theorica*) are threefold and includes a theological discourse for the existence of a divine Being (*theologica*), a study of the sub lunar world (*physica*), and a classification of the measurement of objects pertaining to it (*mathematica*). Under the practical division (*practica*) are practical skills such as the making of wool and the production of food through hunting and agriculture. Moreover the establishment of defences spanning from visible enemies, through the making of weapons, to the invisible, through the combination of medicinal herbs. For those who labour to provide skilful entertainment, a rightful place has been preserved. The scheme of knowledge, then, is a reflection of human civilization, all culminating together to form different levels of necessary *scientia*.

Rather than an identical representation of the former, the scheme presented by Adelard is considerably different: while the scheme found in *De speculatione musicæ* extends beyond philosophical ideas into daily activities and the mundane, Adelard's scheme is poetic and, like Walter's scheme, adheres more-or-less only to quadrivial subjects (Example 3.2, below).

⁴ See: Jerome Taylor, *The Didascalicon of Hugh of St Victor* (New York, 1991); Claude Lafleur, *Quatre Introductions à la Philosophie au XIII^e Siècle: Textes Critiques et étude Historique* (Montréal, 1988).

⁵ Frederick Hammond already noted that the scheme presented by Walter resembles the scheme that can be found in *De triumphis ecclesiae* by the English grammarian, Johannes de Garlandia (not to be confused with the music theorist, Johannes de Garlandia, who authored *De musica plana* and *De mensurabili musica*). The two authors had been considered to be one person in William Waite's article of 1960 but has been now clarified to be two different Johannes by Pamela Whitcomb. See: William G. Waite, 'Johannes de Garlandia, Poet and Musician,' *Speculum*, vol. 35, no. 2 (1960), 179-195; Pamela Whitcomb, 'Teachers, Booksellers and Taxes: Reinvestigating the Life and Activities of Johannes de Garlandia,' *Plainsong and Medieval Music*, vol. 8 (1999), 1-13). See: Walter Odington, *Summa de speculatione musica*, ed. Frederick Hammond CSM 14 ([Rome], 1970), 37-38.

 EXAMPLE 3.2 Adelard's scheme of knowledge

SCIENTIA	
PHILOSOPHIA <i>Grammatica</i> <i>Rhetorica</i> <i>Dialectica</i> <i>Arithmetica</i> <i>Musica</i> <i>Geometrica</i> <i>Astrologica</i>	PHILOCOSMIA <i>Dives</i> <i>Potentia</i> <i>Dignitas</i> <i>Fama</i> <i>Voluptas</i>

For the modern reader the attribution to Adelard may be seen as merely a loyal acknowledgement to a former philosopher. For the medieval reader of *De speculatione musicae*, however, a more profound impact to this attribution is likely. Unlike the somewhat straightforward presentation by Walter, the dramatic unfolding in Adelard's *De eodem et diverso* is extraordinarily captivating, descriptive and engaging.

Adelard's narrative unfolds mighty forces between two goddesses Philocosmia and Philosophia and their two worlds. From the opening, the maidens who serve each goddess are revealed to be opposing in quality and virtue. On the one hand, Philocosmia's maidens are both delectable and irresistible: *Divitiae* with her abundant riches, *Potentia* with immeasurable powers, *Dignitas* and *Fama* with their respect and fame and *Voluptas* with her sensual pleasures. In stark contrast, the virtuous maidens who possess upright and worthy occupations presented by Philosophia seem to be all too sensible for the young to pursue: Grammar, Rhetoric, Dialectic, Arithmetic, Music, Geometry and Astrology.⁶

⁶ It is no secret that ascetic qualities do not instantly gratify and the story which Adelard proceeds to tell is memorable and worth repeating here: Through her lustrous maidens, Philocosmia entices the young man to follow her ways, urging him to fall for one of her passionate maidens. Such temptations are not tolerated by the virtuous Philosophia who pleads: 'Do you, shameless one, attempt to snatch from me with your poisons this man too, by disguising your deceits with names, and clothing them with fine examples?' Her intention is to set right the

The story unravelled in *De eodem et diverso* is not only instructional, but memorable. Although Walter of Evesham presents his division of knowledge in his treatise on music, a nod of acknowledgement to his predecessor before laying out his own scheme surely would have led readers to recall the earlier account of the alluring maidens. What is more, the discourse which expands the scheme of knowledge in Adelard's writings was already based on a number of authoritative authors.⁷ Had anyone been keen to study the text, they would have been reminded of the other texts as well. Walter's placement of a reference to Adelard at the end of his introductory chapter may have been strategically placed to evoke a strong sentiment for acquiring knowledge.⁸ In short, some authoritative references may have been so commonly known to English theorists and readers of treatises that it was hardly necessary to explain any further their precise meaning.

corruption that has been laid out by Philocosmia so that she might set free the youth: 'So that I may free myself and him from this misfortune, first I shall weigh up those arguments you level against me. Then will come the time to show in a few words what should be thought about those little hussies of yours whom you have praised. ['hunc ne etiam', inquit, 'inpudica, venenis tuis mihi eripere conaris, dum fallacias tuas et tegis nominibus et vestis exemplis? [...] Et ut me et illum hoc infortunio liberem, prius ea quibus in me invecata es expendam. Diende locus erid de tuis quas laudavisti meretriculis quid tenendum sit paucis docere.'] Having put forward all virtuous aspects, Philosophia triumphantly admonishes in the final lines of the saga 'But you, young man, strive with all your strength as you have begun. Embrace the teachings of these maidens whom I have defined! ['Tu vero, iuvenis, enitere pro viribus ut incepisti, harumque quas diffinivi disciplinas amplectere!']. Adelard of Bath, *Conversations with his Nephew*, ed. & trans. Charles Burnett (Cambridge, 1998), 16-17.

⁷ For an explanation of the trivium (grammar, rhetoric and dialectic), Adelard relies on the teachings from Boethius' *Consolation of Philosophy*. For arithmetic and music, Boethius' other authoritative writings, *De institutione musica* and *De institutione arithmetica*, are the source of authority. Charles Burnett has proposed that geometry, which was loosely based on traditions from Roman land-surveyors, may have been written before Adelard had come into contact with Euclid's *Elements*. Adelard of Bath, *Conversations with his Nephew*, ed. & trans. Charles Burnett (Cambridge, 1998), xix-xxi.

⁸ [P]lura quam digna de musice speculatione et musice speculatoribus perutilia brevi, ut potero, nitor explicare sermone, quadamque pluribus dubia sunt corrigendo et manifestando, que hactenus non paucis sunt ignota.

[What is more than worthy about musical science and what is most advantageous to the investigators of music I endeavour to explain in as short as possible discourse. These are dubious to many, correcting and showing, which until now remain unknown to many. It is not greed which has compelled me to take hold of the great study... But the manifold necessity as well as the progress and consideration of the ignorance.]

As can be detected from the *Proemium* above, Walter was especially keen to set right those who are ignorant of certain traditions. Walter Odington, *Summa*, 42. English translation mine.

Reaching back to the earlier years of the Middle Ages, certain ‘traditions’ formed part of the long discourse of *musica*: over the nearly one thousand years of writing and re-writing treatises, theorists remained true to certain practices handed down to them. Though their ultimate and specific goals for authoring a new treatise may have significantly varied—as a reading of any theory text will reveal—it is not difficult to find a thread of continuity among theorists who wrote treatises within the fourteenth century.

Indeed, it would be an understatement to say that earlier texts of music theory, both from Antiquity and the early Middle Ages, had significant impact on music treatises subsequently written. Charles Atkinson has gone as far as to suggest that theoretical sources of music were some of the finest examples of medieval writings which united the teachings of the Christian church with a heritage from Antiquity.⁹ Though not of equal influence, certain seminal works formed a part of an on-going tradition of authoritative citation: Augustine’s *De musica* (387-389), Macrobius’ commentary on Cicero’s *Somnium scipionis* (c.400) and Martianus Capella’s *De nuptiis Philologiae* (before 439) all held some standing of importance, especially for writers of music treatises in the twelfth and thirteenth centuries.¹⁰ Yet, it is significant to note that 4th and 5th century texts were not often used in their entirety but rather became sources from which certain ideas might be selected. As Atkinson specifically points out, none of the works exclusively transmit the ancient Greek music theory but provided a more philosophical perspective on the subject, summarising salient points most relevant to a theorist’s particular interest.¹¹

⁹ Charles Atkinson, *The Critical Nexus: Tone-System, Mode, and Notation in early Medieval Music* (Oxford, 2009), 7.

¹⁰ Atkinson, *The Critical Nexus*, 9. Other works which are included within the list summarised by Atkinson are: Vitruvius, *De architectura* (c. 27 BC); Quintilianus, *Institutio oratoria* (2nd century AD); Censorinus, *De die natali* (AD 238); Clacidius, translation and commentary on Plato’s *Timaeus* (4th century); Favonius Eulogius, commentary on Cicero’s *Somnium scipionis*; and Fulgentius, *Mitologiae* (5th-6th century AD); Boethius’s *De institutione musica* (c. 480-524 AD), Cassiodorus’ *Institutiones* (after AD 540), and Isidore of Seville’s *Etymologies* (c. 627-36 AD) are mentioned but will be discussed independently in the following of the present chapter.

¹¹ Atkinson, *The Critical Nexus*, 10.

Christian Thomas Leitmeir has pointed out the importance of authorities on moral grounds.¹² Leitmeir draws on a wide range of medieval treatises to argue that authority was not only selected for scholastic purposes but with the intention of moral correction within ecclesiastical circles. He concludes, ‘in order to prove that learners of the *ars musica* were instructed to good action, theorists had to imbue their statements with *auctoritas*, whether they borrowed their principles from approved intellectual disciplines, derived their criteria from ‘canonic’ works or vouched personally for the validity of their doctrines.’¹³ Hence the presence of authority in music treatises could be far more complex than merely justifying musical teaching through former authority.

Among the many writers of speculative music, one in particular stands out among the others as an influential authority: the writings of Boethius (c.480-524). The music treatise *De institutione musica*, though going through waves of popularity during the Middle Ages, was not only informative for subsequent theorists but changed the way in which the subject could be discussed.¹⁴ Boethius’s *De institutione musica* is divided into five separate books which, in one way or another, rely on knowledge presented in the other books. After *De institutione musica* was revived and deemed worthy of extensive study by the educational reformers of Carolingian times, the treatise became synonymous as the authoritative work for the subject of speculative music.¹⁵ Upon considering a reception of Boethius’s teachings within treatises written in fourteenth-century England, Walter’s *De speculatione musicae* offers an excellent starting point.

¹² Christian Thomas Leitmeir, ‘*Sine auctoritate nulla disciplina est perfecta: Medieval Music Theory in Search of Normative Foundations*’, *Between Creativity and Norm-Making: Tensions in the Later Middle Ages and the Early Modern Era*, eds Sigrid Müller and Cornelia Schweiger (Leiden, 2013), 31-60.

¹³ *Ibid.*, 60.

¹⁴ Atkinson, *The Critical Nexus*, 10.

¹⁵ *Ibid.*

De speculatione musicae reveals a number of different authorities (some identifiable through naming of author, others only detectable through specific concepts or teaching) who provided a foundation upon which Walter's own interpretation on a given subject was made. Aside from Boethius, who is directly mentioned once in Part II, chapter 4, eleven other names are found as authority: five are in close relation to scholastic traditions, Nicomachus, Plato, Euclid, Isidore, Adelard; four for the praise of music, Pope Gregory, St. Bernard, Avicenna and King David; and three for the teaching of musical proportions, Pythagoras, Nicomachus and Timotheus of Miletus.¹⁶

Walter generously extracts content from Boethius's *De institutione musica* and *De institutione arithmetica* to construct the first three books of his treatise though only mentions the authors name once.¹⁷ Moreover, as Hammond points out, a number of additional teachings taken from other authoritative works, freely incorporated by Walter into his own treatise.¹⁸ Though such texts can be identified through content and subject, they are mostly unidentified within the treatise itself. Unlike many of the English theorists who followed in the later decades of the fourteenth-century—who often copied directly from a previous treatise without re-working or changing its text—it is nearly impossible to find direct quotes taken from Boethius's works

¹⁶ Nichomachus, Plato, Pythagoras and Euclid were most likely to have been known to Walter only through Boethius' *De institutione musica*.

¹⁷ Though the teaching seminal texts can be identified in *De speculatione musicae*, Walter never explicitly quotes from either of Boethius' *De institutione arithmetica* or *De institutione musica*. Chapters reflecting text from *De institutione arithmetica* include: Book I, 1, 2, 3, 19, 20, 21, 22, 23, 24, 28, 29, 31, 32, 40; Book II, 43, 44, 47; Chapter reflecting text from *De institutione musica* include: Book I, 1, 3, 6, 8, 15, 20, 21, 30; Book II, 12, 18, 19, 27; Book IV, 3, 5, 12, 15, 17, 18; Book V, 7, 9, 10, 27.

¹⁸ Hammond's observations include Walter's use of notation symbols is derived from Boethius' *De institutione musica*, Book Four, Chapter 7-8 (O/T for the tone, S/T for the semitone), a misunderstanding of the Greater Perfect System as it applies to the monochord and an opposite reading of the species of consonances (Walter reads the species upwards while Boethius reads them downwards). For more on this, see: Walter Odington, *Summa*, 36-40.

within Walter of Evesham's *De institutione musica*.¹⁹ Rather, the author masterfully blends the teachings by Isidore, Cassiodorus and Boethius to provide a composite of mathematic principles which may be applied to music. However, like the deviation from Adelard's text already explored above, the use of authority in *De speculatione musicae* is varied and original.

Part I is an introduction to number, primarily based on the teachings which can be found in Boethius's *De institutione arithmetica* and *musica*. In chapter one, general parameters to arithmetical principles are given. Borrowing from the teachings of Plato, Aristotle, Isidore, Euclid, Cassiodorus and Adelard, Walter introduces the reader to the various *loci* in which number can be applied. To gain command of the subject before embarking on a more specific application of number to sound, the reader is provided with ample examples to ensure a comprehension of each concept. For example, in chapter two the reader is alerted to how numbers relate proportionally: two is a proportion of four, four the proportion of eight and so on.²⁰ When proportions are explained further in chapter three, the two-fold proportion is called *dupla*, the three-fold *tripla*, the four-fold *quadrupla*; and thus the proportions may continue infinitely.²¹ Upon reaching the end of Part I, the reader should be familiar with proportional numbers, including the three different mediums of proportions found in arithmetic, geometry and harmonics. Ultimately, the reader is led to Isidore's statement that without numbers, all things shall perish: *Tolle numerum in rebus omnibus et cuncta perentibus*.²²

¹⁹ Examples of English treatises directly quoting the works of previous authority include the author of *Quatuor principalia*, who rearranges Lambertus' *Tractatus de musica* for parts of his treatise and the *Breviarium regulae musicae* who includes extended passages of previously existing treatises including Boethius, Franco and Walter.

²⁰ Proportio est habitudo quantatum. Proportionalitas est habitudo proportionum. Ut duo ad quattuor est proportio, quattuor ad octo est proportio, quae duae faciunt proportionalitatem unam. *GB-Ccc 410*, f. 2v; Walter Odington, *Summa*, 47.

²¹ Multiplex est cum maior numerus continet minorem multotiens ut bis vel ter vel quarter vel quamtotiens. Si bis, vocatur proportio dupla si ter, tripla si quarter, quadrupla; atque hoc in infinitum. *GB-Ccc 410*, f. 3r; Walter Odington, *Summa*, 48.

²² Tolle numerum in rebus omnibus et omnia pereunt

Having sufficiently established the foundational arithmetic necessary for understanding its application to music, Part II makes an application to sound.²³ The arithmetical explanation in Part I is thorough and it is evident that Walter's primary purpose for writing *De speculatione musicae* was, as his title explicitly suggest, a speculative rather than practical discussion of music. His first point of reference is the muses. Unlike other theorists who merely state that music came from the muses, Walter elaborates on the subject. He names the nine before giving considerate detail to each of their virtuous qualities.²⁴

It is not only the muses who Walter refers to. Biblical etymological references in relation to the calming of the spirit abound in this part of his treatise. The tale of Tubal, the son of Lamoch who was the inventor of music, alongside the tale of David calming the distressed soul of Saul, are both intertwined with quotes and references from Varro, Gregory the Great, Bernardus, Avicenna and passages from Psalms.²⁵

[take from all things their number and all shall perish]

Etymologies. Isidore, III.4.

²³ Walter specifically establishes this at the end of the tenth chapter of Part I: 'Ista ergo sufficient de arithmetica ad musicæ disciplinae speculationem.' *GB-Ccc 410*, f. 6v; Odington, *Summa* ([Rome], 1970), 59.

²⁴ Novem musae dicuntur novem scientiae quibus fit homo perfectus in omni doctrina. Quod apparet in Ethimologiis †nomen nam dio adicique†, quod est fama. Dicitur hoc praeesse poetis nam nullus scientiam quærit nisi commendet, unde Persius: Scire tuum nihil est nisi te scire hoc sciat alter, et ideo Clio dicitur appellata, id est cogitatio famae quaerendae. Euterpe quasi bene delectans vocatur; Melopemene, id est faciens meditationem permanere; quarta Talia, capacitas; Polyhymnia, multam memoriam faciens; Erato, id est inveniens simile; Terpsichore, id est delectans instructionem; Urania, id est celestis; Calliope, id est optimæ vocis.

[Nine muses are a name for the nine fields of knowledge, through which man becomes perfect in every doctrine. What is obvious in the etymologies of [*nomen nam dio adicique*], which means "fame". It is said that it she presides over the poets, for nobody seeks knowledge unless it commends him, hence Persius: 'Is all your knowledge to go utterly for nothing unless other people know that you possess it'; and therefore she is called Clio that is the thought about seeking fame. Euterpe is so called as if 'giving good pleasure'; Melopemene, that is 'making he reflection last'; the fourth is called Thalia, that is 'capacity'; Polyhymnia, i.e. 'creating much memory'; Erato, that is 'finding the similar'; Terpsichore, that is 'giving delight to instruction'; Urania, 'the heavenly one; Calliope, that is 'of excellent voice.']

GB-Ccc 410, f. 6v; Walter Odington, *Summa*, 59.

²⁵ Walter Odington, *Summa*, 61.

The mathematical proportions applied to harmonic intervals, which follow in the subsequent portion of Part II, are the familiar numbers which can be found in the teachings of Boethius's *De institutione musica*.²⁶ As in Part I, where numerical principles were compounded upon basic principles, the mathematical calculations of harmonic intervals begin with the smallest, the major and minor semitone. The proportions are expanded until finally reaching the penultimate chapter where all possible intervallic proportions are named: *ditonus* or *semiditonus*; *diapente*; *diapason*; *diapason cum ditono* or *semiditono*; *diapason cum diapente*; and *bis diapason*. As a conclusion, each interval is given an abbreviated initial:

Toni^S signum est maius S.--Semitonii^s, minus s.-- Ditoni^T maius T.--Semiditoni^t minus t.--Diatessaron^q minus q.-- Diapente^Q maius Q.--Diapason⁹ ista 9, quasi ex omnibus.--Diapente^Q et diapason⁹, Q9.--Bis diapason⁹⁹, sic 99, etc. Diesis^s.²⁷

The first two Parts of *De speculatione musicae* are fundamental to an understanding of applying mathematics to music, including, as it has been shown above, an etymological exploration of the virtues for their study. As a consequence, Walter's careful presentation of principles offers the reader sufficient information to comprehend the ancient calculations.

It is within Part III that the reader finally is shown how arithmetical calculations are useful when applied to the production of sound. In chapter one are the three values of song: diatonic, chromatic and enharmonic. The first is made of three tones, 'tone, tone, semitone', the second of three semitones, 'semitone, semitone, semitone,' and the third 'ditone, diesis and diesis'.²⁸ Further along, individual pitches are given their respective letter for identification and the monochord is introduced. Covering the Greek pitch names, tetrachords and tropes, this part

²⁶ For specific chapters referred to, see fn. 17 above.

²⁷ Walter Odington, *Summa*, 76. Hammond points out that the use of this *Notae vocabulorum*, as it is referred to by Walter in the title to this chapter, can only be found in Johannes Cotto's *De musica* and Jacobus de Liège's *Speculum musicae*. Walter Odington, *Summa*, 38-39.

²⁸ *GB-Ccc 410*, f.13v; Walter Odington, *Summa*, 78-79.

brings to life that which was abstract previously through an identification of pitch names used to create harmonic proportions.

Walter's *De speculatione musicæ* includes an entire section for the explanation of poetic metre.²⁹ Part IV, titled *De inaequalitate temporum in pedibus*, is largely based on book I chapter 17 of Isidore of Seville's *Etymologies*.³⁰ Where Isidore was mostly concerned with the etymological investigation for the names given to each metre, Walter was concerned with their actual function. Though the method of transmitting the information may be slightly different, Walter makes no attempt to associate the rhythmic metres to music. Instead, this part stands alone from the others as simply a description of poetic metre.

In Isidore's *Etymologies*, a list of metrical feet is first presented in no particular order, but does identify the etymology for each definition.³¹ Though Walter adapts the definitions found in the former for his own discussion of the topic, his is presented systematically as is provided at the end of Isidore's chapter. Here, the metres are presented in a table, including the symbols which

²⁹ In an article from 1987, Margot Fassler traces the impact of metre in the development of rhythmic notation. Here Fassler identifies the importance of a thorough study for the content and presence of metre in the development of music in the twelfth and thirteenth centuries. Upon reflecting on the studies available for the treatise and pedagogical tradition of Alberic of Monte Cassino, she additionally notes that: 'It is surprising that until this time, medieval treatises "De rithmis" have been left out of most discussions of Parisian monophony and polyphony. Certainly, the treatises present problems: they do not exist, for the most part, in modern editions. Nor has any systematic attempt to locate more such treatises been made. Unfortunately, therefore, the following discussion of works is limited because so little work, especially palaeographical work, has been done on them. It is impossible, in most cases, until this work has been completed, to go beyond the general specifications of [Giovanni] Mari [i.e. the nineteenth-century collector of *rithmus* texts] regarding essential things such as dating and places of origin. And yet, it is well past the time that these works and the understanding they contain was made a part of the modern study of late twelfth- and thirteenth-century Parisian music. The treatises, vital though they are, have not been examined because they belong to the study of both poetry and of music. Thus, no specialist in either of these fields has chosen to investigate them and the particular practice they describe. But it is precisely their dual allegiance that makes them so directly relevant to the art of the late twelfth and thirteenth centuries.' Her assessment for the current state of research remains largely the same today. Margot Fassler, 'Accent, Meter, and Rhythm in Medieval Treatises "De rithmis"', *The Journal of Musicology*, vol. 5, no. 2 (Spring, 1987), 164-190. See especially, 173-174.

³⁰ Stephen A. Barney, et al. eds, *The Etymologies of Isidore of Seville* (Cambridge, 2006), 47-48.

³¹ By 'no order' here I mean that the order in which each metre is presented does not correspond with the order in which they are presented at the end of the same chapter.

indicate their length. Though such a table cannot be found in *De speculatione musicae*, that Walter worked from it to create his own definitions in this part is easy to detect.

Part V, which is titled ‘Of Simple Harmony which is Plainchant (*De armonia simplici, id est de plano cantu*)’ presents the eight modes of plainchant. Explaining that the final note is what determines the mode of chant, as the ending of the word determines its number and case,³² this book demonstrates the eight modes of chant. The examples used as authority for demonstration purposes is the tonary taken directly from the Sarum *Tonale*.³³ It is within this part that Walter finally introduces music notation.

For most modern scholarship, Part VI has been of greatest interest. Here Walter incorporates developments of measured notation and compositional techniques of organum, rounds, conductus, copula, motets and hockets.

The classification of music

Walter’s classification of music sets itself apart from other contemporary music treatises because it presents a slightly varied classification of music:

Musicæ quidem tres partes, scilicet organica, rhythmica seu metrica, et harmonica. Organica est quæ consistit in instrumentis sonoris. Et alia quidem fiunt, ut flatu sonent, ut organa et tubæ; alia vero ut pulsu sonent, ut cithara, cymbalum, psalterium. Rhythmica seu metrica est quæ requirit incursionem verborum et decernit in gestis et carminibus an pedes quibus constant apte cohæreant. Harmonica est modulatio vocum et plurimorum sonorum coaptatio et pertinet ad comoedos, tragœdos, et choros et eos qui propria voce cantant, et in his omnibus est ratio una ut patebit.³⁴

³² ‘Et quia finalibus accipiunt cantus denominationem, sicut in grammatica alteratione vocabulorum discernuntur numeri et casus, ideo de finalibus dicendum.’ *GB-Ccc 410*, f. 22v; Odington, *Summa* ([Rome], 1970), 99-100.

³³ A complete identification of the tonaries used within *De speculatione musicae* has already been made by Hammond. See: Walter Odington, *Summa de speculatione musicae*, ed. Frederick Hammond, *CSM 14* (Rome, 1970), 147-151.

³⁴ *GB-Ccc 410*, f. 7r; Odington, *Summa* ([Rome], 1970), 61.

There are three parts to music, namely *organica*, *rhythmica* or *metrica* and *harmonica*. *Organica* is the part that consists in sounding instruments; some produce the sound through blowing, such as the organ and trumpets; others through the pulse, such as the cithara, tympanum or psalterium. *Rhythmica* or *metrica* is the part of music that investigates the encounter of words and it determined in epics and songs so that they cohere aptly through the [poetic] feet, of which they consist. *Armonica* is the governance of voices [NB: pitches] and the fitting together of many sounds. It pertains to comic actors, tragic actors and choruses and to those who sing with their own voice. And all of these are governed by a single logic, as will become evident.

Among fourteenth-century theorists, and especially those who wrote treatises with a speculative perspective, Boethius was the source to which they turned when addressing the tripartite division of music. This classification, *musica mundana*, *musica humana*, and *quae in quibusdam constituta est instrumentis*, found in chapter two of Book I of *De institutione musica*, became a component frequently included within medieval treatises and was often incorporated into quadrivial classifications of knowledge. Though Boethius promised to address the three divisions accordingly it was in fact only the third division which received further elaboration in his treatise. Yet, this tripartite division finds itself within subsequent treatises and became one of the fundamental elements of speculative treatises.

Not all theorists, however, relied on Boethius's tripartite division for their definition of music. Isidore of Seville's division, *harmonica*, *rhythmica*, and *metrica* can be detected within a few treatises. Table 3.1 below shows what some major authors from the eleventh to fourteenth centuries incorporated into their divisions within their treatises or scholarly discourse. The majority of sources which include a tripartite division of music here rely on Boethius as authority.

Three exceptions exist. Jacobus's *Speculum musicae* refers to the division by Isidore while Marchetto da Padua and Walter of Evesham share a similar division which is original, though

close connections exist between Isidore's and Augustine's divisions.³⁵ Having made use of Boethius's teachings within the first half of his treatise, it is surprising that Walter does not take the tripartite divisions by Boethius for his work.

TABLE 3.1 Tripartite Divisions of Music, c. 1000–c. 1400

TREATISE	AUTHORITY		
	Boethius	Isidore/Cassiodorus	Original
<i>Didascalicon</i> Hugh of St Victor	✓		
<i>Speculum musicae</i> Jacobus de Liège		✓	
<i>Ars nova</i> Philippe de Vitry (attributed)	✓		
<i>Speculum musicae</i> Johannes de Muris	✓		
<i>De speculatione musicae</i> Walter of Evesham			✓
<i>Lucidarium</i> Marchetto da Padua			✓
<i>Quatuor principalia</i> John of Tewkesbury (attributed)	✓		

In *Die Klassifikation der Musik von Boetius bis Ugolino von Orgieto*, Gerhard Pietzsch

discarded Walter's division as irrelevant since it did not 'fit' into any category of classification

³⁵ According to Jan Herlinger, Marchetto da Padua's division of music is closely related to Augustine's *De ordine*. Capitulum Septum. De Divisione Musicae: Quamvis omnis modulatio vocis et soni ac aciam quicquid ab auditu percipitur musica sit, quia per ipsam de eis redditur ratio, tamen sciendum est quod musica nomen generis est, et diffinitio supra data de ipsa diffinitio generis est. Et quia genus est quod habet species, ideo est sciendum quod musicarum alia armonica, alia organica, et alia rithimica dicitur, de quibus omnibus est propositum breviter demonstrare.

[Chapter Seven. On the Division of Music: Although every modulation of the voice and of sound - and in fact whatever is perceived by the ear - is music (since the principle of these things is expressed through it), music is the name of a genus, and the definition of it given above is the definition of a genus. And because a genus is that which contains species, the species of music are harmonic, organic, and rhythmic. We propose to describe them briefly.]

Jan Herlinger, *The Lucidarium of Marchetto of Padua: A Critical Edition, Translation and Commentary* (Chicago, 1985), 86-89.

adopted by other major theorists.³⁶ Though resembling Isidore's division as is found in his *Etymologies*, Pietzsch was quick to note that Walter's division was different.³⁷ Because the tripartite classification of music was different from others which he had identified, Pietzsch noted that further discussion on the division provided in *De speculatione musicæ* invites no further discussion.³⁸ Yet, instead of discarding the classification as insignificant due to its originality, it is worthwhile to investigate the scheme presented by Walter further to see if an alternative motive or purpose has been hitherto undermined.

Isidore & the division of music

The craft of 'mastering a repertoire of facts which could be pulled out at an opportune occasion', to loosely paraphrase what Calvin Bower once wrote on the writings of early medieval theory, can certainly be detected in Isidore of Seville's *Etymologies* (c.627-36 AD).³⁹ The numerous topics within the encyclopaedia reveal the author's extensive knowledge on a variety of subjects: aside from a commentary on the Seven Liberal Arts which include rhetoric, mathematics and grammar, Isidore provides a categorisation which includes nearly every aspect of life: medicine, law, theology, war, anatomy, geology and geography. Among this broad subject matter, book three contains the quadrivial subjects under the umbrella *De mathematica*. Though in the opening description music is said to be 'the study that is occupied with the numbers that

³⁶ Gerhard Pietzsch, *Die Klassifikation der Musik von Boethius bis Ugolino von Orvieto* (Halle, 1929), 96-98.

³⁷ 'Festgestellt sei nur, dass er die Klangrealität der 'musica mundana' bestreitet und sich bei der Klassifikation auf das Isidorische Schema stützt, das er jedoch vollkommen anders auffasst. Er teilt die Musik in 'musica organica, rithmica seu metrica (!) et armonica.' *Ibid.*, 97.

³⁸ 'Auch der Traktat 'De speculatione musicæ' von Walter Odington bietet uns keinen Anlass zu eingehenderer Besprechung.' *Ibid.*, 97.

³⁹ 'The principle goal for learning *musica* seemed to have been mastering a repertoire of facts and references that might be dropped in a speech at an appropriate moment, thereby making a favourable impression and giving the orator more credibility.' in Calvin Bower, 'The Transmission of Ancient Music Theory into the Middle Ages', *The Cambridge History of Western Music Theory* (Cambridge, 2002), 137.

are found in sounds,⁴⁰ it is only in the final chapter that any mention of numbers related to sound can be found. Here, Isidore devotes nine small chapters for its discussion. From the opening chapter, the name for music stems from the nine Muses:

Etymologiae, III. xiv. *De musica et eius nomine* (Of Music and its Name)

Musica est peritia modulationis sono cantuque consistens. Et dicta Musica per derivationem a Musis. Musae autem appellatae $\mu\alpha\sigma\alpha\iota$ id est a quærendo, quod per eas, sicut antiqui voluerunt, vis carminum et vocis modulatio quæreretur. Quarum sonus, quia sensibilis res est, et præterfluit in præteritum tempus, inprimiturque memoriæ. Inde a pœtis Jovis et Memoriæ filias Musas esse confictum est. Nisi enim ab homine memoria teneantur soni, pereunt, quia scribi non possunt.⁴¹

Music (*musica*) is the practical knowledge of modulation (*modulatio*) and consists of sound and song. Music is so called through derivation from the word ‘Muse,’ for the Muses (*Musae*) were named from $\mu\alpha\sigma\alpha\iota$, that is, from ‘seeking’, because it was through them, as the ancients would have it, that the power of song and the modulation of the voice were sought. Their sound, because it is something perceived by the senses, vanishes as the moment passes and is imprinted in the memory. Whence came the invention of the poets that the Muses are the daughters of Jupiter and Memory, for unless sounds are held by the memory of man, they perish, because they cannot be written down.⁴²

Isidore’s concern for the topic does not regard the function of music or its production, but its description. Care is given in presenting analogies, divisions and clarification of terminology.⁴³

With Franco of Cologne’s *Ars cantus mensurabilis* in the late thirteenth-century transformed the way in which Western music was composed and preserved.⁴⁴ Though little is

⁴⁰ ‘Musica est peritia modulationis sono cantuque consistens.’ Barney, et al., *The Etymologies*, 89.

⁴¹ Isidorus Hispalensis, *Scientientiae de musica*, *Scriptores ecclesiastici de musica sacra potissimum*, 3 vols, ed. Martin Gerbert (reprint, Olms 1963), 20.

⁴² Barney, et al. eds, *The Etymologies*, 95.

⁴³ For instance, when delving into a further discussion and instrumental applications of parts, further subdivisions are made. When describing song or *cantus*, it is significant that Isidore describes its different qualities: ‘A song is the voice changing pitch, for sound is even-pitched; and sound precedes song. Arisis is elevation of the voice, that is, the beginning. Thesis is lowering the voice, that is, the end. Sweet voices are refined and compact, distinct and high.’ etc. Though informative, they have little association with the production of sound and remain only as descriptions of what is taking place. Barney, et al., *The Etymologies*, 96.

⁴⁴ Studies on Franco include: ‘Zur Datierung von Francos “Ars cantus mensurabilis”’, *Archiv für Musikwissenschaft*, vol. 27 (1970), 122-127; Michel Huglo, ‘De Francon de Cologne à Jacques de Liège’, *Revue belge de Musicologie/Belgisch Tijdschrift voor Muziekwetenschap*, vol. 34/35 (1980/1981), 44-60; Charles M. Atkinson, ‘Franco of Cologne on the Rhythm of *Organum Purum*’, *Early Music History*, vol. 9 (1989), 1-26; Michel Huglo, ‘Recherches sur la personne et l’oeuvre de Francon’, *Acta Musicologica*, vol. 71, (1999), 1-18; Christian Thomas

known of Franco, of his purpose to compile new information in a treatise, or for whom the treatise was intended to have been used, his name became synonymous with the new innovation, referred to as Franconian notation. The implementation of new notational methods which had emerged by the late Middle Ages, initiated yet another change of purpose for writing music treatises.

In a brief introduction, which is intended to be a transition from the past to the present, Franco paid homage to the great traditions, acknowledging Gregory as the originator of music and that Boethius' text was used for the speculative theory of music and Guido of Arezzo's treatise for its practice,:

Cum de plana musica quidam philosophi sufficienter tractaverint, ipsam quoque nobis tam theorice quam practice efficaciter ellucidaverint, theorice praecipue Boetius, practice vero Guido monachus, et maxime de tropis B. Gregorius: idcirco nos de mensurabili musica, quam ipsa plana musica praecedat tamquam principalis subalter nativam, ad preces quorundam magnatum tractare volentes, non pervertendo ordinem ipsam planam perfectissime a praedictis philosophis supponimus propalatam.⁴⁵

Since certain philosophers have sufficiently treated plainsong and have effectively clarified it for us both theoretically and practically – Boethius accurately with respect to theory, Guido the Monk with respect to practice, and especially Gregory concerning ecclesiastical chants – we, therefore, at the request of certain great men, propose to treat mensural music, which plainsong precedes just as a leader precedes a subordinate; we do not intend to pervert this order since we suppose plainsong to have been most perfectly supported by the aforesaid philosophers.⁴⁶

A sense of succession, though not fully chronological (Guido comes before Gregory, for instance), inherits the established tradition and is immediately noticeable in Franco's opening

Leitmeir, "Types and Transmission of Musical Examples in Franco's *Ars cantus mensurabilis musicae*", *Citation and Authority in Medieval and Renaissance Musical Culture. Learning from the Learned*, ed. Suzannah Clark & Elizabeth Eva Leach (Woodbridge, 2005), 29-44.

⁴⁵ Franco de Colonia, *Ars cantus mensurabilis*, ed. Gilbert Reaney & André Gilles CSM 18 (Rome, 1974), 23.

⁴⁶ Peter M. Lefferts, *Robertus de Handlo "Regule" and Johannes Hanboys "Summa": A new critical text and translation of facing pages, with an introduction, annotations, and indices verborum and nominum et rerum* (Nebraska, 1991), 181. The *Summa* by Johannes Hanboys opens with a direct quote from Franco of Cologne's *Ars cantus mensurabilis*.

statement. Franco considers the previous works written by the great philosophers sufficient: they had explained the matter of plainchant from both theoretical and practical aspects, both effectively and sufficiently. The intention and purpose which was set for writing *Ars cantus mensurabilis* was to compile and present the practice of mensural music:

Proponimus igitur ipsam mensurabilem musicam sub compendio declarare; benedictaque aliorum non recusabimus interponere, erroresque destruere et fugare, et si quid novi a nobis inventum fuerit, bonis rationibus sustinere et probare.⁴⁷

Therefore we propose to expound on this mensural music in the form of a handbook, and though we will not decline to interpose in the things well said by others, we will try to eradicate or put to flight errors, and if anything new is found by us, to uphold and prove it with good reasons.⁴⁸

Here, the strategic acknowledgement of other writers is overshadowed by the desire to justify novelty found in the text that is to follow in *Ars cantus mensurabilis*. In fact, Franco is not as concerned with the ‘old’ teachings but rather chooses to delve straight into the intended topic of the treatise—newly invented rhythmic notation.

This is not so for Walter of Evesham’s *De speculatione musicae*. He scorns those who do not take the time to observe ancient practices of *musica* and criticises new authors stating that “[the theorists] begin from the end, skipping the beginning ...”⁴⁹ while additionally implying that they “corrupt what was said by the ancients.”⁵⁰ The short epilogue confirms the author’s intention to write a treatise which transmits the traditional teachings:

Et ista sufficient de musice disciplina speculatione que tanto acceptiora, quanto aliorum dictis sunt concordantia. Nec contemnat quis dicens: aliorum dicta recitat,

⁴⁷ Franco de Colonia, *Ars cantus mensurabilis*, ed. Gilbert Reaney & André Gilles *CSM 18* (Rome, 1974), 24.

⁴⁸ Two variants between Lefferts’ and Reaney’s editions occur but they do not affect the meaning. Lefferts, “*Regule*” and “*Summa*”, 183.

⁴⁹ Sed multiplex necessitas et profectus et eorum imprudens consideratio a fine {inchoant initialia pretermittentes duplum} et.’

GB-Ccc 410, f. 1r; Walter Odington, *Summa*, 42.

⁵⁰ necesse est sub multorum præsumptione multa dici diversa {et ea etiam} corrumpi que ab antiquis dicta sunt, cum sint tectoria.

GB-Ccc 410, f. 1r; Walter Odington, *Summa*, 42.

quod utique fateor, sed excuset insufficientiam meam, si in aliquo defecerim; et acceptet quod non nova apposuerim, cum semper fuerit mea intentio diversa veterum recolligere, et non ampliando fastidium novam diversitatem superaddicere.⁵¹

And these things shall suffice on the theory of the discipline of music, which are the more acceptable the more they are concordance with the statements of others. And let the reader not look down upon me, saying: He recites what others have said, which I readily confess. But let him excuse my inadequacy, if I should have failed in anything, and accept that I have not posited anything new. For it has always been my intention to collect the different teachings of the ancients and not by augmenting the tedium to superimpose a new diversity.

Having reprimanded contemporaries in his prologue whilst clearly stating his intension for the creation of his treatise in the epilogue, it is surprising to see that many of the descriptions of music found in *De speculatione musicæ* tends to freely interpret the ancient texts from which they are derived. What is more, rather than paying homage to former treatises, the author rarely quotes directly nor does he acknowledge Boethius or Isidore within his treatise. This becomes especially apparent with the description of music found in chapter one of Part II.

Laus musicæ

Labelled as ‘Praise of Music’, Walter of Evesham includes an etymological explanation of music to explain its origin and meaning.⁵² Such descriptions are closely followed by a division of its nature into three parts. For its history, theorists could refer to its beginning from Greek mythology, including the relationship between music and the muses as has already been shown above, or the legend of Pythagoras discovering consonance through the striking hammers of a

⁵¹ *GB-Ccc 410*, f. 36r; Walter Odington, *Summa*, 145.

⁵² Jerome de Moravia writes on the effect and excellence of music (*De effectibus sive de excellentia musicæ*) in his *Tractatus de musica* while Marchetto de Padua divides his praise of music into two chapters, *De pulcritudine musicæ* and *De utilitate musicæ*. See: Hieronymus de Moravia, *Tractatus de musica*, ed. S. M. Cserba, Freiburger Studien zur Musikwissenschaft, vol. 2 (Regensburg, 1935), 3-179, at 40; *The Lucidarium of Marchetto of Padua: A critical Edition, Translation, and Commentary*, ed. and trans. Jan W. Herlinger (Chicago, 1985), 68-106 at 76.

blacksmith.⁵³ For an alternative source, scriptural references to music found in the Old Testament were used.⁵⁴ Similarly, if a division of music was included within a treatise, this was often based on either Isidore or Boethius' division. By the late Middle Ages, however, many theorists were keen to pursue the main point of their treatise, and an acknowledgment to such references serve the purpose of introduction. Among those from the thirteenth and fourteenth centuries, theorists such as Jacobus (in his *Speculum musicae*), Philippe de Vitry and Johannes de Muris all contain a musical division based on the teachings by Boethius, but abstain from further elaboration on the topic.

Since retaining traditional teachings was of considerable importance for Walter of Evesham, it is not surprising that the fourteenth-century English treatise would include a chapter to praise the existence of music. Yet, what is unforeseen in this treatise is that though the division of music was borrowed from Isidore's, it is somewhat original when subjected to a comparison to the earlier authority.⁵⁵

⁵³ Boethius, *De institutione musica*, I. 10.

⁵⁴ References from the Old Testament as can be found within *De speculatione musicae* include mention of Tubal the son of Cain, who according to the book of Genesis, was the inventor of music, while the story of David calming King Saul included in the treatise, is said to demonstrate the power of music. Walter Odington, *Summa*, 61.

⁵⁵ Intellectual thought based on Aristotelian philosophy pervaded thirteenth and early fourteenth literature. With the rediscovery and subsequent initiation of Aristotle's teaching into philosophical debates came the possibility to categorise anew theories and classifications of knowledge which had remained impossible to consider. On the general intellectual milieu of the thirteenth century, Dorit Tanay notes that the official language of learning in the Middle Ages was based on the revival of Aristotle's philosophies (Tanay, *Noting Music, Marking Culture*, 20). It was a group of intellectual thinkers, wishing to unite their philosophical world-views, either in agreement or disagreement with the doctrines, that became foundational to various ideas, whether they were musical, philosophical or theological. For intellectuals, music was one discipline among others that was classifiable. A common method in which classification of knowledge could be made through an Aristotelian worldview was a distinct division between theory and practice. The problem with music, however, was that when classified, it falls into both divisions. This conflict, evident in writings of the thirteenth century, led to a differentiation of theory and practice and placed a distinction between knowing something and knowing the reason *why*.

Such theories were already represented within Boethius' teachings, especially in the definition of a musician as those who perform, who compose and who can discuss music, as found in book I chapter 34 of *De institutione musica* (Boethius, *De institutione musica*, ed. Friedlein, 223-225). Hugh of St. Victor defined a classification of knowledge that was one of the greatest to influence twelfth-century philosophers and is heavily based on Boethius' own division of music (Dyer, 'The Place of *Musica*', 22-24). Other treatises written in subsequent centuries unfold how Boethius' teachings were used extensively in intellectual schemes of knowledge, providing further evidence that *De institutione*

Musica quidem est modulationis peritia sono tactuque consistens, et dicitur a musis, quas⁵⁶ poete finxerunt sonus esse filias et memorie, quia nisi memoria teneantur, soni pereunt.⁵⁷

Musica is expertise in music-making consisting in sound and touch, and is so called from the Muses, whom the poets feigned to be the daughters of Jupiter and Memory: for, unless they should be retained by memory, sounds perish.

In the passage which follows, Walter adds his own knowledge to the original text, expanding and lengthening explanation of the Muses to include all of the names and qualities associated with them. The substantial inclusion of specific descriptions of the Greek maidens is significant yet is by no means isolated: such an interpretive use of traditional text becomes a trademark of the author. However, one specific change here is especially peculiar. Aside from being a substantially longer version in comparison to the *Etymologies, De speculatione musicae* changes a key word in its definition: song (*cantus*) to touch (*tactus*), emphasising the inclusion of instruments as a part of music since instruments require touch to produce sound (Table 3.2, below).

musica was commonly available and referred to by the authors in their writings. The pursuit of clarity in definition, however, is not easily achieved. By the end of the thirteenth century, a serious discussion for the division of music did not lead to a classification of music as a mechanical art (which could become the intermediary position which might explain the median between practice and theory) but was rather positioned among the *scientie mathematice* (Dyer, 'The Place of *Musica*,' 70).

Giles Rico has argued that although the author of *De speculatione musicae* may not have directly incorporated *musica mundana* within his treatise, some aspects of the concept can be found among the introductory chapters in Part I. Yet, the conclusion reached is that Walter departs from a close understanding of Aristotelian text, suggesting that any trace of Aristotelian philosophy owes more to the general surge of interest his teachings held at the time. Giles Rico, 'Auctoritas cereum habet nasum': Boethius, Aristotle, and the Music of the Spheres in the Thirteenth and Early Fourteenth Centuries', *Citation and Authority in Medieval and Renaissance Musical Culture. Learning from the Learned*, eds Suzannah Clark & Elizabeth Eva Leach (Woodbridge, 2005), 20-28.

⁵⁶ *quasi* in the source.

⁵⁷ *GB-Ccc 410*, f. 6v; Walter Odington, *Summa*, 59-60.

TABLE 3.2 The praise of music

Walter, <i>De speculatione musicæ</i>	Isidore, <i>Etymologies</i>
De utilitate musica: Musica quidem est modulationis peritia sono tactu que consistens, et dicitur a musis, quasi poete finxerunt sonos esse filias et memorie, quia nisi memoria teneantur, soni pereunt.	De musica et eius nomine: Musica est peritia modulationis sono cantu que consistens. Et dicta Musica per derivationem a Musis. Musae autem appellatae $\mu\alpha\sigma\sigma\alpha\iota$ id est a quærendo, quod per eas, sicut antiqui voluerunt, vis carminum et vocis modulatio quæreretur. Quarum sonus, quia sensibilis res est, et præterfluit in præteritum tempus, inprimiturque memoriæ. Inde a pœtis Jovis et Memoriæ filias Musas esse confictum est. Nisi enim ab homine memoria teneantur soni, pereunt, quia scribi non possunt.

Why the author changed the word *cantus* to *tactus* may become slightly more evident through the chapter which follows.

According to *De speculatione musicæ*, the three parts of music are instrumental (*organica*), rhythmical or metrical (*rhythmica vel metrica*) and harmonic (*armonica*).⁵⁸ Rather than use the same categorisation of parts by Isidore or Boethius, the parts of music in *De speculatione musicæ* pertain to something slightly different. However, a further investigation reveals certain similarities to the three parts as presented in Isidore's *Etymologies*. The author of *De speculatione musicæ* provides a title derived from the *Etymologies*, yet, its content mixes information from chapter xvii, *De tribus partibus musicæ*, and chapter xviii from the later (Table 3.3, below).

⁵⁸ Refer to the opening section of the present chapter titled, 'The Classification of Music.'

TABLE 3.3 *De tribus partibus musicæ*

Walter, <i>De speculatione musicæ</i> Part II, chapter 2	Isidore, <i>Etymologies</i> III. xvii & xviii
De tribus partibus musicæ: Musice quidem tres partes, scilicet organica, rythmica seu metrica, et armonica. Organica est que consistit in instrumentis sonoris; et alia quidem fiunt ut flatu sonent, ut organa et tube; alia vero ut pulsus sonent, ut cithara, tympanum, psalterium. Rythmica seu metrica est que requirit incursionem verborum et decernit in gestis et carminibus, ut pede, quibus constant, apte cohereant. Armonica est modulatio vocum et plurimorum sonorum coaptatio, et pertinet ad comedos, tragedos et choros, et eos qui propria voce cantant; et in his omnibus est ratio una ut patebit.	De musica tribus partibus musicæ: xvii. Musicæ partes sunt tres, id est, harmonica, rythmica, metrica. Harmonica est, quæ decernit in sonis acutum et gravem. Rythmica est, quæ requirit incursionem verborum, utrum bene sonus an male cohæreat. Metrica est, quæ mensuram diversorum metrorum probabiliter cognoscit, ut verbi gratia heroicon, iambicon, elegiacon, et cetera. De triformi musicæ divisione: xviii. Ad omnem autem sonum, quæ materies cantilenarum est, triformem constat esse naturam. Prima est harmonica, quæ ex vocum cantibus constat. Secunda organica, quæ ex flatu consistit. Tertia rythmica, quæ pulsus digitorum numeros recipit. Nam aut voce editur sonus, sicut per fauces, aut flatu, sicut per tubam vel tibiam, aut pulsus, sicut per citharam, aut per quodlibet aliud, quod percutiendo canorum est.

The term *organicus* is found in chapter xviii of Isidore's *Etymologiae* and, according to Isidore, is a method in which sound is made through blowing. *De speculatione musicæ* combines the descriptions found in chapter xviii of the *Etymologies* to include what types of instruments might be categorised, such as the flute, the organ or the pipe, but instruments which require tactile motions to create sound; the tympani, cithara and stringed instruments. *Harmonica* is depicted as the 'modulation of sound' rather than the differentiation of high and low pitches while *rythmica* maintains its description from chapter xvii of the *Etymologiae* as pertaining to poetry.

Having considered both the declared need to return to the ancients in his prologue and the more conservative nature of the treatise in general, the obvious deviation from Isidore's

division of music is out of place, especially since no other treatise from the thirteenth or fourteenth-century which discusses the division of music treats it in this way.

As has already been shown above, structurally, *De speculatione musicae* can be seen to be a comprehensive work, written progressively through compounding upon basic concepts (Table 3.4, below).

TABLE 3.4 The six parts of *De speculatione musicae*

Part I	<i>De inaequalitate numerorum et eorum habitudine</i>
Part II	<i>De inaequalitate sonorum sub proportione numerali et ratione concordiarum</i>
Part III	<i>De compositione instrumentorum musicorum et de tropis</i>
Part IV	<i>De inaequalitate temporum in pedibus quibus metra et rhythmus decurrunt</i>
Part V	<i>De harmonia simplici, id est de plano cantu</i>
Part VI	<i>De harmonia multiplici, id est de organo</i>

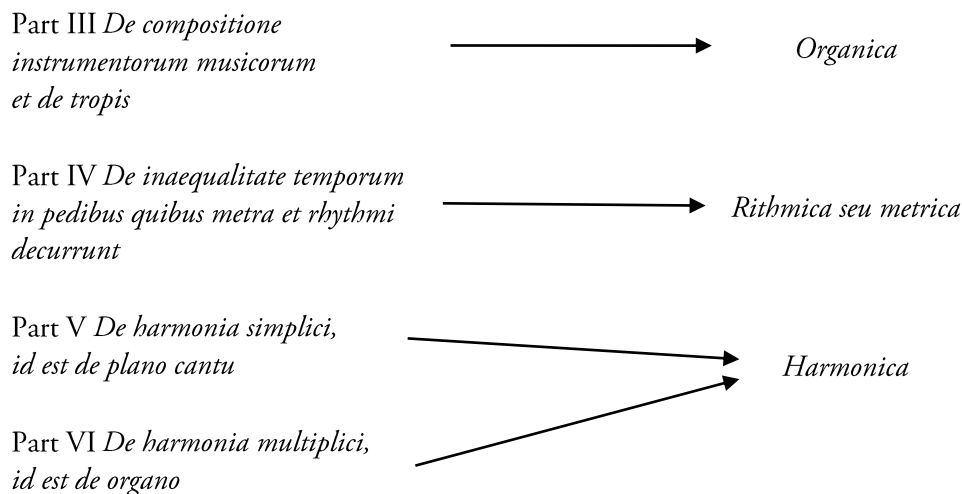
Part I is a summary of mathematical properties largely based on books one and two of Boethius's *De institutione arithmetica*. Part II involves methods of calculations applied to music for an introduction of its tonal relationships. Part III brings together the knowledge already presented and applies them to the production of sound through instruments or the voice. Part IV elaborates on Isidore's chapter on the metrical feet of poetry. Part V introduces musical notation and the musical scale while Part VI expands this further to present practical examples of their function.

When *De speculatione musicae* is observed as a complete work, the division of music from Part II may suggest the specific order from which the treatise was written. Part I and Part II seem to stand alone, separated from what follows by their heavy reliance on numerical principles. The final four parts however, follow the tripartite division of music as proposed in the introduction:

in Part III, are instruments (*organica*); Part IV presents metrical divisions in poetry and its rhythm (*rhythmica seu metrica*), and within the final two parts, descriptions and principles of harmony (*harmonica*) (Example 3.3, below).

Although not immediately obvious through the prose of *De speculatione musicae*, the division of music found in Part II, then, may not only have been an original division but served as a structural device which lay a foundation for the four parts which were to follow.

EXAMPLE 3.3 Structure of *De speculatione musicae* and parts of music



Originality denotes a clear understanding of basic facts. For Walter, this is manifested in a broader understanding of speculative music through a new classification of ideas. By altering slightly Isidore's classification of music to create something unique, the division of music given in *De speculatione musicae* implied more than a mere nod of acknowledgement towards an *auctoritas*.

So far, it has been the use of authority within *De speculatione musicae* which has been explored. The possible implication of Walter's unique division of music has provided some means to further understand how he referred to authority. A re-interpretation of a traditionally

authoritative text to suit a new purpose may be one reason why *De speculatione musicæ* became a source of authority for other English theorists who followed in the later decades of the fourteenth century. London, British Library, Royal MS 12.C.VI (*GB-Lbl Royal C.12.VI*) and the now illegible London, British Library, Cotton Tiberius MS B IX (*GB-Lbl CT B9*) are thought to date from the first quarter of the fourteenth century.⁵⁹ Because of the importance of content and relationship between the Royal and Cotton sources, the two manuscripts have been the focus of several previous codicological and palaeographical studies.⁶⁰ However, the primary concern here is the often neglected four chapters from Walter's *De speculatione musicæ* found in the Cotton manuscript.

Walter as authority

Not only did Walter refer to authority in his treatise, his own work became a source of authority for theorists who came after him. In a section which is missing from the Cotton manuscript (but transmitted in the eighteenth-century copy London, British Library, Additional 4909 (*GB-Lbl Add. 4909*), fols. 105r-106r, are four short chapters from Walter of Evesham's *De*

⁵⁹ London, British Library, Royal MS 12.C.VI is famous for being one of the main sources for the music treatise, *Anonymus IV*.

⁶⁰ Two treatises in the Cotton Tiberius MS B IX can be found in Royal MS 12.C.VI. Fritz Reckow hypothesised that the former was possibly directly copied from the later. However, this can only be verified through the eighteenth-century manuscript, *GB-Lbl Add. 4909*, since the portion containing the treatises in question is no longer extant in *GB-Lbl CT B9*. Upon a close comparison, Reckow noted two small transcription errors in the eighteenth-century copy: a misplacement or possible misunderstanding of two words—more specifically, of words containing the letter *s* and *f*. Reckow presumed that the fourteenth-century scribe who copied the Cotton manuscript may not have clearly understood the content which he was transcribing. In her study of the *Quatuor principalia*, errors found within other treatises included in the eighteenth-century manuscript led Luminita Aluas to conclude that some could have been made by the eighteenth-century scribe who was unable to properly read the medieval script. Errors which Aluas detects include misreading for the words 'motetis' as 'nocetis', 'corpus' as 'corus' and 'minimitatis' as 'minitantis'. See: Fritz Reckow, *Der Musiktraktat des Anonymus 4*, Teil I: Edition (Wiesbaden, 1967), 17-18; Luminita Aluas, 'The Quatuor principalia Musicæ: A Critical Edition and Translation, with Introduction and Commentary' (Ph.D. diss., Indiana University, 1996), 178-179.

speculatione musicae. Both the selection of chapters and the fact that they are included in this manuscript are noteworthy when considering the practical use and early reception of this treatise. Curiously, rather than copying four successive chapters from the treatise are four seemingly unrelated chapters: they are chapter 11, chapter three and chapters six & seven from Part VI of the treatise.⁶¹ As stand-alone chapters the four are perplexing at best: they do not specifically refer to any ground-breaking teachings of the time, nor do they offer any self-explanatory reason for existing as individual chapters.⁶²

The transmission of Walter's *De speculatione musicae* into the Cotton manuscript, regardless of its accuracy, provides a case-study to examine the use and transmission of the treatise in the fourteenth century. What could have been the purpose of a seemingly haphazard inclusion of random chapters? Why take four chapters in this order, seemingly out of context? It is the way in which partial contents of *De speculatione musicae* were transmitted into compendium manuscripts and subsequent treatises that specific use or purpose of the treatise might be unveiled. The transmission of *De speculatione musicae* into different manuscripts, through select portions of direct quotations, already provides evidence that Walter's work was considered a

⁶¹ See Appendix II for a transcription of these chapters.

⁶² The four chapters are summarised briefly here. Chapter 11 defines terminologies and historical practices of part music: here are the species of *discantus* are only introduced after having established that *organum purum* is the oldest kind of part music. Chapter three lists the possibilities for the perfection and imperfection of the long. Chapter six is a list of the six rhythmic modes and Chapter seven of the perfection and imperfection of the first two modes. The chapters present information in a form of succession. First is a definition of terminology. The classification of part music begins with *organum purum* before expounding on the music of two parts, *discantus*, and the ensuing section explains the various compositional forms of discant melodies; those which melodically repeat are rounds (*rondellus*) whilst repetitive sections are referred to as *conductus*. This list continues with explanations of copula, motets and hockets. Having established this, the remaining chapters expound on the qualities and functions of notation. The notated examples included in fols. 105v-106 of eighteenth-century transcription contain errors (See Appendix II). The first example should be 'long breve' but is its opposite, 'breve long' and the example for Mode V, which within the text explicitly states that it consists of all longs (*omnes longas*), instead contains breves. Such obvious and basic misattributions seem highly unusual since rhythmic modes were widely accepted throughout Europe by the beginning of the fourteenth century. In any case, although the scribe need not have memorised or known the different modes by heart, he should have been aware of the difference between the notation of a long and a breve. Had the scribe not been musically literate, once the examples had been cross-examined with the text, a clarification could have been possible.

worthy text to be studied by contemporaries. The following analysis of text and manuscript evidence will reveal the different ways in which *De speculatione musicae* was quoted and copied.

Earlier, it was shown that several manuscripts transmitted all or some portions of text from *De speculatione musicae* (Chapter 2). This is especially noticeable in a short treatise, *Breviarium regulare musicae*, by a certain Willelmus, embedded within **GB-Ob Bodley 842**. The manuscript has been proposed to date from the mid-fourteenth century and certainly before 1372.⁶³ Next to nothing is known of Willelmus since his treatise did not circulate beyond this manuscript nor are further connections to other treatises made.

From the outset, Willelmus claims to be a well-read and well-informed theorist: ‘I have investigated the various writings of many singers and works devised for the practice of music.’⁶⁴ And he certainly does seem competent to provide a concise yet thorough explanation of teachings both from the present and of the past. As it is preserved in **GB-Ob Bodley 842**, the *Breviarium regulare musicae* survives incomplete: only the final part of the first chapter, a complete second and third chapter, which is incomplete, can be found today in this manuscript. Yet, even with the little that does remain it is possible to detect the teachings of Boethius, Guido, Walter of Evesham, Franco of Cologne, Petrus Pisa (the author of the now lost treatise *Quoniam de mensurabili musica*), and Johannes Torkesey.

⁶³ In a 1372 library catalogue from an Augustinian priory in York, a description of a manuscript which closely resembles **GB-Ob Bodley 842** is found. The record no. 645, found among the 220 books which were donated by the theologian and book collector John Erghome, indicates nearly the exact contents: *Musica Theinredi in tribus libris; Musica Franconis in 6 capitulis compendium Franconis de discantu in tribus capitulis; Breviarium regulare musice Willelmi*. Based on the resemblance of content, it has been suggested that the author for this treatise was Willelmus. For a number of reasons, this compendium manuscript is valuable for the history of English treatises: several English authorities are identified, and early proof of the presence of Franco of Cologne’s *Ars cantus mensurabilis* on the British Isles, including musical examples which are distinctly English, can be made. For a summary of library records and most recent research on **GB-Ob Bodley 842**, see Renata Pieragostini in ‘Augustinian Networks and the Chicago Music Theory Manuscript,’ *Plainsong and Medieval Music*, vol. 22 (2013), 75-80. See also: Willelmus, *Breviarium regulare musicae*, ed. Gilbert Reaney, in *Ms. Oxford, Bodley 842 etc.* (Rome, 1966), 15-31.

⁶⁴ *Multorum cantorum scripturas varias ac opera ad practicam musicae laborata investigando.* Willelmus, *Breviarium*, 15.

Authority is of great importance to Willelmus but it is not until the third chapter that any are named.⁶⁵ The portion which remains of chapter one is a near word for word copy of the final portion from Boethius's *De institutione musica* III.15.⁶⁶ Chapter two is a standard division of the monochord. Chapter 3 is devoted to the discussion of music notation, new and old. What is striking about this chapter is that Willelmus thinks that it is necessary to present the different forms of earlier notation before presenting new practices.⁶⁷ A closer examination of this will be made below (Chapter 6).

Partially because he is only interested in writing a brief treatise on music, Willelmus is not concerned with the detailed speculative aspect of music theory in the way that Walter is in his *De speculatione musicae*. Yet, he is aware of the progression of information through which theoretical practices have reached him. In short, the author of *Breviarium regulare musicae* is keen to provide a modern treatise which includes several classifications of music notation to reflect current teachings. Crucially, it is within the text of *Breviarium regulare musicae*, more than any other English treatise, that Walter becomes a significant authority.

It is noteworthy that Willelmus quotes only from the final section of *De speculatione musicae*. Because his treatise is mostly concerned with notation, the earlier parts must have been

⁶⁵ Obviously it is possible that the missing portion of chapter one may have included a reference to Boethius since the text is nearly word for word taken from his treatise. However, one particular reference to authority which occurs later in the treatise may be a clue to indicate that such was not the case. Chapter three, according to Willelmus, is divided into five sections. In the first, the names of notation are given. Willelmus begins with an introduction to solmisation letters, ut, re, mi, fa, sol, la, and refers his readers to Guido as the inventor. Yet this is not the first time the reader has encountered Guido. As Gilbert Reaney points out, Willelmus refers his reader to the same Guido who they read about in chapter one: 'Guidonis ... ut in primo capitulo dictum est' This can only mean that something was already mentioned about Guido in the first chapter. Contrarily, when Boethius is introduced immediately after Guido, no reference to him as being the same as the author of the text from the first chapter is found. This is because no reference can be attributed to the earlier portion of Boethius' text. Other treatises confirm that even if quoted verbatim, authoritative references were not always pointed out. Willelmus, *Breviarium*, 18.

⁶⁶ A comparison with Friedlein's edition of *De institutione musica* only reveals slight variants easily explained by variants that could be found in different manuscript sources.

⁶⁷ As diagrams merit a special study on their own, they will be left for further discussion (Chapter 5).

little use to him. But did anyone read the first half of *De speculatione musicae*? And for what reasons might it have been referred to, if ever?

One English commentator of Boethius' teachings who wrote in the fifteenth century must be briefly mentioned before the close of this chapter. The use of authority by the author of *Commentum Oxoniense in musicam Boethii* is both expansive and impressive with direct citations, paraphrasing and references all sourced from a range of previous literature. The manuscripts, Oxford, All Souls College, 90 (*GB-Oas 90*) and Oxford, Bodleian Library, Bodley 77 (*GB-Ob 77*) only preserve the Preface, parts of book 1 and book 4 and a complete version of book 5.⁶⁸

In the *Commentum Oxoniense in musicam Boethii* is an attribution to Walter of Evesham. Already in the opening preface of the treatise, the name of Walter is amongst what could otherwise be a medieval music theory Hall of Fame.⁶⁹ Unlike Willelmus or the compiler of the

⁶⁸ For a commentary on the manuscripts see: Anonymous, *Commentum Oxoniense in musicam Boethii: Eine Quelle zur Musiktheorie an der Spätmittelalterlichen Universität*, ed. Matthias Hochadel (München, 2002), XI-XX; Joseph Dyer, 'Speculative 'Musica' and the Medieval University of Paris', *Music & Letters*, vol. 90, no. 2 (May, 2009), 199-200.

⁶⁹ Other authorities found within the treatise have been identified by Hochadel: Ailredus Rievallensis, *De speculo caritatis*; Albertus Magnus, *Metaphysica*; Amalarius Symphosius Fortunatus, *Liber officialis*; Ambrosius Mediolanensis, *Exameron, De institutione virginis*; Amerus, *Practica artis musicae*; Anolinus, *Musica, Antiphonale Monasticum*; Aristoteles, *Analytica posteriora, De anima, De animalibus, Ethica Nicomachea (translatio Grosseteste) et (translatio vetus), De generatione et corruptione, Metaphysica (translatio composita) et (nova translatio)(translatio vetustissima), Peri hermeneias, Physica, Topica, Auctoritates Aristotelis (cf); Aurelius Augustinus, De natura et origine animae, Contra Julianum, De civitate Dei, Confessiones, De doctrina Christiana, De Genesi ad litteram imperfectus liber, In Johannis evangelium, De libero arbitrio, De musica, Sermones, De Trinitate, Aurelian (cf), Musica disciplina); Averroes Cordubensis, *Commentarium magnum in Aristotelis De anima*; Beda, *Homeliae evangelii, In Ezram et Neemian, In Lucae evangelium, De arte metrica*; Benedicti, *regula*; Bernardus Clarevallensis, *De consideratione ad Eugeneum Papam, Epistole*; Bernardus Silvestris (cf), *Commentum in Martianum Capellam*; Berno Auriensis (cf), *Prologus in tonarium*; Anicius Manlius Severinus Boethius, *De consolatione philosophiae, Contra Eutychem et Nestorium, De institutione musica, De trinitate*; Calcidius, *Commentarius in Platonis Timaeum*; Iohannes Balbus, *Catholicon*; M. Tullius Cicero, *De inventione, Laelius de amicitia, Ecloga Theoduli, Epistula Alexandri ad Aristotelem, Flos medicinae scholae Salerni*; Carnotensis, *sermones, Glossa in institutione arithmetica Boethii, Glossa maior in institutionem musicam Boethii, Glossa in musicam speculationem Iohannis e Muris, Glossa ordinaria in Biblia Latina, Graduale Romanum*; Gregorius Papa I, *Dialogi, Homiliae in evangelia, Homiliae in Ezechielem prophetam, Moralia in Job*; Guido Aretinus, *Micrologus*; Eusebius Hieronymus, *epistulae*; Honorius Augustodunensis, *Imago mundi*; Q. Horatius Flaccus, *Saturae*; Hrabanus Maurus, *De computo*; Hucbaldus Elnonensis, *De harmonica institutione*; Hugucio, *Liber derivationum*; Hugo de Folieto, *De claustrum animae*; Innocentius Papa III, *De missarum misteriis*; Iohannes de Garlandia, *Parisiana Poetria*; Iohannes de Muris, *Compendium musicae practicae*; John of Salisbury, *Policraticus*; Iohannes de Siccavilla, *De principiis naturae*; Isidorus Hispalensis, *epistole, Etymologiae, Sententiae*; Julius Valerius Alexander Polemius, *Historia Alexandri magni*; D. Iunius Iuvenalis, *Saturae*; Robert Kilwardby, *De ortu**

Cotton manuscript the anonymous author of the commentary is only interested in the numerical and speculative nature of music. His treatise is not concerned with the practice of music but rather of the mathematical equations and theoretical properties of sound. His objective becomes even more obvious when observing the specific sections referred to of Walter's *De speculatione musicae*.

In a similar fashion to the way in which Walter is quoted in Willelmus' *Breviarium regulare musicae*, direct quotes from Walter's treatise are referred to by chapter number in the *Commentum*. In the third and final part of chapter nine, book one, the author refers to Walter's treatise for an explanation of Pythagoras' investigation into consonances (Example 3.4, below). The reference to Walter's work is indicated through an insertion is made: *ut patet in fine 2 libri Arithmetice* (as it is found at the end of the end of the 2nd book of Arithmetic). The text which is quoted is shown in the left column. Walter's text refers to an accompanying diagram and thus uses alphabetical letters to represent intervallic distances.

scientiarum; T. Lucretius Carus, *De rerum natura*; Ambrosius Theodosius Macrobius, *Commentarii in Somnium Scipionis*; Matrianus Minneus Felix Capella, *De nuptiis Mercurii et Philologiae*; Mensura Monochordi, 'Boetius vir eruditissimus', *Musica enchiridiadis*; Nicetas Remesianus, *De laude et utilitate spiritualium canticorum*; Nicolaus Ambianensis, *Ac fidei catholicae*, Oxford, Corpus Christi College, MS 118, fol. 3r-56v, *Glossæ Oxonienses in institutionem musicam Boethii*; P. Ovidius Naso, *Ex ponto*, *Remedia amoris*, *Tristia*; Papias, *Elementarium*; A. Persius Flaccus, *Saturae*; Petrus Blesensis, *Canon episcopalis, epistolae*; Plato, *Timaeus*; C. Plinius Secundus, *Historia naturalis, Prosarium Lemovicense*; Pseudo-Aristoteles, *Liber de causis*; Pseudo-Augustinus, *De spiritu et anima*; Pseudo-Boethius, *De disciplina scolarium*; Pseudo-Chrysostous, *Sermo*; Pseudo-Odo, *Dialogus in musica*; Regino Prumensis, *Epistola de armonica institutione, Rhetorica ad C. Herennium*; C. Sallustius Crispus, *De coniuratione Catilinae, De bello Iugurino, Scolica enchiridiadis*; L. Anneus Seneca, *Epistulae morales*; P. Vergilius Maro, *Georgica, Biblia sacra vulgata*; Walter Map, *Dissuasio Valerii ad Ruffinum, ne uxorem ducat*; Walter Odington, *De speculatione musicae*.

EXAMPLE 3.4 Reference to *De speculatione musicae*

Walter, *De speculatione musicae*
Part II, Chapter 13

Dubitat ergo, an B et D simul faciant medietates intervallo AC. Dicendum, quod non simul, sed alternatim, nunc B, nunc D, nec intelligantur mallei Pythagorae simul percussi, sed post A B, post B C, post C D, post D iterum A. Et sic suavi concordia miscebantur, et inter A et C simul pulsas nunc B, nunc D facit medietatem, sed non simul. Nam istarum quattuor vocum tamen tres se simul compatiuntur, quia tonus non facit mixturam suavem, sicut dicunt Pythagorici. Et instrumentis testantur, quod diatessaron consonantia minima est, ut quæ habitudo minor sit quam sesquitercia, non sit consonantia. Et per consequens tonus, qui in sesquioctava fit, non sit consonantia.⁷⁰

Anonymous, *Commentum Oxoniense*
Book 1, Chapter 9

Dubitaret igitur aliquis, an 8 et 9 simul faciant medietates in intervallo 6 et 12; dicendum, quod non simul et semel, sed alternatim nunc 8, nunc 9 = ut patet in fine 2 libri Arithmetice - ; nunc intelligantur mallei Pictagore non simul percussi, sed post 6 8, post 8 12, post 12 9, post 9 iterum 6, et sic suavi concordia miscebantur. Unde inter 6 et 12 simul pulsa[n]s nunc 8, nunc 9 facit medietatem nunc armonicam, nunc arithmetiam, sed non simul; nam istarum quattuor vocum tres tantum se compatiuntur, quia tonus non facit mixturam suavem secundum Pictagoram. Qui etiam testantur, quod diatessaron consonantia minima est, ut, que habitudo minor sit quam sesquitercia, non sit consonantia. Et per consequens tonus, qui est in sesquioctava proporcione, non est consonantia - ut infra dicit Boetius hic eodem libro capitulo 14 et dicitur infra libro 2 capitulo 17.⁷¹

Fourteen other paraphrases, either in full quotation or in partial paraphrasing, to *De speculatione musicae* are made but none explicitly point out their location or author.⁷²

The sources investigated in the final part of this chapter are fragmentary. Yet it is apparent that Walter's treatise was referred to by subsequent theorists in the late fourteenth and early fifteenth centuries. Walter's treatise was accessed and used for a number of different purposes: for those who needed a basic and practical instruction of notation, the latter parts could be consulted, and for those who were keen to expound on the speculative aspects of music, the opening chapters provided enough grounds to quote or make further comment.

In conclusion, English theorists read English treatises. It was within a few decades that Walter's treatise circulated among English theorists and became an authority in itself. For

⁷⁰ *GB-Ccc 410*, f. 11v-12r; Walter Odington, *Summa*, 73-74.

⁷¹ Anonymous, *Commentum Oxoniense*, Hochadel ed., 204-206.

⁷² Direct quotes are taken from Part I, chapters one & two; Part II, chapters one, 10, 11, 13 & 15; Part III, chapters seven & nine. Other references can be found to be taken from Part II, chapter three and Part III, chapter three.

Walter, a reference to English authors went beyond the body of literature that was specifically music-related. For Willelmus, *De speculatione musicae* provided a platform from which new information could be presented. For the anonymous commentator on Boethius, Walter's treatise became a convenient text to reference since it had already covered sufficient ground from which further commentary could be made. Textual references reveal that an intellectual milieu amongst English authors transmitted information.

This chapter has investigated the circulation of knowledge amongst music theorists in fourteenth-century England, exemplified through Walter's *De speculatione musicae*. The insular circulation suggests that rather than being stagnant and isolated, it was likely that English theorists held a discourse on speculative and practical music. The following chapter investigates the unstudied fragment, London, British Library, Additional 56486a (*GB-Lbl Add. 56486a*) to consider a manuscript transmission of Walter's treatise.

WALTER'S READERS, SCRIBAL CORRECTIONS
& A NEW SOURCE

A FRAGMENT OF *DE SPECULATIONE MUSICÆ* HAS REMAINED unstudied in an archive for forty years. London, British Library, Additional 56486a (hereafter, *GB-Lbl Add. 56486a*) can be found today at the top of a stack of letters and miscellaneous papers from the twentieth century and is certainly out of place to anyone studying the other papers archived under this call number. Yet, the addition of this fragment to the list of manuscripts for Walter's *De speculatione musicæ* is welcomed since, until its purchase in 1971, only a few other sources have informed us about any transmission history of this English treatise. This chapter first begins with an investigation of scribal hands in the more commonly known source for Walter's treatise, Cambridge, Corpus Christi College, MS 410 (*GB-Ccc 410*) before investigating the new fragment source to reveal its position in the dissemination of this treatise. Now that it has been made clear through textual comparison in the previous chapter that English theorists read

English treatises, the sources remaining in archives show that once written, the texts did not remain on library shelves.

In many ways this chapter responds to the ‘surprisingly small number’ of codicological assessment for music theory manuscripts, most recently noted by Michel Huglo† and Barbara Hagg but also suggested by Albert Derolez, who, suggests that an overall codicological observation of the medieval book still remains at a rudimentary stage.¹ A move from the creation of editions (a prominent activity in the middle of the previous century) followed by an undertaking of comprehending music theory as it was written in the Middle Ages, to an understanding of the larger context of music treatises in recent years has resulted in a full circle of scholarship where an investigation of the object as it remains extant today has become once again necessary.² Though catalogued and identified in reference sources, many manuscripts containing medieval music theory have yet to be investigated closely to determine origins, stemma or schools of copyists and specific scribal activities – an area of scholarship which Godfried Croenen has identified to be ‘not yet fully explored.’³

This shift of interest, influenced by New Medievalism and New Philology, seeks to return to sources as objects for investigation by seeking to find an interaction of different persons with the object.⁴ Mary A. Rouse and Richard H. Rouse have been leading scholars in establishing the importance of studying medieval manuscripts as objects. Rouse and Rouse emphasise the

¹ Michel Huglo† and Barbara Hagg, ‘The Topography of Music Theory in Paris, 900-1450’, *City, Chant, and the Topography of Early Music*, eds Michael Scott Cuthbert, Sean Gallagher and Christoph Wolff (Cambridge, Mass., 2013), 275-328, at 314-315; Albert Derolez, *The Palaeography of Gothic Manuscript Books: From the Twelfth to the Early Sixteenth Century* (Cambridge, 2003), 2-3, 32.

² *Ibid.*, 276.

³ Godfried Croenen, ‘Patrons, Authors and Workshops: Books and Book Production in Paris around 1400’, *Patrons, Authors and Workshops: Books and Book Production in Paris Around 1400*, ed. Godfried Croenen and Peter Ainsworth (Louvain, 2006), 16-17. More on the scribal hands in the manuscripts discussed in this chapter can be found in Appendix I and Appendix II.

⁴ Stephen G. Nichols, ‘Introduction: Philology in a Manuscript Culture’, *Speculum*, vol. 65 (1990), 1-10 at 7-9.

importance of the finger prints left by human beings behind the page, whether they were the readers, the correctors or the observers, these marks were left there amongst various political, theological and scholastic environments set out to produce the manuscript that scholars now investigate to write a history.⁵ It is this approach that is considered the most important in this chapter which examines the physical objects containing Walter of Evesham's *De speculatione musica*.

The following chapter, then, is the type of palaeographical and codicological manuscript investigation suggested by Rouse and Rouse: of the physical support (layout of bifolia in quires, dimensions), marks applied to the object (written text, images), and the importance of these marks to the author or scribe (text conveyed by script, symbolism in image).⁶ Firstly, the two main manuscripts forming the corpus of sources which contain *De speculatione musica* will be described and investigated. Both manuscripts have certain features which exhibit different scribal activities to reveal planning and layout. Following this, the two sources will be compared together in the attempt to demonstrate whether either was an exemplar manuscript for another. The comparison will include a textual analysis and preliminary identification of different types of diagrams.⁷ Finally, based on the two different investigations, the chapter will conclude with a newly proposed stemma of manuscripts, revealing that the two sources stem from two different transmission traditions and that an exemplar manuscript from which either sources could have been copied no longer exists.

⁵ Mary A. Rouse and Richard H. Rouse, *Authentic Witnesses: Approaches to Medieval Texts and Manuscripts* (Notre Dame, IN, 1991), 2-3.

⁶ *Ibid.* Rouse and Rouse emphasize that the elements listed here are evolving components of any manuscript and offer the possibility to consider cultural and circumstantial evidence to the modern scholar.

⁷ A further investigation of diagrams will take place in Chapter 5.

Cambridge, Corpus Christi College, MS 410

Cambridge, Corpus Christi College MS 410 (hereafter, *GB-Ccc 410*) is the only manuscript which contains the full treatise of *De speculatione musicae*.⁸ This being the case, it has been the source from which the editions of the treatise have been made.⁹ According to a record entered in the *Relationum historicarum de rebus anglicis* by John Pits (1560-1616), the manuscript was already held at Cambridge in the seventeenth century.¹⁰ RISM confirms that this was rebound in the seventeenth century perhaps at the time when it was brought to the college library.¹¹ Further restoration to the manuscript was made in 1971.¹² The treatise, *De speculatione musicae*, is contained within 36 folios made from four quires and two single leaves of parchment: I (IV⁸) + II (V¹⁸); III (IV²⁶), IV (IV³⁴) + 35 + 36 (Example 4.1, below). Each quire is made of quaternions and quinternions, not uncommon among medieval manuscripts.¹³ The parchment throughout the four quires and single folios are pricked and ruled for approximately 34 lines, each line being roughly 5mm apart.

⁸ Incipit: summus (corrected to summa) fratris Walteri monachi Eueshamie musici de speculatione musicae. Explicit: Et acceptet quod non nova apposuerim cum semper fuerit mea intentio diversa veterum recolligere et non ampliam dando fastidium novam diversitatem superaddicere.

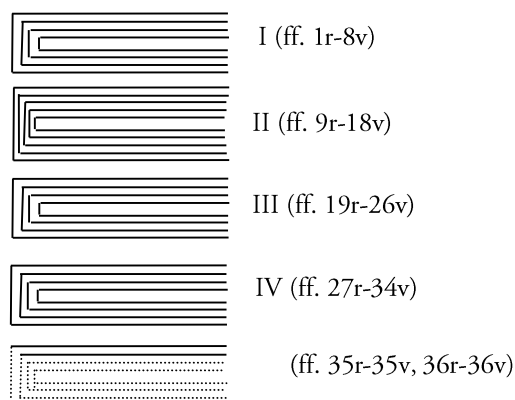
⁹ Walter Odington, *Summa de speculatione musicae*, ed. Frederick Hammond CSM 14 ([Rome], 1970); Walter Odington, *De speculatione musicae*, ed. Edmond de Coussemaker, Scriptorum de musica medii aevi nova series a Gerbertina altera (Paris, 1864; Hildesheim, 1963, reprint), I:182-250.

¹⁰ 'De speculatione musicae, *Librum unum*. Plura quam digna de spec. M.S. Cantabridgiae in Collegio S. Benedicti.' John Pits, *Relationum Historicarum de Rebus Anglicis* London, 1619, reprint Meisenheim, 1969), 312.

¹¹ It may have been at this time that the binding of two other treatises happened. See: RISM, *The Theory of Music, Vol. IV, Part I, Great Britain*, eds Michel Huglo, Christian Meyer, and Nancy Phillips (Munich, 1992), 4.

¹² The two treatises which follow *De speculatione musicae* in Cambridge, Corpus Christi College MS 410 are from different sources. Since none of the other treatises are written on parchment, it is safe to assume that originally, the section containing *De speculatione musicae* formed either an independent manuscript or was taken from an entirely different source which contained other works: on paper, the *Libellus cantus mensurabilis* attributed to Johannes de Muris, and a short treatise on the rule of descant (written in Middle English). A transcription of the latter was made by Manfred Bukhofzer. See: Manfred Bukhofzer, *Geschichte des englischen Diskants und des Fauxbourdons nach den theoretischen Quellen* (Strasbourg, 1936), 143-146. More recently, a study of manuscripts containing English script in Cambridge, Corpus Christi College has been conducted by Kari A. Rand in *The Index of Middle English Prose Handlist XX: Manuscripts in the Library of Corpus Christi College, Cambridge* (New York, 2009), 119-121.

¹³ At certain times during the thirteenth and fourteenth centuries, manuscripts were made from six bifolia or even 12 bifolia. By the late fourteenth and early fifteenth century, however, manuscripts with smaller quaternios are more commonly found. Derolez, *The Palaeography of Gothic Manuscript Books*, 32-33.

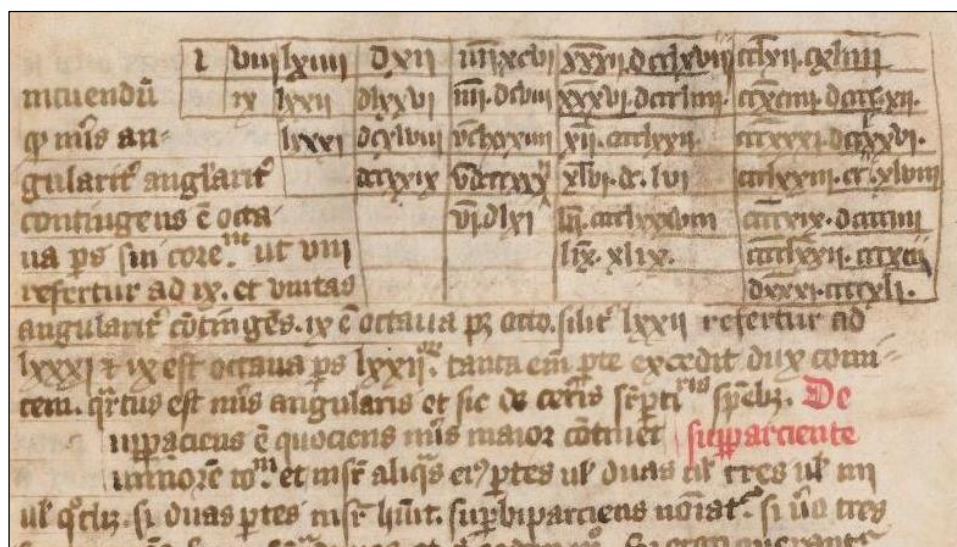


EXAMPLE 4.1 Quire formation of *GB-Ccc 410*, ff. 1r-36r

Though the codicological structure of this manuscript reveals little that is unusual, it is the scribal change of hands at a strategic point which invites further attention. The main text of the treatise was written by two scribes: the first scribe (hereafter Scribe 1) wrote the text found in quires I and II, while the second scribe (hereafter Scribe 2) was responsible for the content found in quires III and IV and the final two folios (ff. 35r-36r). Both scribal hands are equally legible and their similarity in style, ink and layout throughout indicates that the work was copied as one unified work.¹⁴ Though space is provided for rubricated initials, only small letters for the first word of each sentence remain in black ink. Because of this, the manuscript suffers from a somewhat ‘unfinished’ look. For example, the table on folio 4r (Example 4.2, below) is not as carefully laid out, exceeding the textual margins of the folio. Additionally worth noting are the capital initials which are missing

¹⁴ The hand of Scribe 1 is more easily legible than the hand of Scribe 2, who tends to abbreviate his text more frequently. This has been noted already in Walter Odington, *Summa*, 17. For more on the use of ink in medieval manuscripts see: Bernhard Bischoff, *Latin Palaeography: Antiquity & The Middle Ages*, trans. Dáibhí Ó Cróinín & David Ganz (Cambridge, 1990), 16-18.

from the opening paragraphs in all sections of the manuscript. The neglect to fill these in suggests that the manuscript remained unfinished.¹⁵



EXAMPLE 4.2 Unfinished and untidy sections of the manuscript in *GB-Ccc 410*, 4r¹⁶

Aside from the convenience and practical reasons for copying the text in two equal number of quires, I-III for Scribe 1 and IV-VI for Scribe 2, another rather pragmatic reason for having two scribes copy out this work exists. *De speculatione musicae* comprises of six parts of varying lengths, each containing between five and 18 chapters (Table 4.1, below).

TABLE 4.1 The Six Parts of *De speculatione musicae*

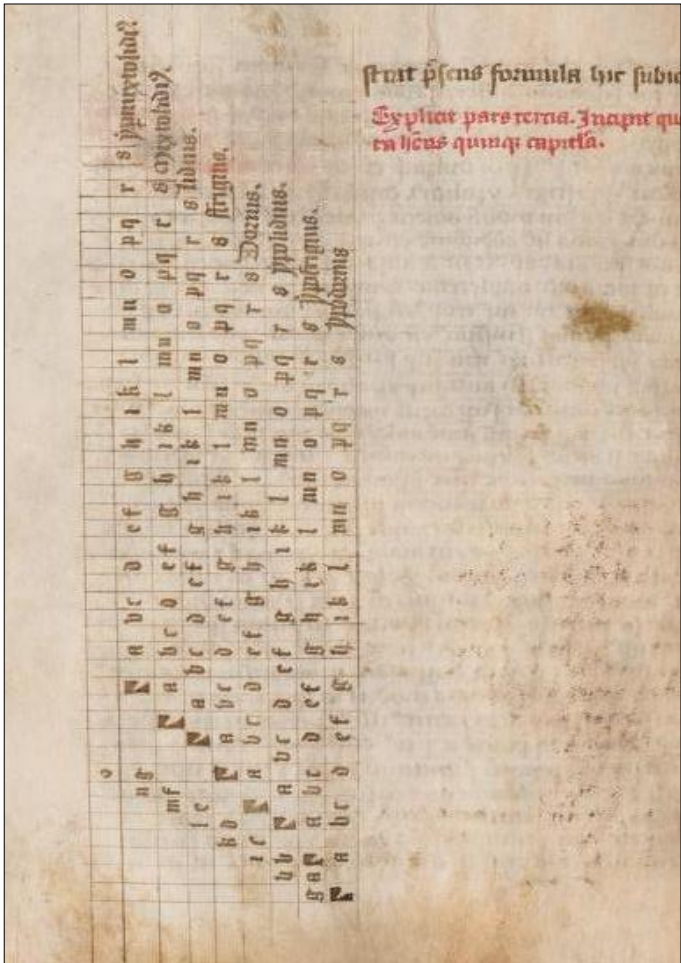
Part I	<i>De inaequalitate numerorum et eorum habitudine</i>
Part II	<i>De inaequalitate sonorum sub proportione numerali et ratione concordiarum</i>
Part III	<i>De compositione instrumentorum musicorum et de tropis</i>
Part IV	<i>De inaequalitate temporum in pedibus quibus metra et rhythmus decurrunt</i>
Part V	<i>De harmonia simplici, id est de plano cantu</i>
Part VI	<i>De harmonia multiplici, id est de organo</i>

¹⁵ Capital initials were the final additions given to manuscripts in the fifteenth century. Derolez, *The Palaeography of Gothic Manuscript Books*, 40.

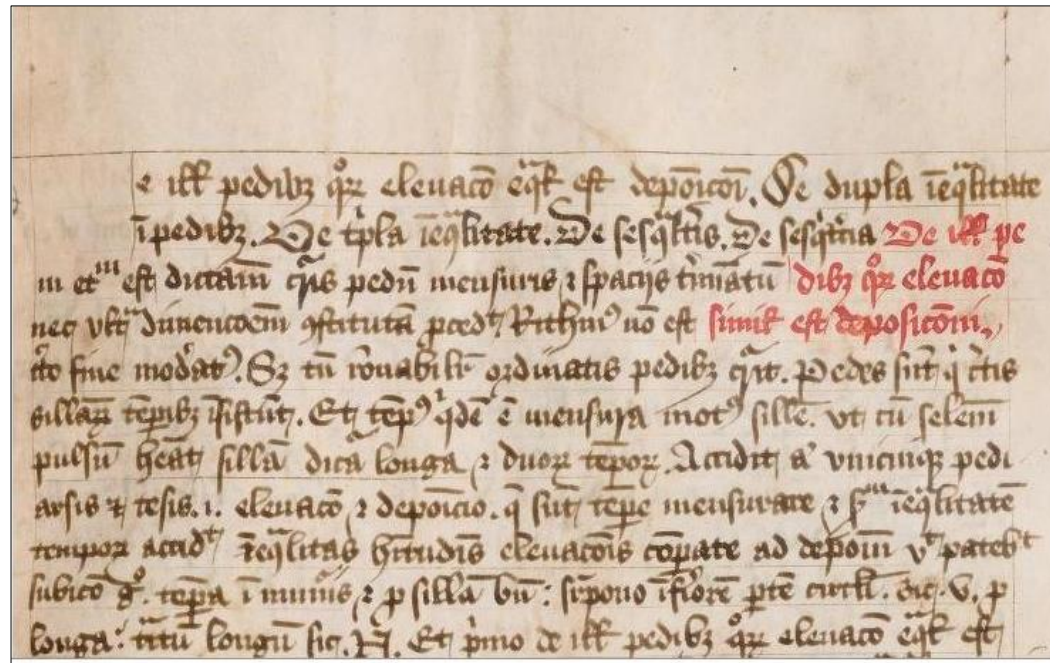
¹⁶ Digitised images of the manuscript can be viewed at <http://parkerweb.stanford.edu>. The relevant text for this image can be found at Walter Odington, *Summa*, 52.

The theoretical discourse can be divided into two equal halves. Parts I through III discuss the nature of numbers, while Parts IV through VI focus on the production of sound. The first half of the treatise mainly contains information which relates to numerical calculations, often accompanied by diagrams for illustrative purpose, while the second half contains musical examples. When the content is observed through textual divisions in this way, a change of hands becomes relevant since they occur exactly at the juxtaposition between shifts of subject found within the text: Scribe 1 was likely to be better at making diagrams while Scribe 2 knew how to notate music. This could suggest that scribal competency may be a key in determining the division of labour.

It is possible to show through certain features found in this manuscript that the two scribes worked simultaneously when writing of the manuscript. Both Scribe 1 and Scribe 2 present the text of the treatise without break from chapter to chapter. A change is indicated through the space for a rubricated initial at the beginning of the chapter. Had Scribe 2 merely continued the transmission of text where Scribe 1 had left off on f. 18v, he or she could begin on the same folio especially because at the end of the second quire sufficient room remains for a continuation of text (see Example 4.3, below).



EXAMPLE 4.3 Empty space at the end of Part III, f. 18v (entire folio) and f. 19r (beginning)¹⁷



¹⁷ GB-Ccc 410, ff. 18v & 19r; the relevant text for this image can be found at Walter Odington, *Summa*, 88-89.

Though the text resulted from careful and considerate planning, its execution reveals that the two scribes did not always accurately copy the text in the four quires. It is possible to detect several errors later corrected by other scribes. Scribes who made corrections will be identified as correction Scribe A and Scribe B.¹⁸ The following four main emendations in *GB-Ccc 410* help to identify how the scribes modified passages and, as will be made clear later, reveal how *GB-Ccc 410* nor *GB-LblAdd. 56486a* could not have been an exemplar for the other.

The correction scribes in *GB-Ccc 410*

1) On folio 1, the text which forms the *Proemium* is filled with mysteriously gaping holes (Example 4.4, below).¹⁹ When Charles Burney saw the manuscript, he believed that the missing words in the text had been left blank with the intention of filling them later with added in red ink:

The first page, only, has been injured by time, and some vacuities have been left by the scribe, which seem intended to have been filled up with red ink.²⁰

Burney must have never attempted to read the script on folio 1 carefully, for such a suggestion is unlikely because the missing words are not important words but rather sometimes parts of words

¹⁸ Other hands can be detected throughout the manuscript, correcting diagrams or crossing out doubled words, but are more difficult to identify.

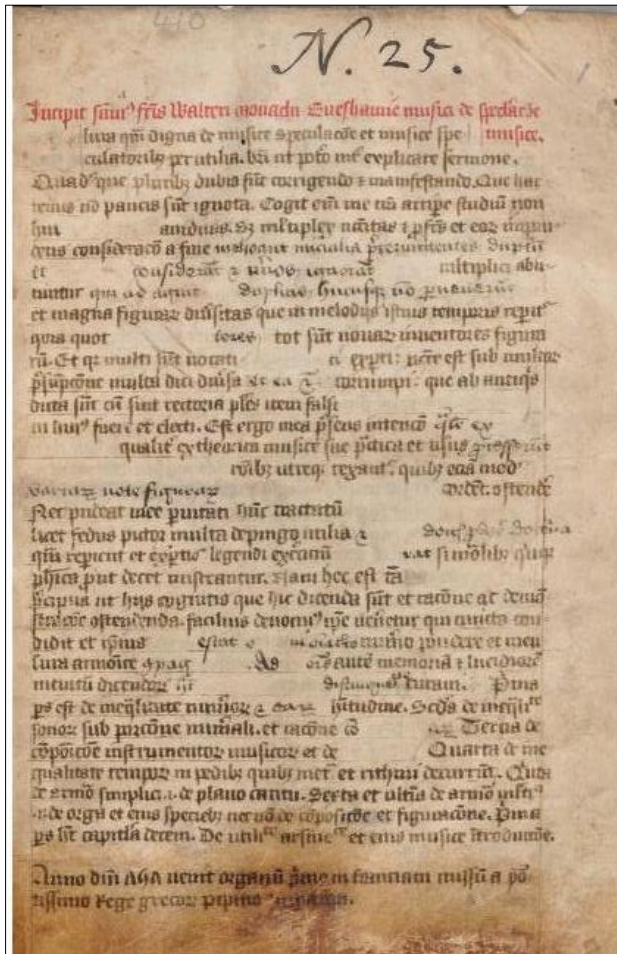
¹⁹ It is in this first folio where one specific correction clarifies an important word for the name of the treatise. Already in the title of the treatise, Scribe 1 makes an error which required correction. The second word found on the incipit is rendered as *summus* (abbreviated as *sūm*⁹ within the text) in the main text. Above the word '*summus*', a scribe, whose hand does not resemble the main scribe (Scribe 1) nor the correction scribe (Scribe A), inserted the letter 'a', correcting the word with an intention for it to be rendered *summa*. Scribe 1 misinterpreted this title on folio 1 and was corrected later by another scribe. The title of the treatise, *De speculatione musicae*, follows the attribution that the work is by Walter, monk and musician of Evesham. The word *summa* in the opening of the treatise can be included in the title to read: "Here begins the Summa on musica speculativa by brother Walter monk of Evesham and musician". Unfortunately, *GB-Ccc 410* is the only source from which the title of Walter of Evesham's treatise can be discerned: no other extant source contains the incipit of the treatise for a comparison or clarification. Frederick Hammond has given the name *Summa de speculatione musicae* for Walter of Evesham's treatise. However, all records from the sixteenth century onwards (including Edmond de Coussemaker's edition) have referred to the treatise simply as *De speculatione musicae*. For the purpose of this study, I have retained the short title, *De speculatione musicae* for ease of reference and clarity.

²⁰ Charles Burney, *A General History of Music* (London, 1957), 516.

and other times missing in the middle of the sentence. Furthermore, according to the first part of this comment (that the first page has been injured by time) Burney thought that the damage to the manuscript occurred in this source rather than from the exemplar. However, it is here that the damage found in the opening folio of *GB-Ccc 410* could not have been caused by time but rather would have already been missing within the exemplar from which Scribe 1 was making his copy.

The words omitted are either completely or partially missing, making it difficult to reconstruct any absolute meaning from the sentences. Though it has been presumed that spaces contain a number of different words (hence filling in the entire space), it is likely that the scribe left too great a space and that only a few words or even letters are missing from the exemplar manuscript. Considering this, then they may be fewer missing words than currently supposed. It is highly possible that the lacunae text was a result of a torn and damaged exemplar manuscript.

In an attempt to make sense of the missing text, correction Scribe A made several attempts to insert words (see Example 4.4, below). The corrected words indicate that the scribe must have either worked from another exemplar which could have been equally damaged, since a full insertion was impossible.



EXAMPLE 4.4 GB-Ccc 410, f. 1r ; Walter Odington, *Summa*, 42.
(<http://parkerweb.stanford.edu>)

GB-Ccc 410, f. 1

Incipit summus fratris Walteri Monachi Eveshamie musici
De speculatione musicæ.

[P]lura quam digna de musice speculatione et musice speculatoribus perutilia brevi, ut potero, nitor explicare sermone, quadamque pluribus dubia sunt corrigendo et manifestando, que hactenus non paucis sunt ignota. Cogit enim me tantum arripere studium non hui. . . . aviditas; Sed multiplex necessitas et profectus et eorum imprudens consideratio a fine {inchoant initialia pretermittentes duplum} et . . . {considerant et numeros ignorant} multiplici abutuntur {qui ad aquet} . . . {duplicis huiusque non pervenerunt}, et magna figurarum diversitas que in melodiis istius temporis reperitur; quia quot []. . . . {tores}, tot sunt novarum inventores figurarum. Et quia multi sunt vocati . . . ci experti, necesse est sub multorum presumptione multa dici diversa {et ea etiam} corrumpi que ab antiquis dicta sunt, cum sint tectoria. Plure item falsi in huius fuere et electi. Est ergo mea presens intentio qualis ex qualiter ex theorica musice sue practice et usus {processerunt} rationibus utrequè texantur. Quibus etiam modis {variarum note figurarum}. cordent ostendere. Nec pudeat mee parvitati hunc tractatum licet fedus pictor multa depingo utilia et . . . {doctis proderit doctrina} quam reperient et expertis legendi exercitium {rat} si moralibus quinque physica prout decet misceantur. Nam hec est tam precipua ut his cognitis que hic dicenda sunt et ratione ac demonstratione ostendenda, facilius denomius ipse veneretur qui cuncta condidit et ipsius {estat o... in omnia certo} numero, pondere et mensura armonice {compact . . . Ad omnis} autem memoriam et lucidiorem intuitum dicendorum {habet} {distingueretur}curavi.

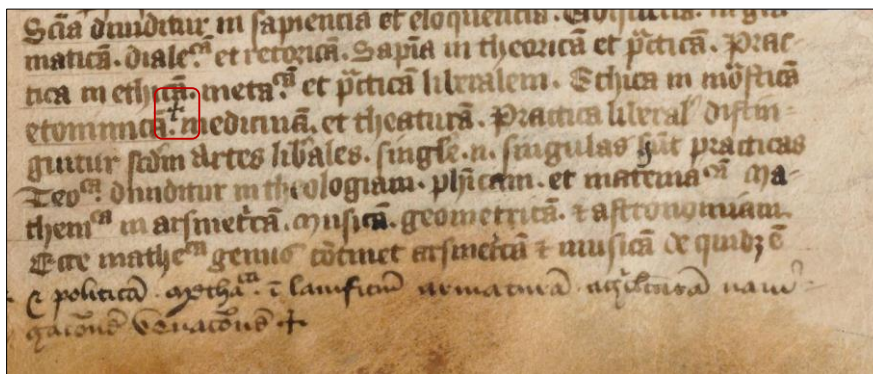
English Translation

Incipit summus Brother Walter, Monk of Music of Evesham, Of the Speculation of Music

What is more than worthy about musical science and what is most advantageous to the investigators of music I endeavour to explain in as short as possible discourse. These are dubious to many, correcting and showing, which until now remain unknown to many. It is not greed which has compelled me to take hold of the great study... But the manifold necessity as well as the progress and consideration of the ignorance. They begin from the end, skipping the beginning/basics and ... and the great diversity of notation in melodies invented in our time; there are so many inventors of new notation. And because there are many [voices?]experience, it is necessary under the presumptions of many all saying different things {and they also} to corrupt that which has been said by the ancients, as though they were plaster.

Many similarly are false..... So therefore it is my present intention just as from the theory of music its practice and use {appear}.....Nor does it shame me of the insignificance of this treatise.... as evident (*videlicet?*) in the faithful painter of many helpful depictions and...{the wise benefit from the instruction} which they find and will gather experience of morals, just as it is fitting to mix five physics. For this is nevertheless [.....] particular that this knowledge and the present statement will declare and be seen through reason and demonstration, ease the devotion itself to slowly restore {.....creator of all} numbers, to weigh and measure harmony{ through all} but on the other hand, to consider memory and illumination of speech

2) Two further errors by Scribe 1 and Scribe 2 are corrected by Scribe B. On folio 2, Scribe B included a sentence which Scribe 1 missed out in his main text. The correction is made through a cross mark found in the main text indicating the missing sentence in the lower margin of the parchment (Example 4.5, below. See red box).²¹



et politica. Mechanicam in lanificium, armaturam, agriculturam, navigationem, venationem

EXAMPLE 4.5 Correction inserted by Scribe B, *GB-Ccc 410* f. 2r²²

Forming a part of the scheme of knowledge, the corrected sentence completes the division of ethics and provides a list of activities for the division of mechanical arts:

Scientia dividitur in sapientiam et eloquentiam; eloquentia in grammaticam, dialecticam et rhetoricam; Sapientia in theoreticam et practicam; Practica in ethicam, metaphysicam, et practicam liberalem. Ethica in monasticam, economicam, +{et politica. Mechanica in lanificium, armaturam, agriculturam, navigationem, venationem,} medicinam et theaturam.²³

Knowledge is divided into wisdom and eloquence; eloquence into grammar, logic and rhetoric; into theoretical and practical wisdom; Practice into ethics,

²¹ This correction was overlooked by previous editors and has never been correctly interpreted. Because of this, the scheme of knowledge given by Hammond in his introduction does not reflect Walter of Evesham's. For a correctly rendered scheme see Chapter 3.

²² The digital image from the Parker Library Website cuts off the lower cross sign in this image.

GB-Ccc 410, f. 2r; the relevant text for this image can be found at Walter Odington, *Summa*, 45-46.

²³ *GB-Ccc 410*, f. 2r; the relevant text for this image can be found at Walter Odington, *Summa*, 45-46.

metaphysics and practical liberal [arts]. Ethics into monasticism, economics, and politics. Mechanics into the making of wool, of armour, agriculture, nautics, hunting, medicine and acting.²⁴

The correction made by Scribe B is significant in two ways: either the scribe was familiar enough with the treatise to be able to recall the missing sentence or was from another source available to him.²⁵

3) On folio 35v, within a chapter which discusses hockets, is a second correction made by the same hand, Scribe B.²⁶ Here the main scribe, Scribe 2, neglected to include a sentence which is supplied by Scribe B (Example 4.7, below). However, the use of indicators to provide the missing section varies. To point out the correction, Scribe B uses the letter 'a' as an indicator, found in the right margin of the parchment (identified in Example 4.6 with red circles). The missing sentence can be located in the lower margin, indicated as so with the same letter 'a' (outside the picture frame of the digitised image of the manuscript, but clearly indicated on the original manuscript). The cross found in the right margin (identified in Example 4.6, below, by a red square box), which resembles the symbol used in the previous example to identify a missing sentence, is here applied for the purpose of indicating that the sentence carries onto the left margin before resuming back to the right. The text in the lowest margin, identified in brackets within the image, is the missing sentence which had been inserted by Scribe B.

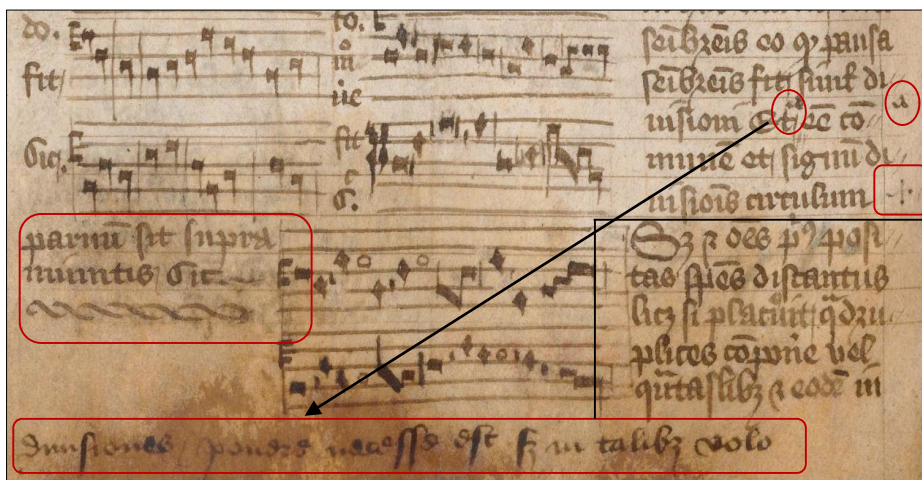
²⁴ See Chapter 3 for a further discussion about Walter's scheme of knowledge.

²⁵ A comparison with the fragment source, *GB-Lbl Add. MS 56486a* confirms that the correction made by Scribe B is what the main scribe was meant to have written in *GB-Ccc 410*.

²⁶ In their editions, Coussemaker and Hammond both misunderstood the layout of this folio when it came to the placement of musical examples which is noted in a footnote by Ernest Sanders. See: Ernest H. Sanders, 'The Medieval Hocket', *French and English Polyphony of the 13th and 14th Centuries* (Aldershot, 1998), V. 246-256. In *GB-Ccc 410*, the musical examples are labeled in the left margins of each example and run along the page from left to right in two columns: *ex.* 'In primo modo ut hic patet: [musical example]', 'In secundo modo ut hic patet: [musical example]' etc. Hammond read the columns from the top to bottom and thus edited the work out of the correct order: *ex.* 'In primo modo ut hic patet: [musical example]', 'Ac in quinto modo fit sic: [musical example]', 'In secundo modo ut hic patet: [musical example]'. See: Walter Odington, *Summa*, 144-145.

Accidit autem dubitatio in hoquetis istiusmodi cum brevis dividitur in tres semibreves, eo quod pausa semibrevis fit simul divisioni, et [divisiones ponere necesse est; sed in talibus volo]²⁷ esse communem; et signum divisionis circulum parvum sit supra minutis sic:²⁸

But an ambiguity occurs in such hockets as this, when the breve is divided into three semibreves, because the semibreve rest occurs together with the sign of division, and divisions have to be put down. However, in such matters I want to conform to common practice, and the sign of division should be a little circle over the minutae thus:



divisiones ponere necesse est; sed in talibus volo

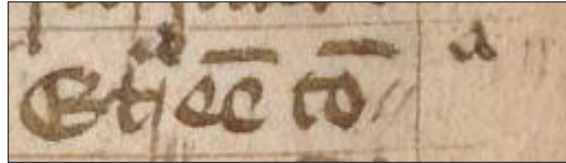
EXAMPLE 4.6 Corrections and clarification symbols found on *GB-Ccc 410* f. 35v²⁹

From this correction, the letter 'a' used as an indicator may be the same hand as that which provided the title correction 'a' in the first folio. If they are the same, then perhaps the correction found on folio 1 was made by Scribe B (Example 4.7, below).

²⁷ This correction made in the lower margin. Emphasis mine.

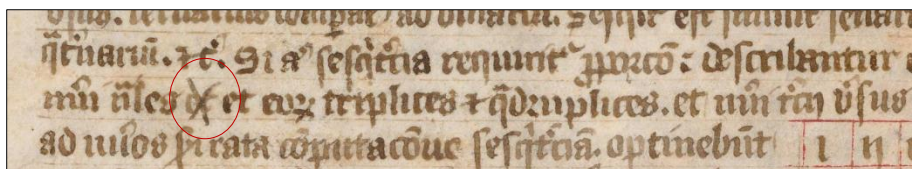
²⁸ *GB-Ccc 410*, f. 35v; the relevant text for this image can be found at Walter Odington, *Summa*, 143.

²⁹ *GB-Ccc 410*, f. 35v; the relevant text for this image can be found at Walter Odington, *Summa*, 143.



EXAMPLE 4.7 Correction scribe B (?), *GB-Ccc 410*, f. 1r & 35v³⁰

4) Although the other corrections made by scribes are more difficult to identify as being one or more persons, the activity is clearly present through a number of different instances: the crossing out of repeated sections (ff. 3v and 4v; see Example 8a, below), insertions of missing numbers or letters in diagrams (f. 12v; see Example 8b, below) and corrections to a ligature which forms the part of a musical example (f. 20v). A number of other small corrections can be found within the manuscript.

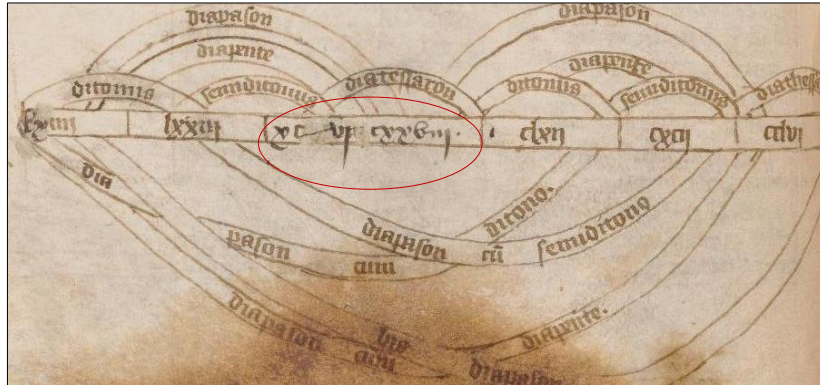


EXAMPLE 4.8a Repetition of *et* cancelled, *GB-Ccc 410* f. 3v³¹

³⁰ *GB-Ccc 410*, f. 1r, 35v.

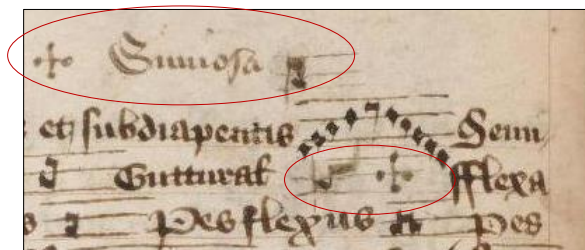
³¹ *GB-Ccc 410*, f. 3v; the relevant text for this image can be found at Walter Odington, *Summa*, 50.

On folio 12v, additional numbers placed in a diagram are missing (Example 4.8b, below).



EXAMPLE 4.8b Correction/addition of numbers, *GB-Ccc 410*, f. 12v³²

Corrections are not exclusive to text or diagrams. One instance by a later scribe includes the correction of a ligature in the upper margins of the folio (Example 4.8c, below).



EXAMPLE 4.8c Correction of ligature, *GB-Ccc 410*, f. 20v³³

Such corrections and markings indicate that the portion of manuscript containing *De speculatione musicae* in *GB-Ccc 410* was read and studied, inviting closer attention for determining

³² *GB-Ccc 410*, f. 12v.

³³ *GB-Ccc 410*, f. 20v.

the readership and use of the manuscript and its relation to the newly added fragment. The inserted words into the missing sections of f. 1r by Scribe A attempted to 'fill in the gaps' where possible. In this case the scribe may not have had access to any other exemplar text that contained a complete version of the incipit; if such a manuscript had been available, better attempts to more completely fill in the missing words could have been possible. Scribe B could have been fulfilling the role of an editor since this scribe corrects the missing sections left behind by both Scribe 1 and Scribe 2. The two major corrections by Scribe B clarify the otherwise miscopied text. What is more, the types of corrections provided by this scribe indicate that he had access either to the exemplar from which Scribe 1 and 2 made their copies, or to other exemplars of *De speculatione musicae*. What is evident is that Scribe B would not have been able to make emendations without either a thorough knowledge of *De speculatione musicae* or the existence and availability of another manuscript which contained the treatise since his transcriptions accurately corrected that which was misrepresented. Thus Scribe B had ample access to either the exemplar or another copy of *De speculatione musicae*. But where might they have gained this knowledge from? Do any of the other manuscripts exhibit indications that they might be the exemplar source?

Two further sources can be consulted to determine the relationship of *GB-Ccc 410*. Owing to its discovery and addition of London, British Library Additional 56486a (*GB-Lbl Add. 56486a*)³⁴ to the British Library in 1971, Frederick Hammond could not consult it for his edition published in 1970. It has remained unstudied to this day. The significance of this fragment for the study of Walter of Evesham's *De speculatione musicae* is that it is one of the only testimonial that at one time the treatise existed as a complete work in multiple copies of manuscripts.

³⁴ For a detailed description and transcription of this manuscript, see Appendix I. The transcription is accompanied by photograph images kindly given to me by Nicolas Bell.

The other manuscript available for comparison is London, British Library Additional 4909 (*GB-LblAdd. 4909*), an eighteenth-century copy of the musical portions of the fourteenth-century manuscript, London, British Library, Cotton Tiberius B IX (*GB-Lbl CT B9*).³⁵ Among the seminal treatises included within the copied tract, four chapters from Walter of Evesham's *De speculatione musicae* can be found. The chapters taken from the treatise are not in succession but rather chapter 11, chapter three, chapter six and chapter seven respectively from Part VI of *De speculatione musicae*.³⁶

Because this source is an eighteenth-century copy of an early manuscript, a comparison of *mise en page* between *GB-Lbl Add. 4909* and *GB-Ccc 410* would be irrelevant. Even a textual comparison here reveals significantly fewer differences. The variants which do occur in the text tend to be spelling variants or slight word deviants which are more likely to have been made when the eighteenth century scribe made the copy. Little can be gained from a comparative study based on codicology.

London, British Library, Additional MS 56486a

The size of British Library Additional MS 56486a (*GB-LblAdd. 56486a*) and Cambridge, Corpus Christi MS 410 (*GB-Ccc 410*) are nearly identical, both small enough to carry in a small satchel (*GB-LblAdd. 56486a*, 180 x 115 mm; *GB-Ccc 410*, 210 x 146 mm). Further observation of the two manuscripts reveals that *GB-LblAdd 56486a*, though heavily damaged from being used

³⁵ For a detailed description and transcription of this manuscript, see Appendix II. At the time that I worked with this manuscript in 2011, the ink was beginning to fade. In order to not lose its content completely, I decided that a transcription of this portion of the manuscript would be crucial to its preservation.

³⁶ The only identification in this manuscript that the contained chapters are from *De speculatione musicae* is an indication 'haec Odingtonus' on f. 105r. It is unclear when or where this reference was originally inserted, since this portion of the Cotton manuscript has been damaged and is no longer legible.

as fly leaves, is in general more elaborately presented, including completed rubricated initials and significant colour coordination among chapter headings.³⁷ A more detailed description of this manuscript can be found in Appendix II. At present, emphasis is placed on the differences in *mise en page* between the two manuscripts. This reveals a number of notable characteristics to suggest that they originate from two different exemplars.

As Table 4.2 shows below, when the chapters are listed in *GB-Ccc 410*, chapters are listed in succession, while in *GB-Lbl Add. 56486a* the relevant chapter numbers are alongside their titles.

TABLE 4.2 Comparison of *GB-Ccc 410* & *GB-Lbl Add. 56486a* (Table of Contents)

GB-Ccc 410, f. 1v

De utilitate ars metricæ et eius musicæ introductione. De axiomatibus. De inæqualitatibus specie que multiplex dicitur. De superparticulari. De superpartiente. De multiplici superparticulari. De multiplici superpartiente. De proportione numerorum qui ab aliis metiuntur. De triplici media proportionalitate. Que inæqualitates quas creant.

GB-Lbl Add. 56486a f. 1r

Capitulum primum. de utilitate arismetice et eius musicæ introductio
 Capitulum .2. de axiomatibus
 Capitulum .3. de inæqualitatibus specie quæ multiplex dicitur
 Capitulum .4. de superparticulari
 Capitulum .5. de superpartiente
 Capitulum .6. de multiplici superparticulari
 Capitulum .7. de multiplici superpartiente
 Capitulum .8. de proportione numerorum qui ab aliis metiuntur
 Capitulum .9. de triplici media proportionalitate
 Capitulum .10. que inæqualitates quas creant

Several points of textual comparison immediately reveal that the two manuscripts differ in the manner of presentation. Noticeable immediately are the chapter numbers in the fragment, a feature not found in *GB-Ccc 410*. This inclusion/exemption of chapter numbers recurs and is consistent

³⁷ Incipit: Prima pars est de inæqualitate numerorum et eorum habitudine.

Explicit: ut hic unus .2.3.4.5.6.7.8.9.10.11.12. binarius ut primus par est primi numeri scilicet unitas est duplus quaternarius qui [secundus] par est dupli (the end breaks off where it would have continued onto f. 3r.)

in both manuscripts: the numbers included by the scribe in *GB-Lbl Add. 56486a* appear in the main text while in *GB-Ccc 410*, only the title is provided for each chapter. Although the scribe in *GB-Lbl Add. 56486a* indicates numbers for each chapter resulting in a clear formulation of information, the format requires more space. By providing only a list of chapters without numbers in *GB-Ccc 410*, this manuscript is, though perhaps more cumbersome to read, more concise. Thus, a choice to render this same information in different a format may have been a conscious one by each scribe.

If either manuscript source was an exemplar for another, the evidence is difficult to find. It has already been shown above that scribal errors in the scheme of knowledge from *GB-Ccc 410*, are corrected by a cross mark (+) in the lower margin. To make this correction, Scribe 1 of *GB-Ccc 410* could have used *GB-Lbl Add. 56486a* as an exemplar. If this was the case it would have been an entire line, rather than in the middle portion of it. Yet, it is unlikely that he was copying from *GB-Lbl Add. 56486a*, because the two sources have different breaks in lines at this point.

Table 4.3 below compares a section from *GB-Ccc 410* with *GB-Lbl Add. 56486a* which helps to show this.

TABLE 4.3 Textual comparison of *GB-Ccc 410* & *GB-Lbl Add. 56486a* (Textual)

GB-Ccc 410, f. 2

Ista igitur scientia scilicet de numero tam per se quam relato ad sonum sic est secundum Alardi introducta: scientia dividitur in sapientiam et eloquentiam; eloquentia, in grammaticam, dialecticam et rhetoricam; Sapientia, in theoreticam et practicam; Practica, in ethicam, metaphysicam, et practicam liberalem. Ethica, in monasticam, economicam, +[et politica. Mechanicam in lanificium, armaturam, agriculturam, navigationem, venationem]³⁸ medicinam et theaturam. Practica liberalis distinguitur secundum artes liberales. Singule enim singulas habent practicas. Theorica dividitur in theologiam, physicam, et mathematicam. Mathematica in ars metricam, musicam, geometricam, et astronomicam. Ecce mathematica genus continet ars metricum et musicum, de quibus est præsens intentio.

GB-Lbl 56486a, f. 2

Ista igitur scientia scilicet de numero tam per se quam relato ad sonum sic est secundum Alardum introducta. Scientia dividitur in sapientiam et eloquentiam. Eloquentia in gramaticam dialecticam retoricam. Sapientia in theoreticam
Practica in ethica metiphisicam
et practicam liberalem. Ethica in monasticam economicam politica metephisicam in lanificiam armaturam agriculturam navigationem venationem medicinam et theaturam. Practica liberalis distinguitur secundum artes liberales. Singule enim singulas habent practicas
Theorica dividitur in
theologicam phisicam et mathematicam.
Mathematica in arisine musicam geologicam astronomicam. Ecce mathematica genus continet arisneticam et musicam de quibus est presens intentio.

TABLE 4.4 Comparison of *GB-Ccc 410* & *GB-Lbl Add. 56486a* (Corrections)

MANUSCRIPT

TEXT

GB-Ccc 410

f. 2r, lines 29-31

[29] tica, in ethicam, metaphysicam, et practicam liberalem. Ethica, in monasticam,
[30] economicam,+ medicinam et theaturam. Practica liberalis distin
[31] guitur secundum artes liberales. Singule enim singulas habent practicas.

*GB-Ccc 410*f. 2r, [lower page margin]
lower margin

+et politica. Mechanicam in lanificium, armaturam, agriculturam, navigationem, venationem

GB-Lbl Add. 56486a

f. 2r, lines 7-10

[7] metephisicam et practicam liberalem. Ethica in monasticam
[8] economicam poleticam metephisicam in lanificium ar
[9] maturam agriculturam navigationem venationem me
[10] dicinam et theaturam. Practica liberalis distinguitur

³⁸ Added by the correction scribe identified as Scribe B above.

The corrected sentence of the missing text, according to its rendition in *GB-Lbl Add. 56486a*, begins in the middle of line 8 and ends in the middle of line 10 as can be seen in Table 4.4 below.

The key point to show that the two texts written independent of each other can be found in two words. In *GB-Ccc 410*, the missing portion in line 30 is substantial, enough to be that of an entire sentence, and in the same place in *GB-Lbl Add. 56486a*, two sentences. Had Scribe 1 of *GB-Ccc 410* used *GB-Lbl Add. 56486a* as an exemplar, and if it was from this source that he skipped the sentence, the break between *economicam* and *medicinam* is unusual, if not highly improbable. This is even more so through the split of the word *medicinam* between line 9 and line 10 in *GB-Lbl Add. 56486a*, which is found complete in the main text of *GB-Ccc 410*.

That the two sources are independent of each other can be confirmed further through variants of diagrams found in *GB-Ccc 410* and *GB-Lbl Add. 56486a*. The first diagram *De speculatione musicae* is a circular diagram based on numerical proportions from Book 12 of Euclid's *Elements*.³⁹ The text which accompanies the diagram discusses the relation of two spheres to show an eightfold relation, labeled in the diagram below as C and D:

ut, si diametri a sit duplus a diametrum b, spera c ad speram d sit octupla, vero duplatriplicata octuplam facit habitudinem, et huiusmodi est armonia predicta:⁴⁰

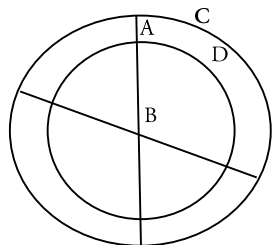
So that, if diameter b is twice as long as diameter a, sphere c is eight times sphere d (in volume) in eightfold relation; but the double tripled [i.e. 2³] produces an eightfold relation, and such is the afore-mentioned harmony.

The diagram further explaining this text is nearly identical in both manuscripts (Example 4.9, below).

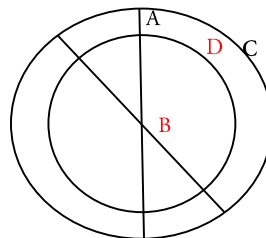
³⁹ See Appendix III for a list of diagrams included in *GB-Ccc 410*.

⁴⁰ *GB-Ccc 410*, f. 1v; the relevant text for this image can be found at Walter Odington, *Summa*, 44.

CORPUS CHRISTI 410, f. 1v

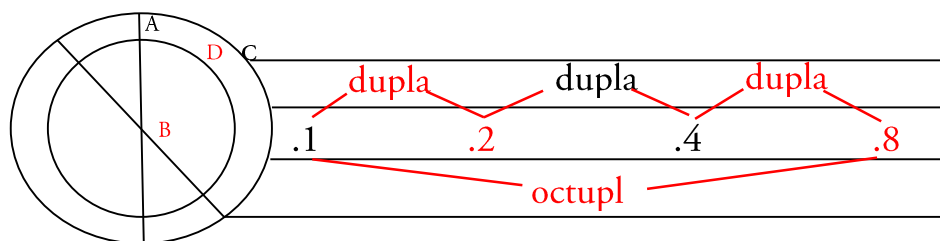


ADDITIONAL 56486a, f. 1v



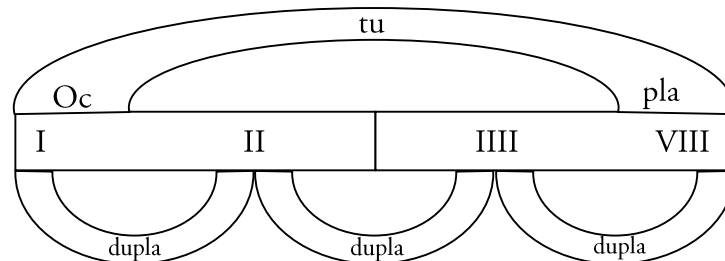
EXAMPLE 4.9 Diagram of spheres

The variant between the two sources can be found in the second diagram where *GB-Lbl Add. 56486a* portrays an image that varies from the diagram in *GB-Ccc 410*. This diagram, reproduced in Example 4.10 below, contains four lines with the numbers 1, 2, 4, and 8 through its central space.

EXAMPLE 4.10 Diagram I, *GB-Lbl Add. 56486a*, f. 1r

Above this central axis are the words *dupla*, showing that 2 is 1^2 , 4 is 2^2 and 8 is 4^2 . The result, the double triple (*duplatriplicata*), is the eight-fold (*octuple*) proportion. The text informs the reader that numerical proportions are applicable to musical proportions.

The corresponding diagram in *GB-Ccc 410* is strikingly different (Example 4.11, below).



EXAMPLE 4.11 Diagram I, *GB-Ccc 410* f. 1v

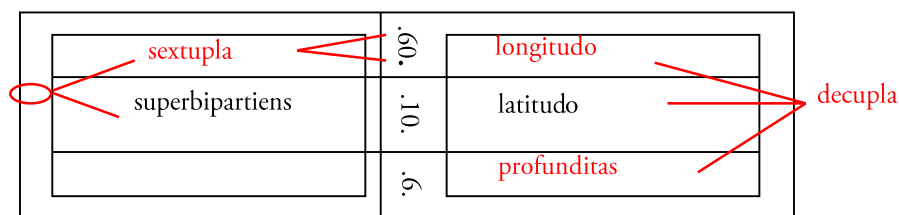
Unlike the diagram in *GB-Lbl Add. 56486a* where the first two diagrams are conjoined, the diagram in *GB-Ccc 410* is separated from the circular diagram found in Example 4.9 above. Yet in its central axis, as in *GB-Lbl Add. 56486a*, are the numbers 1, 2, 4 and 8. Here the duplicated proportions appear beneath the numbers while the eightfold proportion is placed above. The inverted diagrams lead readers to retain information in two different ways. The diagram in Example 10 points out the importance of *duplatriplicata* more significantly as this is where the eye is initially drawn while the diagram in Example 4.11 above reveals the significance of the *octupla* proportion.

The difference in diagrams is more noticeable in the section immediately following this section. The text which the diagrams expound upon continues to discuss the various proportional relations and applies it to the dimensions of the human body.

Corporis enim humani latitudo sexta pars est longitudinis in proportione sextupla, profunditas vero decima in proportione decupla. Latitudinis autem ad profunditatem est proportio superbipartiens tertias qui duos super tertis exuberant.⁴¹

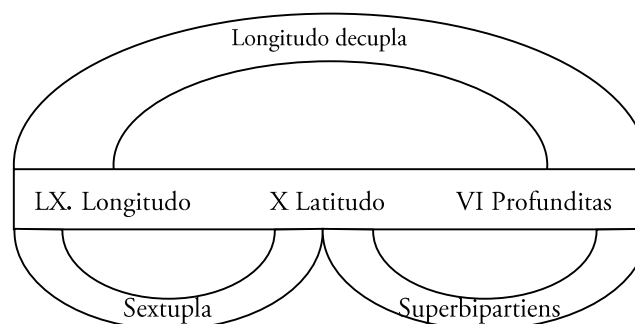
For the width of the human body is the sixth part of its length in sixfold proportion, but the depth is the tenth part in tenfold proportion. But the proportion between width and depth is superbipartiens tertias [i.e. triple proportion plus two thirds or 5:3], which exceed two over thirds.

The diagram in *GB-LblAdd. 56486a* shows proportional relationships within a square (Example 4.12, below). In a box to the left are the proportions and to the right the expanse to be measured. The central axis in this diagram contains the numbers representing the width, height and depth of the human body.



EXAMPLE 4.12 Diagram II, *GB-LblAdd. 56486a*, f. 1v

The diagram in *GB-Ccc 410* represents the same information in a different diagram (Example 4.13, below).



EXAMPLE 4.13 *GB-Ccc 410*, f. 2r

⁴¹ *GB-Ccc 410*, f. 1v; the relevant text for this image can be found at Walter Odington, *Summa*, 44.

Here, the length, width and depth of the body which was originally in the right-hand box is placed in the central axis. The proportions between the two are represented in the one upper and two lower arches.

The difference in diagrams here cannot be explained merely as a personal difference of opinion by either scribe. Thus, a further in-depth discussion of the use and purpose of diagrams in general will be made later (Chapter 5).

A new schema of manuscripts

The difference in textual layout and diagrams between the two manuscripts here indicate that *GB-Lbl Add. 56486a* was not used as an exemplar for the creation of *GB-Ccc 410* nor was the reverse possible, for the following reasons: 1) the layout of manuscripts reveal significantly different presentations. In the beginning of the treatise, chapters are listed vertically in *GB-Lbl Add. 56486a* while in *GB-Ccc 410*, they are presented as a list. Furthermore, in *GB-Lbl Add. 56486a*, chapters are identified through Arabic numbers and continue to do so in the main text; *GB-Ccc 410* simply gives the title of the chapter for identification.⁴² 2) The main scribe's error in *GB-Ccc 410* indicates that *GB-Lbl Add. 56486a* was not used as an exemplar. Unless the main scribe of *GB-Ccc 410* had taken some measures of creativity and interpretation from the material presented in *GB-Lbl Add. 56486a*, it is not likely that he was copying from *GB-Lbl Add. 56486a*. This allows for *GB-Lbl Add. 56486a* to be taken into consideration as an unrelated source to *GB-Ccc 410*.

⁴² Arabic numerals gradually integrated into use in the Middle Ages, especially from the twelfth century onwards, though not without a clear indication of difficulty by scribes. Sometimes, Arabic numerals were used in combination with Roman numerals (as can be found especially in diagrams in *GB-Ccc 410*, 3v, 4v found in Appendix III). On the use of the practice of combined numbers see: Bischoff, *Latin Palaeography*, 176-177.

The new insight gained from *GB-Lbl Add. 56486a* leads to a reconsideration of the transmission history of *De speculatione musicae*.

Considering the manuscript sources in this chapter offers the opportunity to understand the availability of manuscripts to readers in medieval England and what sources may have been lost over time. Earlier it was shown that English authors of music theory read English treatises (Chapter 3). Whether or not the sources investigated had been consulted is difficult to tell. The later has been a point of concern for nearly all musicologists who wish to recreate an accurate picture of a distant historical past. Taking the problem of understanding extant music manuscripts and what could have been lost over time, Michael Scott Cuthbert provides three possibilities for consideration:

First are the unwritten traditions of music – either improvised or fixed but transmitted only or mainly in sound. Second are the lost musical manuscripts known only through library records, fragmentary remains, or gaps in constructed stemma. Finally, there are the pieces that once were written down but have been lost through the ages.⁴³

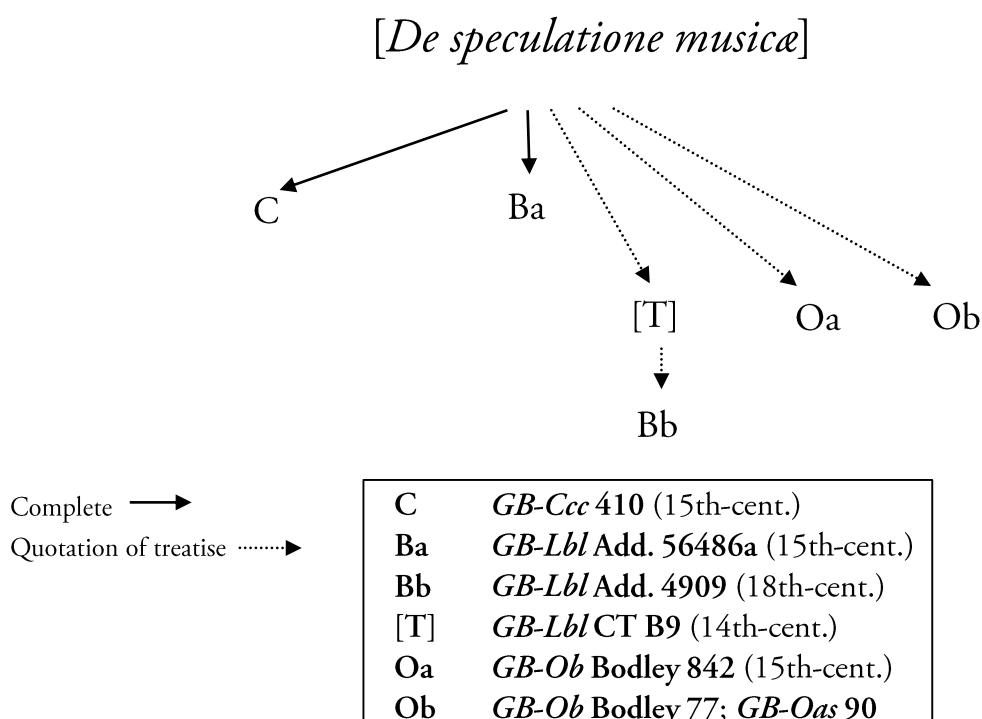
Though Cuthbert here only refers to musical manuscripts (making his first claim inapplicable to textual transmissions) the concept of lost sources can be applied to literary manuscripts as well. Cuthbert's objective is to test the theory that a vast amount of missing manuscripts exist to test the likelihood of this assumption.⁴⁴ For our purpose here, it is the conclusion that, at least for Italian Trecento fragments, the number of missing sources is more likely to be fewer than what has been

⁴³ Michael Scott Cuthbert, 'Tipping the Iceberg: Missing Italian Polyphony from the Age of the Schism,' *Musica Disciplina*, vol. 54 (2009), 39-74, at 40.

⁴⁴ Included in an investigation of poetry are indices of lost manuscripts, computer-based statistical analysis, and recent discoveries of new fragments.

considered, offering musicologists the hope that perhaps what survives constitutes for up to three-quarters of what was every produced in the fourteenth century.⁴⁵

If the same can be said about English manuscripts containing Walter's *De speculatione musicae*, then the addition of the fragment to what already exists brings us closer to a more complete picture to understand the availability of the treatise.



EXAMPLE 4.14 The manuscript stemma of *De speculatione musicae*

The stemma of manuscripts in Example 4.14, above, sketches the hypothetical transmission of Walter of Evesham's *De speculatione musicae*. It includes all sources which mention the treatise as well as modern editions and translations. Notably, the earliest extant copy postdates

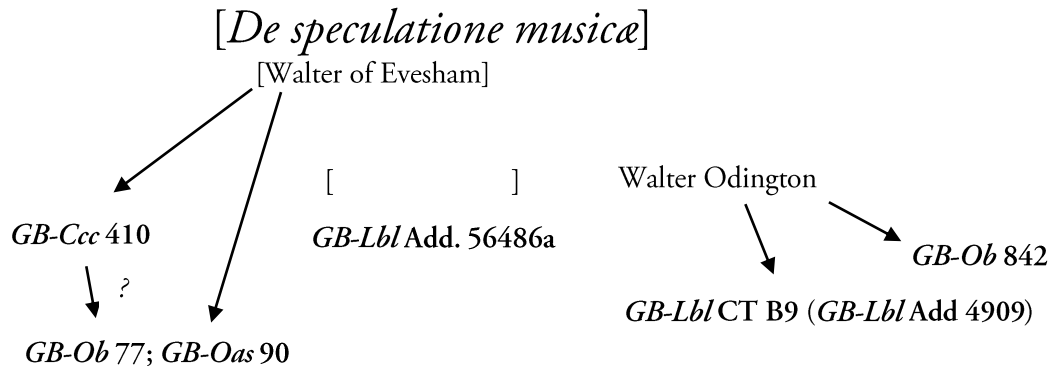
⁴⁵ Cuthbert, 'Tipping the Iceberg', 59.

the creation of the treatise by at least a century. However, *GB-Ccc 410* is the only complete copy of the treatise, although *GB-Lbl Add. 56486a* are fragments of what must have been a complete copy. In the fifteenth-century, partial sections of *De speculatione musicae* are found transmitted in two manuscripts: *GB-Lbl CT B9* and *GB-Ob 842*. *GB-Lbl CT B9* was burned in the fire of 1731 but the musical portion of this manuscript can be found in *GB-Lbl Add. 4909*. *GB-Ob 842* contains the treatise *Breviarium regulare musicae* by Willelmus who takes several quotations from *De speculatione musicae*.⁴⁶ The treatise, *Commentum in musicam Boethii*, found in two sources, *GB-Ob 77* and *GB-Oas 90* mentions Odington and his contribution to arithmetic as applied to music.⁴⁷

Specific relationships found within this stemma will benefit from a smaller breakdown of sources. It is suggested here that *GB-Ccc 410* and *GB-Lbl Add. 56486a* could not be copied from the same exemplar. This has already been demonstrated through the use of diagrams above and specific layout. It is significant that two sources explicitly refer to ‘Walter Odington’, rather than to ‘Walter of Evesham’, as the author of the treatise from which they extracted the text of *De speculatione musicae*. It is likely that Willelmus was not copying from *GB-Ccc 410* when he wrote his *Breviarium musicae* now found in *GB-Ob Bodley 842*. This manuscript exemplar, then, is another source which must be taken into consideration. The stemma now offers the opportunity to reconstruct a possible transmission history.

⁴⁶ The exact text that he quotes and its significance is the subject of the following chapter, chapter 4, of this present study. Willelmus, MS. Oxford, Bodley 842: *Breviarium regulare musicae*; MS British Museum Royal 12. C. VI: *Tractatus de figuris sive de notis*; Torkesey: *Declaratio trianguli et scuti* Corpus scriptorum de musica, 12 ([Rome]: American Institute of Musicology, 1966), 15-31.

⁴⁷ 22 references from Walter’s treatise have been identified by Matthias Hochadel in *Commentum Oxoniense*. For more comment on this treatise see Chapter 3.



EXAMPLE 4.15 The transmission history of *De speculatione musica*

The stemma in Example 4.15 above shows at the head a missing exemplar. It is possible to decipher three different branches of manuscripts: one with the author named as Walter of Evesham Abbey, one as Walter Odington. The first is presumed to be the manuscript from which *GB-Ccc 410* was copied. It is possible that the quotations and references found in the *Commentum Oxoniense* (contained in both *GB-Ob 77* and *GB-Oas 90*) was copied directly from the same exemplar manuscript or perhaps from *GB-Ccc 410* (the later probability is identified in Example 4.15 with a question mark). The second is perhaps where the Cotton manuscript and Willelmus. No attribution of authorship can be found in *GB-LblAdd. 56486a*. However, that it stems from a different written tradition has been shown, and should be considered to be from different source. The third stemma are sources which contain variants from *GB-Ccc 410* in text and in attribution. It is not possible that *GB-Ob 842* could have been copied from *GB-Lbl CT B9* since this refers to portions of the treatise which do not exist in the later. For this reason, it is safe to show that two,

though stemming from the same exemplar which is now lost, have little relation to each other. The overall picture reveals at least three different transmission styles for Walter's *De speculatione musicae*.

To conclude: the importance of manuscript studies was revealed earlier when it was shown how crucial information on identifying the author of *De speculatione musicae* was made by revisiting primary sources (Chapter 2). The present chapter has taken the sources which contain Walter of Evesham's treatise and examined their interconnections to see if further clarification for the use of manuscripts might be achieved.

The study of sources has offered a different type of information for the transmission of music theory in England. Firstly, it offers the chance for a close study of scribal behaviour has shown that correction scribes either a) had another exemplar source from which corrections could have been made or b) knew the treatise well enough to make corrections from memory. Secondly, a comparative study of the fragment with the main source indicates a that neither became an exemplar source for the other. This suggests that *De speculatione musicae* was transmitted differently, sometimes even revealing personal changes by scribes. Finally, the investigation has offered a chance to consider how many manuscript copies could have existed for consultation. Perhaps fewer existed. If so, then the new stemmas reveals missing two or three exemplar sources. What is suggested in the above study is that the manuscript source for *De speculatione musicae* was not shelved after creation but rather read, used and corrected by several different persons.

GB-Ccc 410 has been the only source consulted by editors and scholars. With the addition of *GB-Lbl Add. 56486a*, it is now clear that the treatise was copied in several different ways. The one variant diagram in this source, however, is unusual. Chapter 5 will investigate the use and readers of diagrams in medieval England to determine if this irregularity is of any significance.

A MILIEU OF VISUAL TRANSMISSION

DIAGRAMS, OFTEN REFERRED TO AS *FIGURA* within medieval texts, were, with little doubt included to clarify complex ideas.¹ Open any manuscript of music theory and one finds arches, boxes, and illustrative images in sometimes colourful other times plain ink throughout its folios. In fact their presence is unavoidable. Yet, unlike other components within music treatises, such as compositional style or principles of notation, the way in which medieval theorists visually represented their ideas is still little understood. The purpose for this chapter is to highlight certain aspects of diagrams and visual aids found in treatises to define how they could have been used. This will in turn complement the

¹ Another word often used for diagram is *descriptio*. In his study and translation of Boethius' *De institutione musica*, Calvin Bower points out that Boethius used this term repeatedly whenever he referred to representational diagrams. The Latin word *descriptio* literally means 'a representation.' According to the Oxford English Dictionary the word 'diagram' implies an illustrative figure that gives a general outline, serving to illustrate a definition or statement. 'Diagram, *n*', OED Online, Oxford University Press (www.oed.com) [Last accessed 3 April 2012].

investigation of the intellectual milieu of fourteenth-century English treatises by looking beyond textual comparison.

Toward an understanding of visual aids

A brief look at modern scholarship reveals the variety of purpose and use for diagrams in medieval texts. Mary Carruthers has shown that diagrams served mnemonic purposes which embrace a twofold function in the Middle Ages: storing memory and recalling it.² Their purpose was largely pedagogical. Yet, for the medieval reader they were at the same time devices through which contemplation of subject, especially a spiritual subject, could be made. Images in medieval texts of devotion were powerful mediums of communication. At the basic level, Carruthers refers to images, diagrams and general manuscript *mise en page* as having two different types of use; what she calls *divisio* and *compositio*.³ The latter term is used to illustrate the suggested contemplation of spiritual matter which led the believer to conjure up meditative images which could be recalled and created in one's own mind.⁴

In recent years, the way in which medieval theorists visually represent their ideas through *figura* in *quadrivial* texts have increasingly invited scholarly attention more broadly. An article by Barbara Obrist shows how medieval wind diagrams are based on a tradition stemming from Isidore of Seville's *De rerum natura*.⁵ Anna Somfai examines the use of diagrams within Calcidius' *Commentary* to illustrate how a reader understood mathematical ideas.⁶ In a study of astronomical

² Mary Carruthers, *The Book of Memory: A study of Memory in Medieval Culture*, second edition (Cambridge, 2008), 332.

³ *Ibid.*, 332.

⁴ *Ibid.*, 335.

⁵ Barbara Obrist, 'Wind Diagrams and Medieval Cosmology' *Speculum*, vol. 72 (1997), 33-84.

⁶ Anna Somfai, 'Calcidius' *Commentary* on Plato's *Timaeus* and its Place in the Commentary Tradition: The Concept of *Analogia* in Text and Diagrams,' *Philosophy, Science and Exegesis in Greek, Arabic and Latin Commentaries*, ed. P. Adamson, H. Baltussen, M. W. F. Stone, in 2 vols, (*Supplement to the Bulletin of the Institute of Classic Studies* 83), 1-2 (London, 2004), vol. 1, 203-220, at 208-213.

diagrams, science historians Bruce Eastwood and Gerd Grasshoff reveal the importance of visual images in astronomical treatises, concluding that astronomical diagrams were included to explain what words were only partially capable of conveying.⁷ Musicologists have also provided a context for diagrams. Nancy Phillips discusses the importance of diagrams in treatises in the *Musica and Scolica enciriadis*⁸ while Susan Rankin shows how the idea of celestial harmonies was a matter of curiosity for medieval theorists, illustrating by exploring through diagrams in ninth-century interpretations of the moving celestial bodies.⁹ Finally, Elizabeth Mellon reveals how diagrams in Boethius' *De institutione musica* use lines, rectangles, circles and words to propose that medieval *figura* in his treatise were the primary means through which complex and sometimes impossible aural sonorities – such as the celestial harmonies – could be ‘visually’ heard.¹⁰

⁷ Bruce Eastwood & Gerd Grasshoff, *Planetary Diagrams for Roman Astronomy in Medieval Europe c.a. 800-1500* (Philadelphia, 2004), 6. Though in general diagrams are considered important, some manuscripts reveal exceptions to this. In some medieval manuscripts containing Boethius' *De institutione musica*, diagrams can sometimes survive independent from texts while text can survive without diagrams. For example, Oxford, Bodleian Library, Auct MS F.3.13 (Bower no. 69 in Bower, Calvin, 'Boethius' *De institutione musica*: A Handlist of Manuscripts,' *Scriptorium*, 42, (1988), 205-251) is a thirteenth-century English manuscript which is thought to have been compiled at St. Mary's Abbey Kenilworth. Works preserved in this manuscript include Euclid's *Geometria*, Ptolemy's *Centiloquium*, astronomical treatises, and Boethius's *De institutione musica*. The manuscript was not completed in its entirety since the diagrams from *De institutione musica* are missing. Oxford, Bodleian Library, Seld. Supra MS 25 (Bower no. 71, *Op cit.*) contains two separate works of Boethius's *De institutione musica*. In the first (ff. 45r-75v), the diagrams have been inserted by an alternative hand from the scribe who inserted the text. The scribe who provided the diagrams, however, was the one who included indications for chapter headings. In the second copy of *De institutione musica* (ff. 76r-92r), no diagrams exist, nor is space made within which they may be inserted. The two manuscripts alone already present different possibilities to consider for a study of the place of diagrams in treatises: 1) diagrams could be inserted into a treatise at a later point in the creation of a manuscript; 2) it is possible that texts which normally should include diagrams as part of a demonstration can exist without them; 3) diagrams can be parts of treatises that later scholars and readers inserted.

⁸ Though Raymond Erickson acknowledges that diagrams were part of the pedagogical objective of the treatise, he does not provide further insight for how the diagrams were important within an educational context. Erickson does discuss how 'ladder' diagrams in the *Scolica enchiriadis* help to demonstrate the placement on the semitones and that organum diagrams could have been used for both didactic and singing purposes (*Musica Enchiriadis and Scolica Enchiriadis*, trans. Raymond Erickson, ed. Claude V. Palisca [New Haven, 1995], xxiv). See also: Nancy Phillips, *Musica and scolica enchiriadis: The literary, theoretical and musical sources* (Ph.D diss., New York, 1984), 201.

⁹ Susan Rankin, 'Naturalis concordia vocum cum planetis: Conceptualizing the Harmony of the Spheres in the Early Middle Ages,' *Citation and Authority in Medieval and Renaissance Musical Culture: Learning from the Learned, Studies in Medieval and Renaissance Music (Essays in honour of Margaret Bent)* ed. Suzannah Clark and Elizabeth Eva Leach (Woodbridge, 2005), 3-19.

¹⁰ Elizabeth Mellon, 'Inscribing Sound: Medieval Remakings of Boethius's "De institutione musica",' Ph.D diss. (University of Pennsylvania, 2011), 251-252.

Most importantly, medieval diagrams were placed among text to conjure up a mental image and to draw onto what had been memorised before. Yet, as diagrams were commonly used within the medieval classroom, their purpose remained largely pedagogical, initiating the reader to recollect, comprehend and ponder what had been instructed.

This pedagogical component of diagrams is most important when considering the use of diagrams in music treatises for it is not uncommon to find theorists referring to diagrams to more clearly illustrate where words are deficient. Perhaps the best use of diagrams to accompany learning, and certainly some of the first examples in music history, are the Carolingian theorists who included uniquely designed pedagogical diagrams within their music treatises. A brief exploration here will explain further why these diagrams were essential to an understanding of the text.

Carolingian theorists included specially designed pedagogical diagrams within their music treatises. Though their writings precede the writings of the theorists currently in discussion, they offer some insight into some of the first usage of diagrams to give an impression for how these texts could have been read and used even in later centuries. What is more, the theorists that I discuss here are especially concerned with the way in which diagrams should be depicted, taking care to note how they wished their images to appear within the text of their theoretical writings. Hucbald of St Amand, for example, nearly always included a brief comment about a diagram to complement the text of his *De harmonica institutione*.¹¹ His intention was to provide a clarification of that which was already presented in the text.

In one such passage, Hucbald instructs his readers of the order of strings, listing them carefully in order so as not to confuse their arrangement:

¹¹ Hucbald, *De harmonica institutione*, *Scriptores ecclesiastici de musica sacra potissimum*, ed. Martin Gerbert (St. Blaise, 1784; reprint, Hildesheim, 1963), 1:103-25; Warren Babb trans., *Hucbald, Guido, and John on music: three medieval treatises* (New Haven, 1978).

Ut autem plenaria eorum series ad cognitionem facilius veniat, jam nunc cunctarum nomina ex ordine chordarum sunt apponenda; quarum procul dubio sonos, puncta in superioribus jam distincte locata ordinibus, ad purum redire comprobantur.¹²

To make the whole series easier to understand, the names of all the strings will here be set down in order. It is acknowledged beyond question that the notes *already ranged clearly in the diagrams above* represent the sounds of these strings absolutely (emphasis mine).¹³

But these diagrams were only useful if they were rendered correctly. Elsewhere, Hucbald was concerned for the accuracy of a particular visual representation, mentioning the importance of the scribe to accurately portray a diagram:

Has autem intercapedines hae lineae, diligenter tamen a transcriptore earum spatiis observatis, ostendere possint.¹⁴

The following diagram may set forth these intervals, *provided their distances are scrupulously observed by the copyist* (emphasis mine).¹⁵

Such careful depiction of image was in line with what later theorists also consider to be important, as can also be found in the writing of Guido of Arezzo. In his *Micrologus*, which can be found copied in many manuscripts and is presumed to have been studied by theorists, it is unavoidable to notice how the use of diagrams plays an important role in the instruction of music:

Qua de re et descriptionem subiecimus, quo facilius per oculos via sit.¹⁶

We have appended a diagram of this topic, so that one can more easily get the picture of it.¹⁷

¹² J.P. Migne ed., *Patrologia cursus completus, series latina* (Paris, 1844-1904), 132:918.

¹³ Babb, *Hucbald, Guido, and John on Music*, 32.

¹⁴ Migne, *Patrologia cursus completus, series latina*, 132:909.

¹⁵ Babb, *Hucbald, Guido, and John on Music*, 17.

¹⁶ Guido of Arezzo, *Micrologus*, 2:18.

¹⁷ Babb, *Hucbald, Guido, and John on Music*, 73.

As stated, diagrams are offered to conjure up a mental image to enhance the implied text, easing the complex ideas to be discussed later. For one diagram, relationships between different pitches that make combinations of intervallic distances more comprehensible are provided.¹⁸

When diagrams are included within medieval texts, they needed to be recognisable and comprehensive.¹⁹ In this vein, it was important that music theorists conformed to a normality whereby readers might visually understand what was being expounded upon. Yet what is evident in the texts examined above is that diagrams were often created for a specific purpose, sometimes displaying originality. Grounded on these comments, it is possible to suggest that a correct depiction of any designated diagram was considered to be vital by Carolingian theorists since these diagrams were considered to be critical for an understanding of what had been presented in the preceding text. If the scribe had misrepresented a diagram, its purpose as a means through which an accurate demonstration could be made is lost.

By the fourteenth century, this complacency towards uniformity may have been waning. At least this is the case with the diagrams found in the manuscripts for Walter's *De speculatione musicae*. Instead, what seems to be happening with the diagrams in these manuscripts is a personalisation of interpretation.

The variant diagrams found in the fragment source British Library, Additional 56486a (*GB-LblAdd. 56486a*), already discussed briefly in Chapter 4, are examples of such individualised diagram.²⁰ The end of the first chapter in Part I of *De speculatione musicae* concludes an introduction to arithmetic and music. It is in this chapter that mathematical proportions of all

¹⁸ See: Guido of Arezzo, *Micrologus*, 2:9. Babb, *Hucbald, Guido, and John on Music*, 65.

¹⁹ I am grateful to Phillip Weller for confirming to me in a personal conversation that diagrams were often uniform when placed within texts so that they could be recognised by readers who were familiar with reading and understanding information through a visual medium.

²⁰ See Chapter 4.

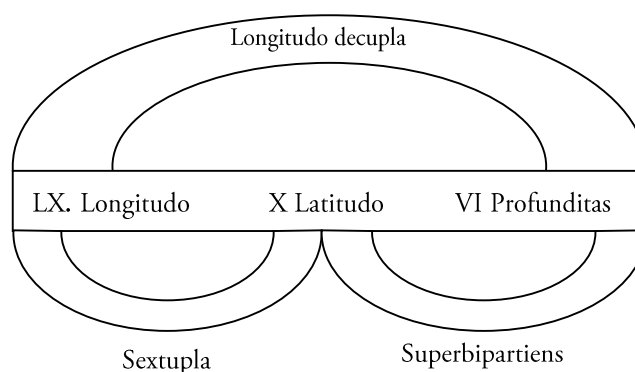
sorts are given as examples which, in turn, will relate later in the treatise to the introduction of musical proportions. One example given is the proportion of time: the six stages of life can be calculated through twelve months in a year, seven days in a week, and twenty-four hours in a day.²¹

The other, the one with a diagram, is closer to home: the body. The text describes how the proportions of the body:

Corporis enim humani latitudo sexta pars est longitudinis in proportione sextupla, profunditas vero decima in proportione decupla. Latitudinis autem ad profunditatem est proportio superbipartiens tertias qui duos super tertiis exuberant.²²

For the width of the human body is the sixth part of its length in sixfold proportion, but the depth is the tenth part in tenfold proportion. But the proportion between width and depth is superbipartiens tertias [i.e. triple proportion plus two thirds or 5:3], which exceed two over thirds.

Hence the width of the human body is one portion of its length when the length is in six-fold proportion while its depth is one portion of its length when the length is divided in tenths. The length of the body is thus divided twice to represent the width and depth of the human body. The difference between width and depth is 5:3 (*superbipartiens tertias*). *GB-Ccc 410* gives the following, different diagram to accompany the text [Example 5.1].

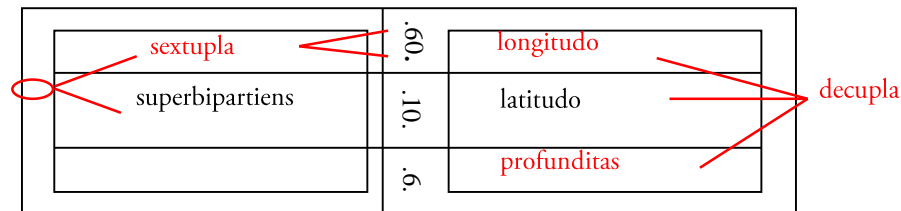


Example 5.1 Proportions of the body in *GB-Ccc 410*

²¹ Temporum etiam et aetatum sunt numeri denominative. Nam sex sunt aetates, duodecim menses, septem dies, viginti quattuor horae et caetera huiusmodi. Walter Odington, *Summa de speculatione musicae*, ed. Frederick Hammond CSM 14 ([Rome], 1970), 46.

²² *GB-Ccc 410*, f. 1v; the relevant text for this image can be found at Walter Odington, *Summa*, 44.

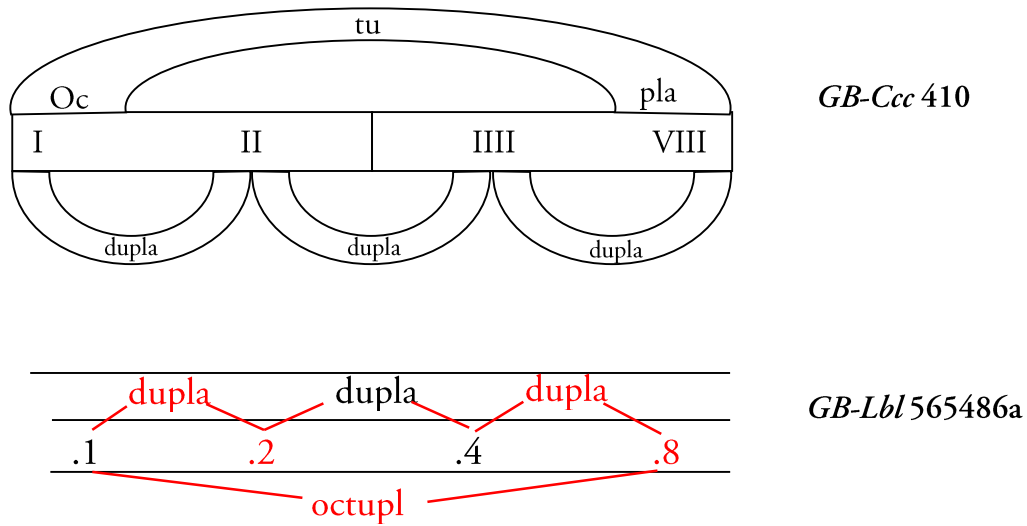
The diagram as it appears in *GB-Lbl Add. 56486a* gives a different representation, but at the same position in the text [Example 5.2].



Example 5.2 Proportions of the body in *GB-Lbl Add. 56486a*

The variants between the two sources result from the difficulty in representing multiple divisions of the length of the body (*longitudo*). *GB-Ccc 410* gives the length twice, once divided into 60 portions in the middle axis of the diagram, the other in tenths in the upper arch of the diagram. The diagram in *GB-Lbl Add. 56486a* erroneously shows the proportions between 6 and 60 ten-fold (*decupla*), but also that the width of the body is also somehow ten-fold.

A second diagram reveals a consistency for the scribal preference of circular and square diagrams. Both diagrams found in Example 5.3 (below), like the diagrams examined already in Example 5.1 and 5.2 above, demonstrate the same information: here this information is that 2 is 1^2 , 4 is 2^2 and 8 is 4^2 . Yet the means through which this information is understood differs. The semi-circular diagram in *GB-Ccc 410* shows clearly a threefold layer of information. Visually, the dominance of the eightfold proportion (*octupla*) in this diagram suggests that it is an understanding of the large proportion that is important. It is only at the second level of observation that an observer notices that the eightfold proportion is made out of three dupla proportions.



EXAMPLE 5.3 Diagram no. 2²³

And yet, the diagram from *GB-Lbl Add. 56486a* shows the smaller proportions (*dupla*) on top implying that the larger proportion (*octupla*) results from the three smaller proportions. Here, the observer first understands that small proportions exist and that these can be combined together to create one larger proportion, here an *octupla*.

The diagrams in Example 5.3 above illustrate how the perception of information can be changed significantly by the order in which it is presented. Both diagrams are intended to show that three *dupla* are found in one *octupla*. Yet, by altering the order of presentation there is a change in emphasis.

Such difference of representation alters from what Carolingians had set out as an example for how diagrams were used in their texts. If diagrams were meant to be uniform in music treatises, it seems that the scrupulous attention requested by Hucbald (to represent exactly what was found in an exemplar) was not as significant for the scribes who copied out Walter's treatise for here is an exception.

²³ Diagram 20 later in the treatise is exactly the same diagram as Diagram 2 in *GB-Ccc 410*.

Though being two different diagrams, variance between the displayed information are not significant enough to change the meaning or understanding of what is being conveyed. The emphasis of the diagrams are the numerical proportions: both diagrams place numerical ratios in the centre. These numbers are linked, either by arches (Example 5.1) or by indicators (Example 5.2) to reveal how they are connected. Pedagogical preference, size of parchment, previous knowledge or familiarity with other types of diagrams must all contribute to the different rendition in these two sources. Perhaps the intention of the scribe's own interpretation was not to conform, but to provide clarity of the text for the reader. Despite the advice of Hucbald, maybe it was more common for scribes to interpret the text and visual images from exemplars into new visual representations. Because placement of the *figura* in both sources are consistent, here is likely to be an example of personal interpretation rather than logistical reasons based on available space.

If diagrams from standard texts were intended to be uniform then it is the juxtaposition between innovation and standardization which becomes interesting for understanding diagrams in English music treatises. Complacency to tradition or a display of originality enlightens our understanding of their use: uniformity would indicate certain standards and expectations while individuality suggests that diagrams were figures used to represent personal interpretation. Thus diagrams were an essential and normal part of instructing quadrivial subjects. Nevertheless, the circulating diagrams resemble different interpretations of the text, perhaps stemming from two different pedagogical traditions. What these traditions were cannot be determined until research on types, styles and tradition of diagrams can be made further.²⁴

²⁴ My initial investigation of this led me to diagrams found in English manuscripts of Boethius' *De institutione musica*. The sources that I was briefly able to consult (Oxford, Bodleian Library, Ashmole 1524; Oxford, Bodleian Library, Seldon supra 25 [olim 3413]; Oxford, Corpus Christi College, 118; Cambridge, University Library MS Ii 3.12) did not reveal any direct, obvious or immediate connection. Further research of English diagrams would no doubt reveal more but is beyond the scope of the present study.

The remainder of this chapter will investigate how English authors used diagrams firstly to clarify complex concepts, secondly to recall previous knowledge and thirdly to visually illustrate musical principles. The investigation begins with Walter's *De speculatione musicae* before turning to a treatise written most likely half a century later than Walter's was the *Quatuor principalia*. Its similarity to Walter's text, posited by Luminita Aluas, will be questioned before highlighting the different use of diagrams in this treatise. Finally, the unique use of images in Willelmus' *Breviarium regulare musicae* will give another example for the independent use of visualised information.

The mathematical diagrams in *De speculatione musicae*

Diagrams similar to those found in Boethius' treatise can be found in Walter's treatise.²⁵ This is for good reason since for a majority of Parts I and II Walter uses the teachings from both *De institutione musica* and *De institutione arithmetica*. Many diagrams present information through arches to describe proportions while presenting information in tables and cubes for simple identification of numerical relationships. As it is preserved in Cambridge, Corpus Christi College 410 (*GB-Ccc 410*), Walter of Evesham's *De speculatione musicae* contains 52 visual aids to illustrate and explain the text further.²⁶ All but three can be found within the first half of the treatise. As shown in Table 5.1 below in *GB-Ccc 410*, there are 23 semi-circular diagrams, 17 tables, 4 cubes, 2 images and 6 individual diagrams (labelled 'other').

Diagrams made of semi-circles represent either the distance of a numerical ratio or portray the inter-relationships of musical proportion. Often comprised of several semi-circular elements,

²⁵ Considering the extensive regurgitation of Boethius' teachings in *De speculatione musicae*, it could have been likely that the diagrams contained within the treatise were derived directly from the earlier treatise as well. Curious to find a Boethian manuscript that might have served as a model, I made an investigation of Boethian diagrams in English manuscripts (Chapter 1) but was unable to find any direct relationship there.

²⁶ The diagrams contained within *GB-Ccc 410* are drawn in brown ink which matches the ink of the main text. The only exceptions are diagrams 3, 18, 19, 20, 21 and 47 which are in red ink. It is uncertain for what reason the six diagrams were depicted in red ink since they do not stand out as a group. The same diagrams which are in the fragment source *GB-Lbl Add. 56486a* are a combination of red and black ink which is used in the text.

they are constructed upon a central axis (depicted as a box) with semi-circles indicating proportional relationships. Tables are constructed to show how numbers relate to one another through multiples or to depict the intervallic distance of pitch. The mathematical tables, found mainly in Part I of *De speculatione musicae*, were derived from Boethius's *De institutione arithmetica* and portray only partially numerical principles of multiplication which are infinitive. What I designate as Image Diagrams are diagrams visually representing an object, which in Walter's treatise, are the monochord and a sphere. The six diagrams labelled as 'other' do not fit into the description of the above four and will be given separate attention in the following section.

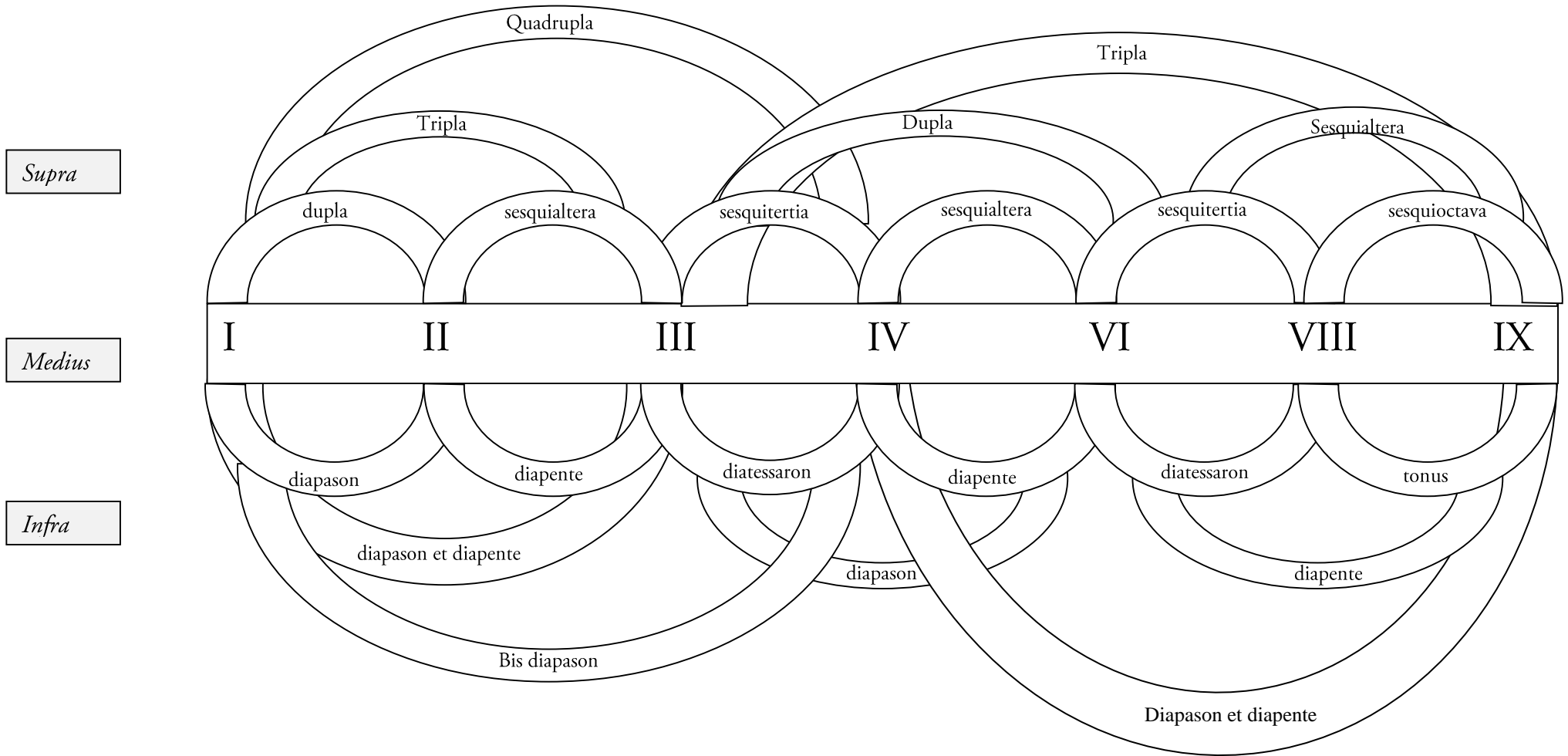
TABLE 5.1 Diagrams in *De speculatione musicae* (GB-Ccc 410)

TYPE	DIAGRAM NUMBER ²⁷	TOTAL
Semi-Circular	2, 3, 18, 19, 20, 21, 22, 24, 25, 26, 28, 29, 30, 31, 32, 36, 37, 39, 40, 41, 42, 43, 44, 52	23
Table	4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 38, 51	17
Cube	27, 33, 34, 35	4
Image	1 (sphere), 45 (monochord)	2
Other	23, 46, 47, 48, 49, 50	6
TOTAL		52

One semi-circular diagram represents significantly more information than the others already examined above. An example of this is Diagram 28 (Example 5.4, below). This diagram shows the different interrelationships of harmonic proportions. The central axis contains the numbers 1, 2, 3, 3, 6, 8 and 9. The upper semicircles show the proportional distances such as *dupla*, *tripla*, *quardupla*, *sesquialtera*, *sesquitercia* and *sesquioctava*. The lower semicircles represent intervallic proportions: *tonus*, *diatessaron*, *diapente*, *diapason*, *diapason et diapente*, and *bis diapason*.

²⁷ The numbers given here are my own and correspond to the diagrams in the order that can be found in GB-Ccc 410 which can be found in Appendix III.

EXAMPLE 5.4 Diagram no. 28



As with Diagram 2 in Example 5.1, three levels of information which can be dissected from the semi-circular diagram in Example 5.3. At the first level, which begins from the innermost semicircles, are the proportions of intervals (Table 5.2, below). The proportions will be familiar as the basic harmonic proportions for intervals.

TABLE 5.2 First Level of Information in Diagram no. 28

Ratio (<i>Medius</i>)	Proportion (<i>Supra</i>)	Interval (<i>Infra</i>)	Modern Equivalent
1:2	dupla	diapason	octave
2:3	sesquialtera	diapente	fifth
3:4	sesquitertia	diatessaron	fourth
4:6	sesquialtera	diapente	fifth
6:8	sesquitertia	diatessaron	fourth
8:9	sesquioctava	tonus	major 2 nd

At the second level, larger intervals which are made from compounding the smaller intervals are drawn out (Table 5.3, below).

TABLE 5.3 Second Level of Information in Diagram no. 28

<i>Medius</i>	<i>Supra</i>		<i>Infra</i>
Ratio	Proportion		Interval
1:3	tripla	dupla; sesquialtera	diapason; diapente diapason et diapente
4:8	dupla	sesquialtera; sesquitertia	diapason
6:9	sesquialtera	sesquitertia; sesquioctava	diapente diatessaron; tonus

Here, three different intervallic proportions are shown. First the numerical ratio 1:3 can be made from the compounded proportion *dupla* and *sesquialtera* to make the proportion *tripla*. Second, the equivalent musical intervals are the octave plus a fifth or *diapason et diapente*. The remaining two numerical ratios 4:8 (*dupla*) and 6:9 (*sesquialtera*) can be derived at this same level.

The third level of reading this diagram reveals larger proportions with their smaller compounds (Table 5.4).

TABLE 5.4 Third Level of Information in Diagram no. 28

<i>Medius Supra</i>		<i>Infra</i>
Ratio	Proportion	Interval
1:4	quadrupla (dupla; sesquialtera; sesquitertia)	bis diapason diapason; diatessaron
9:3	tripla (sesquialtera; sesquialtera)	diapason et diatessaron; diapente diapente

The two proportions here are compounded slightly differently between each other. The *quadrupla* proportion, 1:4, compounds the proportions found in the first level (*dupla et sesquialtera et sesquitertia*), while the ratio 9:3 (*tripla*) is based on the proportions taken from the second level, *dupla et sesquialtera*.

Thus the semi-circular diagrams were a useful tool to show how the different musical proportions relate to one another. The different layers of information explored show how complex information can be retained and examined through different combinations, providing a better of ideas visually. One asset for this type of diagram is the relatively easy method in which various possible combinations can be identified by tracing the arches from various numbers. What is more, it is possible to show that different ratios can produce the same harmonic intervals (for example, the perfect 5 *diapente* is shown as a combination of 2:3, 4:6 or 6:9).

While Circular Diagrams contain a wealth of information and a variety of different approaches to reading them, Table Diagrams are visual aids used to demonstrate multiplications of numbers. For example, Diagram 5 shows the duplication of numbers (Example 5.5, below).

I	II	III	IV
III	VI	IX	XII
IIII	VIII	XII	XVI

EXAMPLE 5.5 Diagram no. 5

The table above is read from left to right where $1 \times 1 = 1$, $1 \times 2 = 2$, $1 \times 3 = 3$, $1 \times 4 = 4$ in the first row, and $3 \times 1 = 3$, $3 \times 2 = 6$, $3 \times 3 = 9$, $3 \times 4 = 12$ in the second etc. From the text which accompanies this diagram it is possible to discern that the numbers above are natural (*numeri naturales*), a concept which is presented by Boethius in *De institutione musica*.²⁸ The table here is a means through which numbers are organised and then easily referred to. Other numerical tables in Walter's *De speculatione musicae* are derived from Boethius' other seminal text, his *De institutione arithmetica*.

As it has already been shown in the opening of this chapter, the two existing sources for *De speculatione musicae* which include diagrams as examples show that at least in this text, diagrams could sometimes exist in different forms. The diagrams in *GB-Ccc 410* more closely resemble diagrams found in Boethius' treatises while the diagrams in *GB-Lbl Add. 56486a* are original. Other English treatises exhibit originality in the use of diagrams, albeit in a slightly different way from those found in Walter's *De speculatione musicae*.

²⁸ This concept is introduced in Boethius, *De institutione musica*, chapter 4, book II. Although used repeatedly in earlier music treatises as well as *De institutione arithmetica*, Boethius never defines what he implies by '*numerus naturalis*'. Calvin Bower suggests that the context of this diagram implies that numbers were meant to be natural numbers, but points out that '*naturalis numerus* refers to more than a single number; it implies a series of numbers generated from unity [...]' Anicius Manlius Severinus Boethius, *Fundamentals of Music*, trans. Calvin M. Bower, 54. See especially footnote no. 8.

The *Quatuor principalia musicae*

The *Quatuor principalia* has been thought to resemble the work of Walter's *De speculatione musicae* in various ways. More precisely, five specific points of possible connections between the *Quatuor principalia* and Walter of Evesham's *De speculatione musicae* have been made by Luminita Aluas.²⁹ At this point, it will be beneficial to discuss in some detail the similarities with between *Quatuor principalia* and Walter's *De speculatione musicae*. Though a digression will take place here from the main objective of this chapter, a contextualisation will help structure a setting for the remainder of this investigation since this is the first mention of this treatise in the present study.

The following points unite the two texts. 1) The composition, structure and organisation of the two treatises are similar. Aluas verifies this point with a broad comparison of the two treatises and the content that each is dealing with. She notes that both the *Quatuor principalia* and *De speculatione musicae* are encyclopaedic in nature containing the discussion of both *musica speculativa* and *musica practica*.³⁰ 2) The two treatises are similar in style: the two are lengthy texts that sometimes use the same sources with clear and rigorous organisation.³¹ 3) The two are similar in content, especially in their inclusion of plainchant and tonaries. 4) Both treatises contain a reference to the legend of King Pipin receiving an organ from the Franks in the year 757.³²

²⁹ Luminita F. Aluas, 'The 'Quatuor Principalia Musicae': A Critical Edition and Translation, with Introduction and Commentary' (Ph.D Diss., Indiana University, 1996).

³⁰ *Ibid.*, 41

³¹ *Ibid.*, 41-42.

³² Anno domini 757 venit organum primo in fanciam missum a potissimo rege grecor pipine [imperator].

GB-Ccc 410, f.1r.

Neither Coussemaker nor Hammond included this passage as a part of their editions for Walter's *De speculatione musicae*. Except for a brief comment made by Charles Burney, Aluas' mention is the first to bring the excerpt to the forefront for scholarly study. Aluas' connection of the two treatises stems from her examination that a similar passage can be found in two manuscripts that contain the *Quatuor principalia*, *GB-Ob Digby 90* and *GB-LblAdd. 4909*. *GB-Ob Digby 90* is a manuscript which was given to the Friars Minor at Oxford by an author who chose to remain unidentified in the year 1388 with the only date attributed to the completion of the treatise, 1351. On folio 63r, at the end of chapter 48 of the Fourth Principle, is the following paragraph which relates to the passage above found in *De speculatione musicae*:

5) Finally, Aluas associates the two authors to be connected with Oxford.³³

The encyclopaedic works by the two authors contain a vast amount of knowledge on the topic of music. On a superficial level, there is a close resemblance of content between the two English treatises. Yet, a closer look at the structural organisation of the two treatises seems to contradict this statement on a number of grounds (see Table 5.6, below).

The *Quatuor principalia*, in comparison with the *De speculatione musicæ*, was intended for the practicing musician, an aspect which will be taken into consideration further later. Comparing this four-fold treatise to Walter's six-part work, *Quatuor principalia* tends to only mention the musical proportions and what is deemed necessary for an intelligent musician. Already in the *Prohemium*, John makes clear the intent of his treatise: the work sets out to inform musicians of a more speculative aspect of music for their edification, an intent which is made more lucid with a Biblical metaphor for the ability of a person to discern wheat from weed.³⁴ Yet, it is only the beginning Fundamentals which are truly speculative while the remaining reveals strong connections to knowledge which can be applied to practical music making.

Verumptamen sicut de Grecia musica descendebat ad nos, ita et organum. Nam Anno Domini 757 venit organum primo in Franciam missum a Constantino rege grecorum Pippino imperatori. Non enim erat musica tunc mensurata, sed paulatim crescebat ad mensuram usque ad tempora Franconis qui erat musicæ mensurabilis primus auctor approbatus.

[Nevertheless, just as music was handed down to us from Greece, so was organum. For in the year of our Lord 757, the organ was first sent to France by Constantine, the King of the Greeks, to Emperor Pippin. Then, music was not measured, but it increased by little increments to being measured in the times of Franco, who was the first approved author of measurable music.]

Aluas, 'The Quatuor Principalia Musicæ', 42; 529 & 753. I have made slight changes to the translation here.

³³ *Ibid.*, 42-43.

³⁴ *Ibid.*, 200; 533.

TABLE 5.5 Comparison of content between the *Quatuor Principalia* and *De speculatione musicæ*

John of Tewkesbury, <i>Quatuor principalia</i>		Walter of Evesham, <i>De speculatione musicæ</i>	
SECTION	CONTENT	SECTION	CONTENT
First Fundamental	On the qualities of music, its etymology, justification of its presence in the church, its use and virtues.	Part I <i>De inequalitate numerorum et eorum habitudine</i>	Introduction to arithmetical proportions of music
Second Fundamental	The invention of music, the monochord, the musical scale and its function, consonances (perfect and imperfect), proportions of pitches	Part II <i>De inequalitate sonorum sub portione numerali et ratione concordiarum</i>	The praise of music, the measure of sound, proportions of pitches, the names of notes
Third Fundamental	Hexachords and their Latin letter names and Greek gamma, tetrachords, instructions of the monochord, how to notate musical intervals on lines and spaces, on finals, rules regarding Antiphones, on the eight tones, hard and soft b's, singing instructions for plainsong	Part III <i>De compositione instrumentorum musicorum et de tropis</i>	Greek names of pitches, the monochord, the species of intervals, tropes
Fourth Fundamental	Mensural music, notation	Part IV <i>De inequalitate temporum in pedibus quibus metra et rithmi decurrunt</i>	Poetic meter
		Part V <i>De armonia simplici, id est de plano cantu</i>	Notation, plain chant, eight tones
		Part VI <i>De armonia multiplici, id est de organo et eius speciebus</i>	Measured notation, types of composition

Three chapters at the end of the third fundamental will serve as good examples to demonstrate the more practical aspects of *Quatuor principalia*. Chapter 55 bears the title ‘Brief and Useful Instruction in Modulating the Plainsong’ (*Brevis et utilis informacio modulandi planum cantum*). Here, the author instructs the cantor to begin on the appropriate tuning before intoning. Caution is given in this manner not only so that the singers of the choir might avoid extreme ranges which are unreachable to them ‘lest he [the cantor] bring back shame for his effort.’³⁵ In Chapter 56, the author is concerned with the necessity for accuracy in singing so as not to defect the melody of chant.

The conflict of practice against theory is evident in this brief chapter since the author mentions, along with the complexities of singers differentiating semitones and whole tones, that even authoritative singers pass on erroneous practices, thus corrupting others:

Interrogati quidem qua ratione sit semitonium pro tono pronunciant, pro auctoritate enim atque ratione, cantores de magnatorum capellis allegant. Dicut etenim eos non sic cantasse sine ratione, cum optimi sint cantores, sicque aliorum vestigiis decepti, et unus post alium omnes secuntur errores.

Some, when asked by what reason they pronounce a semitone instead of a tone, claim as their reason and authority the singers of the chapels of the nobles. Indeed, they say that they would not sing thus without reason, since they are the best singers, and so they are deceivers for the footsteps of others, and all the errors follow one after the other.³⁶

Beyond the concerns surrounding the production of sound, the author of *Quatuor principalia* is concerned with the physical disposition of singers as well:

Preterea in cantando talem modum quisquis habeat, ut corpus aut membrum hinc inde non moveat, exceptis manibus libris tangentibus. Sed sit devotus, humilis et erectus veluti ymago depicta.

³⁵ ‘Qua propter ante incepcionem, bene consideret arsim et thesim sui cantus, ne pudorem pro labore reportet.’ Aluas, ‘The Quatuor Principalia Musicæ’, 355; 642.

³⁶ *Ibid.*, 356; 642.

In singing, one should have such a manner that he should not move body or member (except the hands touching the books), but be devout, humble, and erect just like a painted image.³⁷

The practical insights suggest that the author was interested in the practice-based teachings of music.

Several differences between the two treatises are of particular interest for the understanding of their transmission history. Firstly, Walter's *De speculatione musicae* almost never quotes works of authorities verbatim. Instead, when he does refer to their works, he nearly always paraphrases (Chapter 3). Later, Walter's text was taken and used as an authoritative text by several different authors. Contrarily, in *Quatuor principalia* is never quoted in other sources though it is clear that Lambertus' *Tractatus de musica* is one of the sources from which the text was compiled.³⁸ This was not the first time that the author of a treatise took Lambertus' text as its primary source.³⁹ Yet it is a treatise that offers exceptional insight into the availability of continental treatises on English soil. On these grounds Gilbert Reaney saw the *Quatuor principalia* as an important treatise which can signify strong ties between the musical milieu of England and the continent.⁴⁰ The more practical

³⁷ *Ibid.*, 357; 643-644.

³⁸ Lambertus' *Tractatus de musica* is thought to have been written sometime between 1265-75 and was edited by Coussemaker under the name 'Cujusdam Aristotelis' published in *Scriptorum de musica medii aevi nova series a Gerbertina*, ed. Edmond de Coussemaker (Paris, 1864; Hildesheim, 1963, reprint), I:251-81. Though this is the only available edition today, it contains many errors. A new critical edition has been forthcoming for some time now but will be made available in 2014 by Christian Meyer and Karen Desmond. Partially owing to this, it is not possible to make further comment on the treatise here. However, a summary of the contents and relevant modern scholarship which does exist can be found in Grove: Rebecca A. Baltzer, 'Lambertus, Magister', *Grove Music Online. Oxford Music Online* (2001) [Last accessed May 2012].

³⁹ Aside from the *Quatuor principalia*, traces of Lambertus' treatise can be found in the so-called *Ars nova* treatise attributed to Phillip de Vitry. See especially Chapter VII, Chapter VIII, Chapter IX and Chapter X in Philippe de Vitry, *Ars Nova*, eds Gilbert Reaney, André Gilles and Jean Maillard CSM 8 (Rome, 1964), 18-19.

⁴⁰ There are four surviving sources of *Tractatus de musica* by Lambertus: *F-Pn* 6755; *F-Pn* 11266; *D-EF* Amp. 8^o94; *I-Bp* L.V. 30. It is likely that the *Quatuor principalia* was intended to be used within England for an English liturgical institution. Nevertheless, the musical examples within the *Quatuor principalia* reveal the author's knowledge of continental music. Three motets are referred to within the treatise, two of which are specifically identified to be those by Philip de Vitry signifying that the author must have been familiar with the French *Ars nova* movements. See: Aluas, 'The Quatuor Principalia Musicae', 420; 459. For a recent discussion of the motet *Cum statua/Hugo* cited by the author of *Quatuor principalia*, see: Anna Zayaruznaya, 'Form and Idea in the Ars Nova Motet' (Ph.D. diss., Harvard, 2010),

discussion of music in the *Quatuor principalia* differ from the speculative focus in *De speculatione musicae*. The Oxford connection of the two theorists should now be reconsidered based on the observations already made (Chapter 1), while a reference to the history of the organ seems less significant when considering the similarities of these two texts. Thus the connection between the *Quatuor principalia* and *De speculatione musicae* seem less evident.

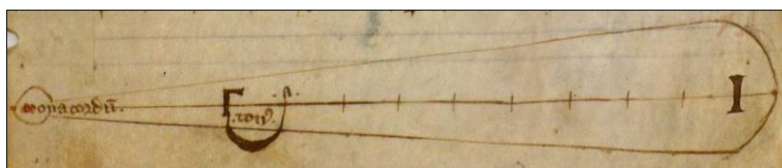
Nevertheless, the *Quatuor principalia* was one of the most popular treatises circulating in England during the fourteenth century. Especially noticeable are the diagrams which were specifically designed for the treatise. In comparison to those found in *De speculatione musicae*, the author of the *Quatuor principalia* reveals originality in the use of diagrams. *GB-Ob 90* has 54 diagrams which can largely be divided into three different types: semi-circular diagrams, an image diagram and circular diagrams. The semi-circular diagrams can be read in nearly the same way as those found in *De speculatione musicae*, already explored above.

While the diagrams for *De speculatione musicae* in *GB-Ccc 410* tend to favour compounded information in one diagram, the diagrams in the *Quatuor principalia*, however, show a preference to represent multiple layers of information through multiple diagrams in a step-wise manner. An example of this can be found in Chapters 6 and 7 of the Second Fundamental, a description for the division of the monochord is given. Each step of this process is carefully spelled out within the text before it is demonstrated.

First it is pointed out on the monochord that the first bridge and label is the Greek G (Γ); the string is then divided into nine equal sections. The immediately adjacent division to Γ is then

especially Chapter 6, at 285-372; Gilbert Reaney, “*Quid est musica*” in the *Quatuor principalia musicæ*, *Bericht über den internationalen musikwissenschaftlichen Kongress* (Basel, 1957), 177.

labelled 'a' and is marked as a tone. This is then divided into eight further divisions.⁴¹ To demonstrate what this looks like on the monochord, a diagram is shown (Example 5.6, below).



EXAMPLE 5.6 Tone from Γ to a ⁴²

In the instruction which follows, other letters and proportions are added: ‘In the same way, divide the whole space of the sounding string from A to the second bridge in nine equal parts, and where the first part is ended, place [square]b gravis and there you will discover a tone.’⁴³ Diagram 2 in Example 5.7 below illustrates how this is done.

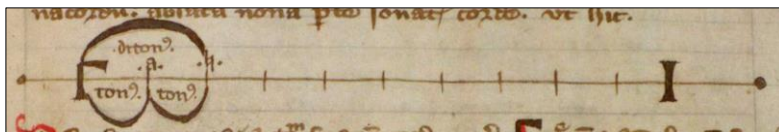
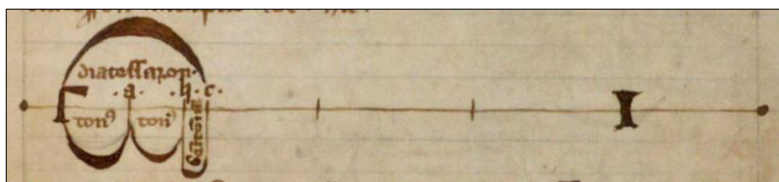
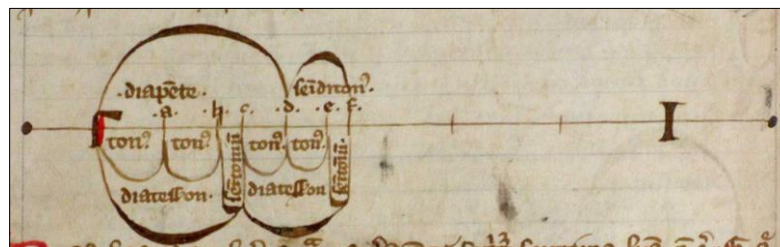
⁴¹ Sed in loco primi semipherii. Γ grecum, id est, gamma in capite corde ponatur. Deinde totum spacium inter Γ grecum et secundum semipherium in novem partes equales dividatur, et ubi prima pars finitur, A gravem pone et inde tonum invenies inter Γ grecum et A latinum, que, secundum quod antiquis et eciam modernis placuit, prima litera est dicenda. Et sic elevatur tonus a tota corda sonate, nona parte ablata, octo partibus remanentibus, ut patet in corda ista extenta super instrumentum.

[At the place of the first bridge, the Greek G (that is *Gamma*) is placed at the head of the string; then, the whole space between the Greek G and the second bridge is divided into nine equal parts and, where the first part ends, place A gravis, and there you will discover a tone between the Greek G and the Latin A, which (in accord with what pleased the ancients and the moderns as well) must be called the first letter. And so a tone is raised from the whole sounding string, when the ninth part is removed and eight parts remain.]

Aluas, ‘The Quatuor Principalia Musicæ’, 224; 553-4.

⁴² Early Manuscripts at Oxford University © Bodleian Library, University of Oxford, 1996 (<http://image.ox.ac.uk>), *GB-Ob Digby 90*, f. 11v.

⁴³ Eodem modo totum spacium corde sonantis ab A ad secundum semipherium in novem partes equales divide, et ubi prima pars finitur, [square] b gravem quadratum pone, et inde tonum invenies. Aluas, ‘The Quatuor Principalia Musicæ’, 225; 554.

Diagram 2: *Ditonus*Diagram 3: *Diatessaron*Diagram 4: *Diapente*Diagram 5: *Tonus cum diapente*Diagram 6: *Diatessaron cum diatessaron*

EXAMPLE 5.7 Recipe-like demonstrations for the division of the monochord⁴⁴

⁴⁴ Early Manuscripts at Oxford University © Bodleian Library, University of Oxford, 1996

Further division of the monochord results in additional individual intervals and their compounds. To show the larger relationship of pitch, i.e. *ditonus*, *diatessaron*, *diapente*, etc., the Greek letters already placed at the beginning of the exercise are referred to here. To create a semitone after square b, instructions are given to divide the first and second bridges into four equal parts. One part creates a semitone and is labelled on the monochord as C after square b.⁴⁵ It is only then that the distance between α and C (*tonus + tonus + semitonum*) is called the *diatessaron*.⁴⁶ This is shown in Diagram 3 of Example 5.6 above. Diagrams 4, 5, and 6 that follow continue to show the further division of tones.

This type of detailed demonstration reveals that the information could have easily been included in one diagram like the one in Example 5.8, below. Yet in the *Quatuor principalia* every set of instruction is closely followed by diagrams compounding information based on what has already transpired. It is not until the end of this instructional chapter that a complete division of various proportions is given in a diagram. This recipe-like step-by-step progressive instruction is unique to the *Quatuor principalia*.

(http://image.ox.ac.uk/GB-Ob/Digby_90, ff. 12r, 12v.

⁴⁵ Diende revertes, et totum spacium corde inter Γ grecum et semipherium secundum in quatuor partes divide equales. et ubi prima pars finem fecerit, C graven pone, et ibi duos tonos cum semitonio invenies, quod.

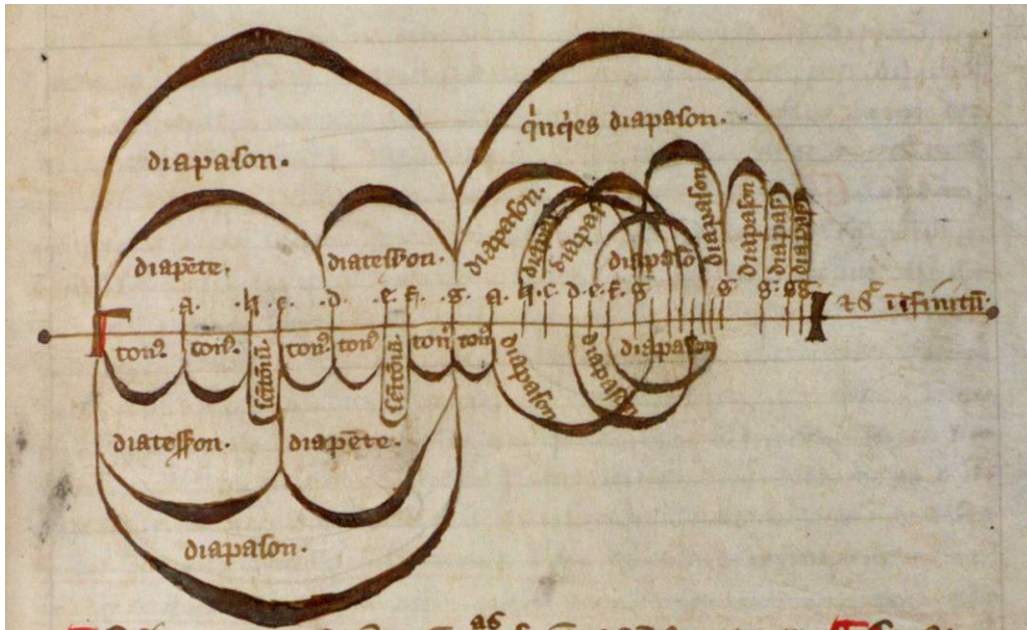
[Then turn back and divide the whole space of the string between the Greek G and the second bridge into four equal parts, and where the first part will have made an end, place a C gravis.]

Aluas, 'The Quatuor Principalia Musicae' (Indiana University, 1996), 225; 554.

⁴⁶ et tota illa quarta pars corde, diatessaron nuncupatur.

[and the whole fourth part of the string is referred to as "diatessaron."]

Aluas, 'The Quatuor Principalia Musicae', 225; 554.



EXAMPLE 5.8 All possible proportions (and beyond)⁴⁷

Also unique in the *Quatuor principalia* is the use of a monochord, a sounding object, in diagrams. Though *De speculatione musicae* includes a diagram of the monochord, it is never used as a means for demonstrating pitch.⁴⁸ In the *Quatuor principalia*, nearly all demonstrations of pitches are made with the monochord as its point of departure, suggesting that sound can be produced as a result of calculated proportions, pointing to the practical use of the respective treatises. This might indicate that the treatise was intended to be used by practicing musicians rather than for those who were interested in learning the intellectual properties of sound.

Further suggestions to hint that there may have been a specific readership for the *Quatuor principalia* is detectable when the Guidonian hand is introduced as a mnemonic device in Chapter 7 of the Third Fundamental. Here the author is keen to provide a demonstrable way in which

⁴⁷ *Ibid.*, f. 13r.

⁴⁸ Diagram 46 in Appendix 3.

pupils learn the note syllables of the musical scale away from a monochord. For this, the most practical and readily available mnemonic device was the hand. ‘It must be known’, the author writes, ‘that for the boys⁴⁹ to be instructed in this (i.e. the tetrachords and musical alphabet), one can represent the monochord on the left hand this way.’⁵⁰ Thus, careful demonstration of concepts was considered important for the author of *Quatuor principalia*.

Visual ideas in the *Breviarium regulare musicæ*

The use of diagrams was not the only way in which information could be visually displayed. Illustrations were used to provide additional information. The third chapter of Willelmus’ *Breviarium regulare musicæ* contains a number of visual examples to introduce the hierarchy of music notation.⁵¹ The method through which information is transmitted in this treatise resembles the step-wise approach adopted by the author of the *Quatuor principalia* already examined.

⁴⁹ The Latin word used is *pueris* though Luminita Aluas has translated this as ‘pupils’ rather than ‘boys’.

⁵⁰ Sciendum est eciam quod pro pueris informandis, monocordam in sinistra manu potest assignari hoc modo: incipiatur Γ a summitate pollicis, deinde assignetur A gravis in iunctura proxima illi. In tertia b (square) gravis, sic consequenter transeundo per infimas iuncturas quatuor digitorum, ascendendo per auricularem et transeundo per summitates digitorum et descendendo per indicem ad mediam iunctura ipsius, transeundo per medias iuncturas medii et medici, deinde ascendendo ad supremas iuncturas eorum, ita ut ela sit ultra summitatem medii digiti. Postea revertes: dicatur Γ in linea sive in regula, A gravis in spacio et sic alternatim de aliis, sicut sequens formula exemplariter demonstrat.

[It must be known that, for the pupils to be instructed in this, one can represent the monochord on the left hand this way: Γ a is begun at the summit of the thumb; then A *gravis* is assigned to the joint nearest to that; then to the third joint b (square) *gravis*. And by passing consecutively through the lowest joints of the four fingers, ascending through the auricular, passing through the summits of fingers, descending through the index to its middle joint, passing through the median joints of the middle finger and the fourth finger, then ascending to their highest joints, *e la* is beyond the summit of the middle finger. After this, revert Γ is said on a line or rule, A *gravis* in a space, and thus alternately for the rest, as the following formula demonstrates in an exemplary manner.]

Aluas, ‘The Quatuor Principalia Musicæ’, 266; 583.

⁵¹ This treatise, already introduced in Chapter 3, reveals how the author Willelmus referred to Walter as an authority. A close study of the way in which Willelmus introduced new forms of notation will be made in Chapter 6.

At the beginning of Chapter 3 in the *Breviarium regulare musicae* is a list to demonstrate pitch names. First, Willelmus gave a table which includes five different names (Example 5.9, below).⁵²

Netē hīperboleōn	2300	Signa	Littere	Guidonian
paranētē hīperboleōn	2402			
tritē hīperboleōn	2416			
netē diēzeugmēnē	3042			
paranētē diēzeugmēnē	3245			
tritē diēzeugmēnē	3388			
paramesē	4096			
mesē	4608			
katanemesōn	4892			
paramesōn	4972			
katanemesōn	5122			
paranotespatōn	6912			
mesotespatōn	8102			
katanotespatōn	9216			

EXAMPLE 5.9 Five difference pitch symbols⁵³

Then, the different columns are explained as the ancient pitch names and their symbols. In the left column are the Greek names. In comparison with Boethius's Greater Perfect System which include the Greek names, it is noteworthy that the higher and lower pitches are inverted, placing the low A (*Proslambanomenos*) at the bottom and the high aa (*Nete hiperboleon*) at the top.⁵⁴ Next to this are numbers designated to each pitch. The following two columns are labelled *signa* (signs) and *littere* (letters). In the right most are the Guidonian letters. The table is arranged in a way that each

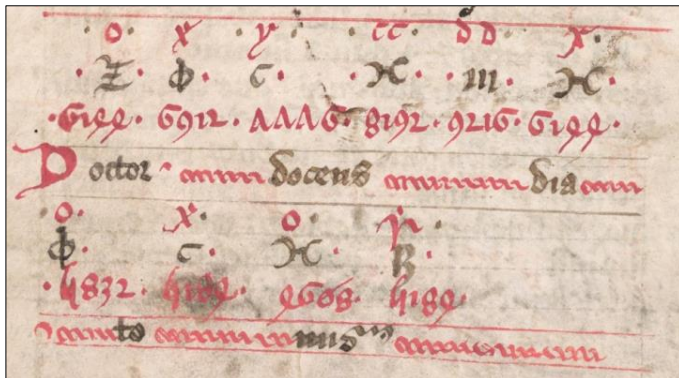
⁵² For an overview of the Ancient Greek tuning systems found in music treatises, see Charles Atkinson, *The Critical Nexus: Tone-system, Mode, and Notation in Early Medieval Music* (Oxford, 2009), especially Chapter 1, 6-46.

⁵³ Early Manuscripts at Oxford University © Bodleian Library, University of Oxford, 1996 (<http://image.ox.ac.uk>), *GB-Ob Bodley 842*, f. 65r.

⁵⁴ See Boethius, *De institutione musica libri quinque*, ed. Godofredus Friedlein (Leipzig, 1867), 341. As a point of comparison, Walter of Evesham's treatise retains the order according to Boethius. See *GB-Ccc 410*, f. 15r; Walter Odington, *Summa*, 81.

column can be read horizontally to show that they are equal. For example, *Paripate hipaton* is the same as the number 7776 which is the same as the sign R.L and the letters C.

The visual reference following this table takes the information already given to show how a melody can be represented through different symbols (Example 5.10, below).



First Melody in Red ink

o. x. y. cc. dd. x. o. x. o. y.

Second Melody in Black ink

Z. phi. . C. H. III. H. phi.. C. H. R.

Third Melody in numbers

6144. 6912. 7776. 8192. 9216. 6144.
5832. 5184. 4608. 5184

EXAMPLE 5.10 Three melodies in different symbols⁵⁵

The first melody in red ink is notated with letters, the second in black ink through pitch signs and the third in red ink by numbers. This visual aid shows that the symbols were not merely arbitrary but that they can be used to notate music. In case this was not clear in the table from Example 5.10, above, a second illustration is given in Example 5.11, below.

⁵⁵ Early Manuscripts at Oxford University © Bodleian Library, University of Oxford, 1996 (<http://image.ox.ac.uk>), *GB-Ob Bodley 842*, f. 65r.



EXAMPLE 5.11 Three melodies with notation⁵⁶

Here, the melodies now include duration as well as pitch. Its layout here is reminiscent of the musical examples that can be found in the *Musica enchiriadis* where the dasian notation is placed adjacent the lines only and the melody is outlined by the chant (Example 5.12, below).⁵⁷

Al-le-lu-ia. Lau-da-te Do-mi-num de cae-lis.

4	a		
F	da	te	num
/	Lau	mi	de
F	Do	e	
B		caelis.	
7			
		cae	lo
		rum	e
		cae	lau
		da	Deum.
			au

Cae-li cae-lo-rum lau-da-te De-um.

EXAMPLE 5.12 *Laudate dominum* from the *Musica enchiriadis*⁵⁸

⁵⁶ *Ibid.*, f. 65v.

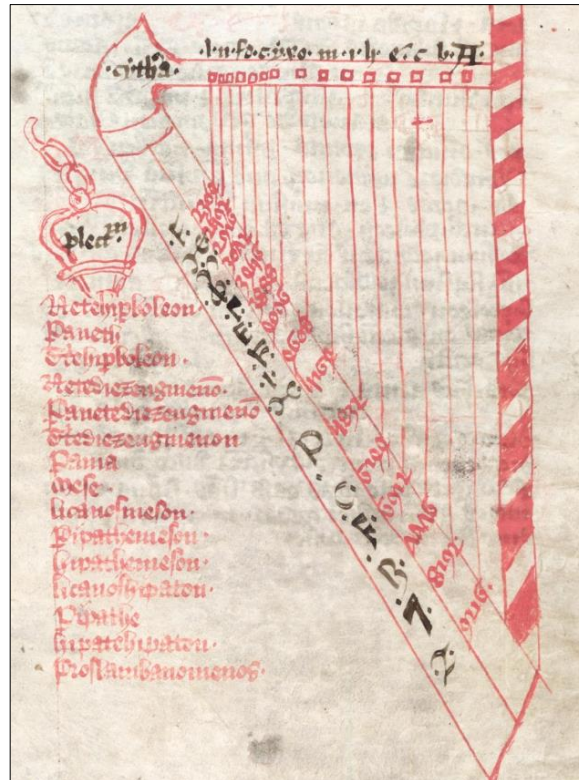
⁵⁷ It is difficult to tell if Willelmus had the *Musica enchiriadis* in mind when he made this example for his treatise. however, it should be noted that in the opening folio of *GB-Ob Bodley 842 fol. iiiiv* there is evidence that dasian notation was known to English theorists.

⁵⁸ Anonymous, *Musica et scolica enchiriadis*, ed., Hans Schmid (München, 1981), 16.

As with the example in the *Musica enchiriadis*, the musical example given in the *Breviarium regulare musicae* does not provide a clef. Instead, pitches are designated by the letters or numbers on the left of each example. This is necessary in Willelmus' diagram since it is the demonstration that melodies can be written differently which was his main objective here.

To demonstrate how musical pitches are proportional to each other, theorists often included an image of a monochord, as was the case with *Quatuor principalia*. Willelmus' application of pitch names to an instrument is far more elaborate. The instrument of choice for Willelmus is a harp, here a fifteen-stringed instrument which includes a plectrum (Example 5.13, below).⁵⁹ This image of the harp, though unusual to be used for demonstrating pitch symbols, explains why certain peculiarities in the other images already examined above.

⁵⁹ Gilbert Reaney had already observed that this image can inform us on the availability of types of instruments in England at the end of the fourteenth century, claiming that this diagram shows an instrument which is larger than what is known of French harps from the same time. I believe that this instrument is not a realistic representation but rather an image specifically designed for the purpose of demonstration within the treatise. Since the inclusion of the plucking device is not necessary in explaining the ideas within the diagram, it may indicate that the medieval harp was not considered to be complete without one. The instrument diagram, however, raises questions as to whether this image is acceptable as a true representative model for musical instruments of the time. Willelmus, *Breviarium*, 7.



EXAMPLE 5.13 Willelmus' harp⁶⁰

On this instrument, there are 15 strings, exactly replicating the 15 notes from the pitch symbols which are already listed in the very first table in Example 5.8 above. It should be remembered that the diagram in Example 5.8 contained a reverse pitch order from that of Boethius in the table (highest note first, lowest note last). Since the stringed instrument would naturally have the lower pitch at the bottom, since this pitch requires the longest string, and the higher at the top with the shortest string, the order of pitches would naturally be low to high. It would have been cumbersome to first show the pitches in one order in earlier diagrams only to reverse them at the end when creating this diagram. This image, then, is not necessarily the representation of an actual instrument but rather is a purposeful diagram that was explicitly used for explaining musical concepts. In short, Willelmus was not interested necessarily in demonstrating a real instrument.

⁶⁰ Early Manuscripts at Oxford University © Bodleian Library, University of Oxford, 1996 (<http://image.ox.ac.uk>), *GB-Ob Bodley 842*, ff. 66v.

Instead, it was a convenient way through which he could culminate all of the information already presented in an image that musicians could relate to.

The measure of freedom to correlate diagrams found in the *Breviarium regulare musicae* provides several facets from which pedagogic methods can be seen. The images in this treatise progress the different methods through which pitch can be represented. First is the list of symbols, then three melodies both with symbols and notation. The use of the harp for demonstration is indicative that the pitches can be audible. The unfolding of information in this way would demonstrate clearly not only how pitch had been notated before, but in the end reveal how they are applicable to instruments commonly known.

The reason for visual aids

The three treatises above have revealed three contrasting means in which diagrams and visual images were used in fourteenth-century England. All three authors incorporate several distinctive methods to demonstrate concepts to their readers. The visual demonstrations found in the *Breviarium regulae musicae* and *Quatuor principalia* reveal a layered instruction through multiple diagrams. Diagrams in *De speculatione musicae* compound information, but normally only within one diagram. According to the reference to younger pupils, the *Quatuor principalia*, the treatise may have been intended for the instruction of a younger group of singers. If so, it is likely that the text was written to be read and understood by an adult instructor. The diagrams, however, would be ideal for establishing an elementary understanding for the division of pitch. For the same reason, Willelmus' *Breviarium regulare musicae* might have contained examples for the purpose of demonstration. *De speculatione musicae* was perhaps intended for a more mature audience, for those who needed a reference source from which new works could be written.

Diagrams were included in music treatises to enable facts to be learned easier through visual representations. The three Carolingian treatises investigated at the opening of this chapter revealed different purposes for the inclusion of diagrams. Hucbald intended for diagrams to clarify difficult concepts while, through the use of demonstrative pictures, Guido aspired to complement the imagination of his readers. Visual aids were often central to an explanation of complex ideas within medieval treatises. A classification of compounded diagrams identifies how multiple layers of information can be compacted into relatively small space. But space was not always the sole reason to create a diagram. If an idea was better represented through a series of images, then diagrams could extend onto different folios for demonstration. This layering was made by compounding information through a series of different images where, gradually, practical application of knowledge was imparted. Visual representations, then, were included in treatises, not only to explain what was being discussed in the text, but to invoke visual images in the mind which could eventually be used to produce something aural.

Diagrams, uniquely created to serve as pedagogical, memory aides or for recalling and processing information, were important features in medieval texts. Sometimes diagrams needed to conform to a standard, a tradition; elsewhere a unique representations were a personal interpretation of an intellectually complex subject. What is true is that diagrams transform texts into a world of visual images, providing another layer of complexity for the reader's comprehension.

This chapter offered a glimpse into the way in which theorists explained their ideas more clearly within medieval treatises. The final chapter will turn to another visual component abundantly discussed by theorists in the fourteenth century: music notation. The broad heuristic

approach found in the concluding chapter will reveal what was considered to be important debates to a larger body of English theorists when discussing the still developing forms of notation.

NOTATION IN FOURTEENTH-CENTURY ENGLAND

WITH INNOVATION COMES DISPUTE. The newly introduced notation, which determined the length and brevity of pitch within the symbol irrelevant of its context, brought with it a new purpose for writing music treatises: to explain how they work. The problem was that a new way of notating music was not readily accepted by those steadfast in tradition. What is noticeable in the music and treatises from England is that no standard form of notation existed in the period. Instead, the divergences from continental practice are closely related but independent.¹

¹ To understand the early developments of music notation, several seminal texts have been written. While studies of early music notation by Willi Apel (*The Notation of Polyphonic Music 900-1600* [Cambridge, Mass., 1959]) and Carl Parrish (*The Notation of Medieval Music* [London, 1958]) remain vital sources in their own right for early notation studies, their work is concerned with music notation from a longer era. Consequently, specific trends and anomalies which occur in certain regions tend to be overshadowed. Especially noticeable within both works is a discussion of fourteenth-century English notation which was in many ways distinct from continental notations. One place where some discussion of English notation occurs is in the *New Grove Dictionary of Music*. The discussion in Grove necessarily takes into consideration only some of the more prominent treatises to provide a broad overview of practices: aside from mentioning the evident presence and influence of Franco's teachings on notation, the article only includes works by Robert de Handlo, John Hanboys, and the treatise *Quatuor principalia* attributed to John of Tewkesbury. Though the selection texts was no doubt to serve the purpose of a generalised discussion, to provide an overview specifically of the currency of notation in fourteenth-century England, additional treatises should be considered (Ian Bent, et. al.,

In 1975, Margaret Bent commented on fourteenth-century notation in English music sources noting that English notation is considered to be provincial, compared especially to that which could be found in the rest of Western Europe.² Bent cautioned, however, that this assumption could prove to be problematic: an evaluation of English symbols based on continental notation leaves little room to discuss the significant anomalies within English notation that can be found amongst sources. On a more pragmatic level, the assumption that somehow English notation is the result of a variant somehow of French and Italian traditions is awkward since continental influence is difficult to find amongst the fragmented English repertoire. Instead Bent observes that music from fourteenth century England ‘seems to have remained quite separate in style, technique and notation until late in the [fourteenth] century.’³ In agreement with this observation in a later study is the work by Peter Lefferts who found that idiosyncrasies detected in notation from motet sources reveal an individual insular response that is parallel to notational problems among continental sources.⁴

‘Notation, III. 3’, *Grove Music Online. Oxford Music Online* [2001]). In some ways, what was happening in the development of music notation in the fourteenth century resembles changes of notational attitudes prevalent in modern times. The alteration of music notation witnessed in the twentieth century is frequently alluded to by composers and musicologists who note a parallelism with notational developments from the Middle Ages. Though a specific connection between the two contrasting periods can be refuted, the analogy can be useful to understand that a drastic change in how music was notated can be found in both centuries which resulted in texts which tried to explain a new practice (Kurt Stone, ‘Problems and Methods of Notation’, *Perspectives of New Music*, vol. 1 [1963], 9-31; Earle Brown, *The Notation and Performance of New Music*, unpublished manuscript, Earle Brown Music Foundation [1964]; Erhard Karkoschka, *Notation in New Music: A Critical Guide to Interpretation and Realisation*, trans. Ruth König [New York, 1972]; John Cage, *Notations* [New York, 1969]; Gardner Read, *Sourcebook of Proposed Music Notation Reforms* [New York, 1987]).

² Margaret Bent, ‘A Preliminary Assessment of the Independence of English Trecento Notations’, *L’Ars Nova Italiana del Trecento, iv: atti del 3o Congresso internazionale sul tema “La musical tempo del Boccaccio e i suoi rapporti con la letteratura”* ed. Agostino Ziino (Siena and Certaldo, 1978), 65.

³ Bent, ‘A Preliminary Assessment’ (Siena and Certaldo, 1978), 65.

⁴ Peter M. Lefferts, *The Motet in England in the Fourteenth Century* (Ann Arbor, 1986), 154.

TABLE 6.1 Fourteenth-century English music theory⁵

YEAR	AUTHOR	TITLE	MANUSCRIPT
1	c.1300	Walter of Evesham	<i>De speculatione musica</i> GB-Ccc 410; GB-Lbl Cotton Tiberius IX; GB-Lbl Add. 4909; GB-Lbl Add. 56486a
2	1326	Robertus de Handlo ⁶	<i>Regule</i> GB-Lbl Add 4909; GB-Lbl Add 8866
3	?	Anonymous ⁷	<i>Cum de mensurabili musica</i> GB-Lbl Add 21455
4	[c. 1330]	Johannes Torkesey ⁸	<i>Declaratio trianguli et scuti</i> GB-Lbl Add 21455; GB-Lbl Lansdowne 763; GB-Ctc O.9.29 (1441); I-Rrat Reg.lat.1146
5	c. 1350? ⁹	Anonymous ¹⁰	<i>Tractatus de figuris sive de notis</i> GB-Lbl Add. 4909; GB-Lbl Cotton Tiberius IX ¹¹ ; GB-Lbl/Royal 12 C VI
6	[before 1372] ¹²	Willelmus ¹³	<i>Breviarium regulare musicae</i> GB-Ob Bodley 842
7	[1351] ¹⁴	[John of Tewkesbury] ¹⁵	<i>Quatuor principalia</i> B-Gu 70; GB-Lbl Add 4909; GB-Lbl Add 8866; GB-Lbl Cotton Tiberius IX; GB-Ob Bodley 515; GB-Ob Digby 90
8	[post 1350]	Anonymous	<i>Commentum Oxoniense</i> GB-Oas MS 90; GB-Ob Bodley 77
9	c. 1370	Johannes Hanboys	<i>Summa</i> GB-Lbl Add 8866
10	c. 1422	Thomas Walsingham ¹⁶	<i>Regulae de musica mensurabili</i> GB-Lbl Lansdowne 763
11	c. 1430	Anonymous ¹⁷	<i>De origine et effectu musicae</i> ¹⁸ GB-Lbl Lansdowne 763; GB-Ob Bodley 515

⁵ A chronology, altered here to reflect the most recent scholarship, is taken from Peter M. Lefferts *Robertus de Handlo, Regule and Johannes Hanboys, Summa: A new critical text and translation on facing pages* (Lincoln, 1991).

⁶ Lefferts, *Robertus de Handlo, Regule*, 2-4.

⁷ Though once attributed to de Vitry, Sarah Fuller has more recently concluded that it is not possible that this work had connection to the Vitry treatises. See: Sarah Fuller, 'A Phantom Treatise of the Fourteenth Century? The Ars Nova', *The Journal of Musicology*, vol. 4 (1985-1986), 27. The edition of the text can be found in Philippi de Vitriaco, *Ars Nova*, ed. Gilbert Reaney, André Gilles and Jean Maillard, *CSM* 8 (Rome, 1964), 71-78.

⁸ Johannes Torkesey, *Declaratio trianguli et scuti*, ed. André Gilles & Gilbert Reaney, *CSM* 12 (Rome, 1966), 55-63.

⁹ Reaney notes in his edition (*CSM* 12, 35-36) that several dates and possible authors for this treatise have been proposed including Wolf's date of around 1330 and Riemann's proposal that it was the work of Walter of Evesham. See: J. Wolf, *Geschichte der Mensural-Notation I* (Leipzig, 1904), 73; H. Riemann, *Geschichte der Musiktheorie* (Leipzig, 1921), 277. It is now believed that this text could not have been by Walter.

¹⁰ This treatise is known as London I or Coussemaker VI. Anonymous, *Tractatus de Figuris sive de notis*, ed. Gilbert Reaney, *CSM* 12 (Rome, 1966), 35-51.

¹¹ The section to which this treatise would have been preserved in is the manuscript *GB-Lbl CT B9*, which no longer exists. It can now be found in transcribed in *GB-Lbl Add. 4909*.

¹² This date is based on the description of a manuscript in the library records from the Augustinian Friar's library in York and proposes that a manuscript containing works now preserved in *GB-Ob Bodley 842* would have been available before this time. See fn. 63 in Chapter 3 of the present thesis.

¹³ Willelmus, *Breviarium regulare musicae*, ed. Gilbert Reaney, in *Ms. Oxford, Bodley 842 etc.* (Rome, 1966), 5-31.

¹⁴ The date is as given in *GB-OB Digby 90*.

¹⁵ Luminita F. Aluas, 'The "Quatuor Principalia Musicae": A Critical Edition and Translation, with Introduction and Commentary' (Ph.D Diss., Indiana University, 1996).

¹⁶ Thomas Walsingham, *Regulae de musica mensurabili*, ed. Gilbert Reaney, *CSM* 31 (Neuhausen-Stuttgart, 1983), 74-98. For a discussion of the three treatises in English found in BL, Lansdowne 763 see: Sanford B. Meech, 'Three Musical Treatises in English from a Fifteenth-century Manuscript', *Speculum*, vol. 10, no. 3 (Jul., 1935), 235-269.

¹⁷ Reaney, 'The Anonymous Treatise *De origine et effectu musicae*', 109-119.

¹⁸ *Ibid.*, 101-119.

In her dissertation on the semiminim, Karen Cook gives an invaluable demonstration of how theorists dealt with the smallest notational value in the fourteenth century. Of the thirty-five treatises from various regions in Western Europe explored, Cook shows that English theorists are separated from theorists in the use of the word semiminim for the smallest note value.¹⁹ Instead, twenty-seven theorists refer to the smallest note value through this term, of which, six give a term that could be used as a substitute. Three do not have any given name for the smallest note. But five authors, all English, use alternative names such as the *crocheta*, *simpla*, *semiminor*, or *minim* in the place of the semiminim more commonly found in continental treatises.²⁰ Cook concludes that the English theorists seemed to have preferred their own terminology, thus separating themselves, knowingly or unknowingly, from their continental contemporaries.²¹ This observation gives rise to the possibility that within England an insular musical language which was developing in the fourteenth century existed.

In yet another approach to a discussion of notation, Dorit Tanay offers a contextual overview of the intellectual debates dominant in medieval Western Europe. Tanay notes that a general shift of discussion among theorists writing in the fourteenth century, with an agenda to establish definitions for newly developed notations, was prevalent. Among concerns was the division of measured units, especially at the smallest point. The question was how music notation could relate to the division of time into smaller units. The established terminology of notation was considered problematic and in many ways insufficient because of an impossibility to give a name to the

¹⁹ For a list of the treatises consulted, see: Karen Cook, 'Theoretical Treatments of the Semiminim in a Changing Notational World c. 1315-c.1440' (Ph.D diss., Duke University, 2012), 94-95.

²⁰ Karen Cook, 'Theoretical Treatments of the Semiminim in a Changing Notational World c.1315-c.1440' (Ph.D diss., Duke University, 2012), 85.

²¹ A further discussion on the development of terminology amongst theorists across Western Europe can be found in the conclusions presented by Karen Cook, 'Theoretical Treatments of the Semiminim', 85-93.

division of the smallest note value. Theorists, such as Johannes de Muris, argued that nothing could be smaller than the smallest, or in their terms the *minima*, since this was already the smallest possible division and nothing could be smaller than the smallest.²² To put it simply, since the word *minima* was already in use, it was now up to theorists to assign a new word to a unit which divided time into an even smaller unit. Tanay shows through her work that an understanding of each theorist's perception of time is crucial when attempting a comprehension for the significance of any given work from the fourteenth century.²³

Keeping this observation in mind, this chapter will make a brief study which investigates only English music treatises. Examining the terminology used by English authors will help to establish the level of diversity found within theoretical texts. I begin a discussion of notation by first describing how individual theorists addressed the various instruction of notation in their respective treatises.

English theorists and notation

In the concluding chapters of *De speculatione musicae*, Walter introduces music notation in his treatise. Taking note that what was previously called the *virga* and *punctus* are now called the *longa* and *brevis*, the opening of the chapter on notation establishes a new set of terminology for the reader:

Morosa longa vocatur, quae prius virga dicitur:
Velox vero vocatur brevis, quae prius dicitur punctus:²⁴

The slow is called a *longa* which was previously called the *virga*.
The fast is called *brevis* which was previously called *punctus*.

²² Dorit Tanay, *Noting Music, Marking Culture: The Intellectual Context of Rhythmic Notation, 1250-1400* (Holzgerlingen, 1999), 102-130. On Muris see: Ulrich Michels, *Die Musiktractate Des Johannes De Muris: Quellenkritik Und Besprechungen* (Wiesbaden, 1970).

²³ Tanay, *Noting Music, Marking Culture*, 106.

²⁴ *GB-Ccc 410*, f. 30v; Walter Odington, *Summa*, 126.

The reference to previous terminology here points to the names already given to notation in the penultimate section, where discussion of chant neumes take place.²⁵ At this point, the greatest length of duration is the *duplex longa*. Half of its value is the *longa* which is capable of being perfected or imperfected. The *brevis* may be divided into two semibreves, but according to some musicians, whom Walter calls the *moderni*,²⁶ some divide the note into two while others suggest to divide the *brevis* into three:

Brevis vero apud priores resoluta est in duas semibreves, sic vocatas a re: apud modernos aliquando in tres, aliquando in duas.²⁷

The breve, moreover, was in the earlier writers resolved into two semibreves, which are named for that fact; but by the moderns it is resolved sometimes into two, sometimes into three.

Until this point, little dispute has resulted for how music notation should or should not be divided. Instead, Walter simply states what is commonly among other theoretical writings. Yet it is the further division of notation beyond the *brevis* which necessitates an explanation to expound upon the divisibility of time and how this relates to a smaller division of notation.

For Walter, the possibility of infinity was to play a key role in justifying the existence of smaller rhythmic values so the division of time may be represented in musical notation through the following ways:

Rursumque invenitur brevis divisa in sex vel septem partes, quas adhuc semibreves vocant minus iuste; sed quia continuum est divisibile in infinitum, et tempus

²⁵ Though it is in Part VI of *De speculatione musicae* that Walter begins a discussion of notation, beginning with the three basic primary values as was set out by Franco, the *longa*, the *brevis* and the *semibrevis*, it is in the second chapter of Part V that a discussion of chant notation originally is made. Here, the reader is familiarised with the names and figures of chant neumes: first is the *punctum*, which, when doubled becomes *bipunctum* and tripled become *tripunctum*. Second is the *apostropha* and *virga* which is given as duplication and triplication. The names and their symbols are given in this way until the author reaches the *semitonus virga*. *GB-Ccc 410*, ff. 20r-20v; Walter Odington, *Summa*, 93.

²⁶ Walter's use of *moderni* here is interesting since for him, the modern practice referred to here are those writing in the late thirteenth century.

²⁷ *GB-Ccc 410*, f. 31r; Walter Odington, *Summa*, 128.

contrariorum est, voces quidem sunt mensurate temporibus, quare divisibiles erunt in infinitum.²⁸

And again, the breve is found divided into six or seven parts, which are still called semibreves, though with less justification. But because a continuum can be divided infinitely and time is a continuum, and because notes are measured in units of time, notes will therefore be infinitely divisible.

Here Walter adopts the Aristotelian perspective that time is infinitely divisible. To provide the clearest terminology for this distinction, the description implies that an infinite division of time could be applied to the division of musical time, and thus to its notation:

Sicut ergo longa in breves et brevis in semibreves dividitur, ita semibreve primo divido in tres partes quas minutas voco [...]²⁹

Therefore just as the long is divided into breves and the breves into semibreves, therefore I first divide the semibreve into three parts which I call *minutas*.

Having thus justified smaller divisions of notation, Walter divides the breve further into a semibreve and the semibreve into a *minuta* thus re-naming the smallest notation.³⁰ This defining of time was considered necessary because it was through its establishment that Walter was able to fully engage with the reason why certain notations could be divided into smaller units. He considered time to be infinitely divisible, and by allowing no restrictions to the smallest unit, eliminated the problem that notation could not be smaller than the smallest, the exact point of contention that many theorists faced.

Robert de Handlo was not as concerned as Walter to precisely define the smallest unit. He was, however, interested in distinguishing notation by discerning their perfected and imperfect

²⁸ *Ibid.*

²⁹ *Ibid.*

³⁰ According to Tanay's opinion, Walter's proposal for naming the smallest note unit as *minuta* shows that he (and other English theorists) 'had a better grasp of the relationship between the language of theory and rhythmic reality, or between the measure and that which is measured.' Tanay, *Noting Music, Marking Culture*, 127.

qualities. The treatise simply titled 'Rules' (*Regule*) by Handlo is based on a number of different authorities, but is primarily on Franco of Cologne's *Ars cantus mensurabilis*.³¹ Handlo's writing contains no speculative aspects of music and is generally considered to have been used for the practical instruction of notation.³²

The range of notation in *Regule* is divided from the *duplex longa* at the longest until the *minima* at the smallest. And it is from the longest note values that Handlo proposed eight rules under his rubric for the primary note values *longa*, *brevis* and *semibrevis*. The *longa* is a square note with a stem to the right, but depending on whether it is ascending or descending, it will be given a different name: simply *longa* if it is descending, *longa erecta* if it is ascending. The *longa* can be plicated in its imperfect or perfected condition. The *brevis* lacks any stem unless it is a *brevis erecta* with an ascending stem on the left or if the normal breve is plicated – however, the *brevis erecta* cannot be plicated. The *semibrevis* is in the shape of a lozenge and can only be plicated when three are in succession.

One distinction is especially unique to Handlo: the distinction of the *longa* into imperfect and perfect. According to Franco, the *longa* was to be worth three *tempora* (or units of time) if it is succeeded by another *longa*, and is called a perfect *longa*. The imperfect *longa*, on the other hand, has two *tempora*. To give distinction between *longa*, Handlo denotes *semilonga* for the imperfect

³¹ Lefferts, *Robertus de Handlo Regule*, 9.

³² Handlo's *Regule*, however, only discusses mensural notation. Though it is expansive on this topic, it does not contain a discussion of any further notational forms and thus is not as expansive in content as *De speculatione musica*.

to make a clear distinction between the two.³³ Though such a distinction would have surely been useful, his definition cannot be found in any other fourteenth-century English treatise.³⁴

The short treatise *Cum de mensurabili musica sit nostra presens intentio*³⁵ by an anonymous author, for example, could have differentiated between imperfection and perfection but neglects to do so. The three simple figures of notation here are the *longa*, the *brevis* and the *semibrevis*, the divisions which, according to the anonymous author, had been attributed to the teachings of Philippe de Vitry.³⁶ According to this theorist the *longa* may have ascending or descending stems and may be plicated. The *brevis* is a note without a stem and can also be plicated. The *semibrevis* is introduced as a notation in the shape of a lozenge. Having established this, the anonymous author sets out to provide detailed descriptions for perfection and imperfection of notes, culminating in the end with examples of the relationships between music notation. The author did not take Handlo's term *semilonga* and it is difficult to assess the readership of this tract.

³³ *Longa*, quando imperfecta est, semilonga magis proprie, et si perfecta, longam dici oportebit.

[A *longa*, when it is imperfect, more properly will have to be said to be a *semilonga*, and if perfect, a *longa*.] Lefferts, *Robertus de Handlo Regule*, 88-89.

³⁴ Because the term is not found in any other English treatise from the fourteenth century, it has been suggested that Handlo had some influence from continental treatises. Other fourteenth-century treatises which refer to the imperfed long as the *semilonga* are: Coussemaker's Anonymous VI, *De musica mensurabili*; Anonymous, *De expositione musicæ*; The Anonymous of St. Emmeram, *De musica mensurata*; Jacobus, *Speculum musicæ*; Johannes de Muris, *Notitia artis musicæ*; Johannes de Muris, *De practica musica, seu de mensurabili*; and Petrus de Sancto Dionysio, *Tractatus de musica*. The present discussion is limited to English treatises, thus further comment on the treatises examined will not be made here. It is not until the early fifteenth-century *Regulae de musica mensurabili* by Thomas Walsingham that the term returns to use. Handlo is thought have taken this terminology from a theorist who is otherwise unknown to us, Petrus le Viser. For commentary on this theorist, see: Lefferts, *Robertus de Handlo Regule*, 22-24 & 105.

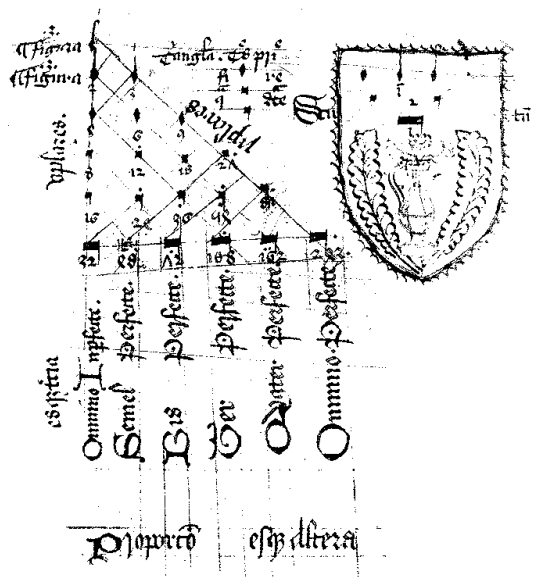
³⁵ *GB-LblAdd. 21455*, ff. 3r-6r. A transcription can be found on *TML* at http://www.chmtl.indiana.edu/tml/14th/ANOMM_MLBL2145.html [last accessed 19 March 2014].

³⁶ Though once attributed to de Vitry, Sarah Fuller has more recently concluded that it is unlikely that the treatise has any connections to the Vitry treatises. See: Sarah Fuller, 'A Phantom Treatise of the Fourteenth Century? The Ars Nova', *The Journal of Musicology*, vol. 4 (1985-1986), 23-50 at 27. Edition in Philippi de Vitriaco, *Ars Nova*, ed. Gilbert Reaney, André Gilles and Jean Maillard, *CSM* 8 ([Rome], 1964), 71-78; Ulrich Michels, 'Der Musiktraktat des Anonymus OP: ein frühes Theoretiker-Zeugnis der Ars Nova', *Archive für Musikwissenschaft* 26 (1969), 49-62.

In contrast, the treatise by Johannes Torkesey enjoyed some degree of popularity among theorists in subsequent decades.³⁷ The range of notation in *Declaratio trianguli et scuti* contains for the first time in English treatises the term *larga* in lieu of the *duplex longa* and the *simpla* alongside the *minima*. The extension of the smallest note value to *simpla* or *semiminima* (which was considered as the primary notation for alternative calculations of proportions), is noteworthy. Upon considering innovative methods for pedagogical instructions of notation, this treatise offers original as well practical means of explanation that was widely accepted by other theorists.

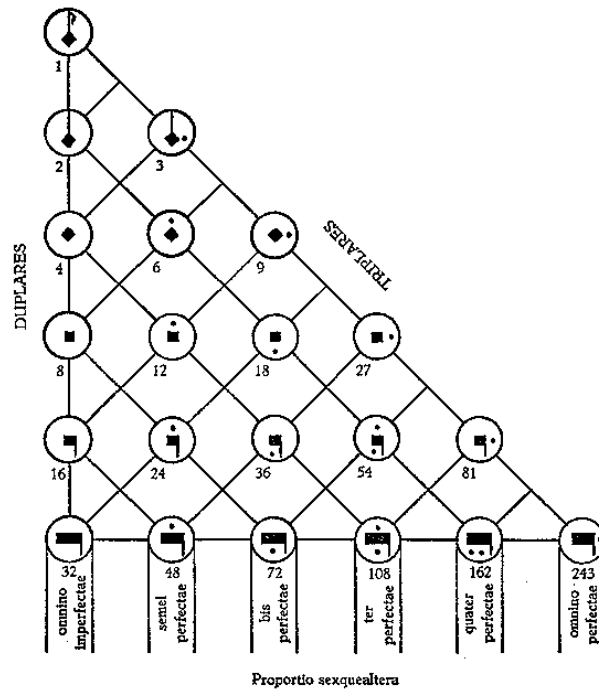
The four short chapters in *Declaratio trianguli et scuti* expound on the principles of notation but it is the diagrams that became the most useful. In the fourth chapter, Torkesey introduces musical notation in four different mnemonic diagrams: in the first, the three primary notes, the *longa*, the *brevis* and the *semibrevis*. In the second, the six species of notation are the *larga*, the *longa*, the *brevis*, the *semibrevis*, the *minima* and the *simpla*. Thirdly, musical notation is represented with their corresponding rests, including the dot of addition to signify their perfected condition. Included is the triangular diagram and shield for which Torkesey is most renowned (Example 6.1).

³⁷ Although few sources of biographical information on the author survive, Johannes Torkesey he is thought to have flourished sometime in the third decade of the fourteenth century because Willelmus' *Breviarium regulare musicae* expands Torkesey's triangle found in his treatise. Ronald Woodley, 'John Torkesey', *Grove Music Online* (2001) (accessed 4 June 2012). The inclusion of Torkesey's triangle can be found in a later music treatise, Robert Fludd's *Utriusque cosmi...historia*, published in 1617-1618. The triangle can be found in the centre-left section of his 'Temple of Music', a mnemonic device for musicians. A scholarly discussion of Fludd's work from a musicological perspective is still in its infancy. More recently, the treatise which follows this image has been translated into English: Peter Hauge, *'The Temple of Music' by Robert Fludd* (Farnham, 2011).



EXAMPLE 6.1 Torkesey's mnemonic diagrams for notation (*GB-Lbl* Lansdowne 763, f. 89v)

As a mnemonic device, Torkesey's triangular diagram is a didactic tool to learn the relationship of music notation. As shown in the example below, imperfect notation is lined up on the right side of the triangle. Here, all of the notes are depicted in relation to the smallest note value, the *simpla*. The diagram shows that two *simpla* can be found in one *minima*, four in a *semibrevis*, eight in a *brevis* and so on until it reaches the *larga* which includes 32 *simpla*. At the first perfection, the *minima* shows three *simpla* by the Arabic numeral adjacent in the diagram and by the dot of addition. The diagram continues in this way in different stages of perfections until it reaches the perfected *larga*, labelled as *omnio perfectae*, which contains 243 *simpla* (see Example 6.2, below).

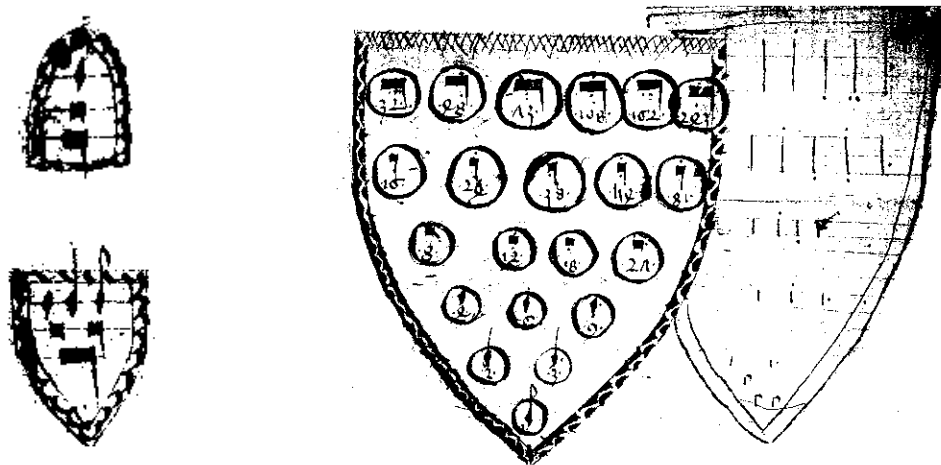


EXAMPLE 6.2 Four notation diagrams from *Declaratio trianguli et scuti*³⁸

Three sources containing Torkesey's *Declaratio trianguli*, all depicting different interpretations of Torkesey's mnemonic device for the perfection and imperfection of notation, exist.³⁹ London, British Library, Additional 21455 (*GB-Lbl Add. 21455*) encases all of the four diagrams with notation in shields, combining the diagram with rests with the diagram of perfection and imperfection (see Example 6.3, below). To better depict the image of a shield, the triangular diagram has been inverted in this diagram. The *scuti*, or shields found in this manuscript reveal a creative interpretation of the treatises' name.

³⁸ Johannes Torkesey, *Declaratio trianguli et scuti*, in *Ms. Oxford, Bodley 842 etc. CSM 12* ([Rome], 1966), 60-61.

³⁹ The modern edition by André Gilles and Gilbert Reaney reproduce the diagrams as they are found in Edmond de Coussemaker's edition which have been reproduced here in Example 6.2. This diagram is based on two manuscripts, *I-Rvat Reg. lat. 1146*, ff. 55v-57r and *GB-Ctc 1441*, ff. 53v-55r. The other sources containing *Declaratio trianguli* are *GB-Lbl Lansdowne 763* and *GB-Lbl Add. 21455*.



EXAMPLE 6.3 Three shields of notation *GB-Lbl* Add. 21455, ff. 7v, 8r.

Not all authors presented ideas in the same clearly defined manner or with extra definition. Some only presented the notation. The three chapters of *Tractatus de figuris sive de notis* by an anonymous author is a concise work on the three primary note values, the *longa*, the *brevis*, and the *semibrevis*.⁴⁰ Unlike the treatises already mentioned above where the largest note value is discussed prior to a subdivision into the smallest, the three chapters here progress from the smallest note value to the largest: chapter one is on the *minima*, chapter two on the *semibrevis*, and chapter three on the *brevis*.⁴¹ It is easy to assume that the treatise could have continued onto other note types, or may have been taken from another exemplar treatise since the third chapter merely ends in the same manner as the other two without any firm conclusion.⁴²

⁴⁰ Anonymous, *Tractatus de figuris sive notis*, in *Ms. Oxford, Bodley 842 etc.* CSM 12 ([Rome], 1966), 33-51. *GB-Lbl* Royal C. VI, ff. 54r-58r. An eighteenth-century copy of the treatise can be found in *GB-Lbl* Add. 4909, ff. 98r-104v (copied out originally from *GB-Lbl* CT B9).

⁴¹ Unlike chapters two and three, the first chapter does not end with a finishing sentence. Moreover, in the manuscript, only the first chapter is indicated. The additional chapter indications in the most recent edition had been made by Reaney for the ease of the modern reader.

⁴² The end of the third chapter is noted 'Et sic finitur capitulum tertium' in the same way as the second. Had this been the end of the entire treatise, one might have supposed that an explicit to conclude the entire work would have been added.

Though little discussion beyond notation can be found, what is in this treatise is a detailed descriptions of the three primary note values are given in each chapter. The *minima* can be *recta* or *altera* based on the adjacent note, but cannot be perfected or imperfected on its own, since the *minima* is not divisible by three. The possibilities of its function in relation to the other note values and their perfected or imperfected state is expanded to include the rest.

Terminological dispute is evident in the second chapter as the anonymous author wrestles with the name given to the *semibrevis*. As for the figure of the semibreve, he finds no fault and refers to it, as the earlier theorists already discussed above, as the shape of the lozenge.⁴³ Not only does he propose that the *semibrevis* be called *brevior* (shorter than a breve), he suggests an alternative name for the *minima*, *brevissima* (the shortest).⁴⁴ Following this the author takes issue with the term *larga* and proposes instead an alternative nomenclature based on *longa*. So, according to this author, the notes should be named *brevis* (short), *brevior* (shorter) and *brevissima* (shortest) and *longa* (long), *longior* (longer) and *longissima* (longest).

Having settled the new terminology, the author resumes discussion of the possible functions of the semibreve. The semibreve is considered to be *recta* and *altera*. Two *recta semibrevis*, one which is perfect and another which is imperfect, exist. The perfect *semibrevis*, which is composed of three *minima*, can only be imperfected by a *minima* (either by a note or rest of this duration) which follows or precedes it.⁴⁵ Similarly, the properties for the imperfected *semibrevis* are given: since it is already imperfected, the notation is not possible to be imperfected further but it

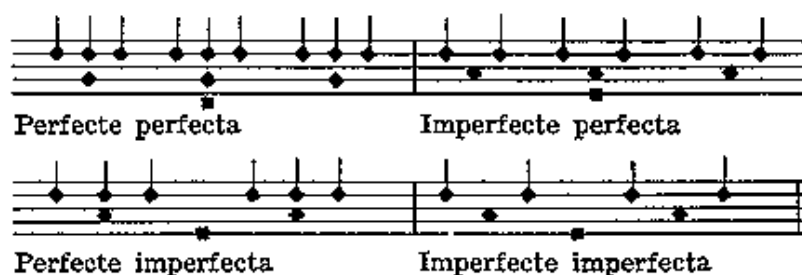
⁴³ The semibreve is referred to as being the shape of the lozenge (a parallelogram which is the shape of a diamond) as can be found in the shield (*et figuratur ad modum losengae in scuto*). This reference to a shield led Reaney to suggest that the author was Johannes Torkesey himself, since it is only in his *Declaratio trianguli et scuti* that contains a reference to a shield. If this reference to *scutum* can be an indication for dating this treatise, then it may have been a work which was authored sometime around the middle of the fourteenth century. See Anonymous, *Tractatus de figuris*, 35-36.

⁴⁴ Anonymous, *Tractatus de figuris*, 44.

⁴⁵ *Ibid.*, 44-45.

is possible to perfect an imperfedted *semibrevis* either by a *minima* (by a note or rest of the duration) or through a dot of perfection.⁴⁶ As with the previous chapter, this one closes with the position of its corresponding symbols for rests.

On the *brevis*, the author notes that it may be simple or plicated. The *brevis* is either perfected or imperfedted. The level of perfection or imperfection, is of course, dependent on the division of the notation. Aside from a verbal description, the chapter includes extensive visual representations of the relationships between note values and their various levels of perfection and imperfection (Example 6.4):



EXAMPLE 6.4 The perfection and imperfection of the brevis⁴⁷

Once more, the author is dissatisfied with how the four qualities of the *brevis*, rather than the semibreve or *minima*, is the standard measurement of perfection or imperfection.⁴⁸ The author considers that the *semibrevis* should be the centre of measurement since it directly relates to both the *brevis* and the *minima*. If the short treatise originally contained notation beyond the *brevis*, it is possible that the author discussed this issue further with the *longa*. What remains of his work, however, is only that which focuses on the equivalent *brevis* rests and their place on the staff.

⁴⁶ *Ibid.*, 45.

⁴⁷ *Ibid.*, 50.

⁴⁸ Anonymous, *Tractatus de figuris*, 47.

A different form of disputation arguing for new notational terminology was Willelmus who shows a personal commitment to the task at hand. Though ready to present his own opinions which he is clearly convinced to be correct, Willelmus reveals an obsession of authoritative texts written before his time.⁴⁹ Interestingly, he is more interested in presenting a disputation rather than a systemised presentation of notation:⁵⁰ he presents the different aspects of notation through distinctions and rules which rely on previous author's works. In one sentence, however, Willelmus lists more divisions of notation used by any of his predecessor or successor, save for the fifteenth-century treatise by Thomas Walsingham.

The first distinction states that all notes are either simple or *secunda (ominis nota vel est simpla vel est secunda)*.⁵¹ A 'simple' note is the smallest possible, which in Willelmus' case is the *semiminima*, and it is implied that they are simple because they are not divisible further. Because the other notes might be divided into smaller parts, they are *nota secunda*. The second distinction defines the difference between individual notes, called *separata* here, and notes which are ligatures, *ligata*. In the third distinction, Willelmus relies on Walter's definition for fast notes (*velox nota*) and slow ones (*tarda nota*). In the fourth distinction, it is stated that all notes might be either plan (*nota plana*) or plicated (*nota plicata*), for which Willelmus refers to Franco's definition on the matter.⁵² According to the fifth distinction, all notes except for the largest, *largissima*, may be *recta*

⁴⁹ Gilbert Reaney has already pointed out how adamant Willelmus is when it comes to impressing his readers with his knowledge of authority. Willelmus, *Breviarium regulare musicae*, ed. Gilbert Reaney, in *Ms. Oxford, Bodley 842 etc.* CSM 12 ([Rome], 1966), 8-9.

⁵⁰ It was pointed out to me by Yuichi Akae that the disputations made in Willelmus' treatise resemble sermons given at York at about the same time. Further comparison of disputation between medieval sermons and music treatises may point to another milieu of discussion but is out of the scope of the present discussion. For an example of the composition of medieval sermons see: Yuichi Akae, 'Between *Artes praedicandi* and Actual Sermons: Robert of Basevorn's *Forma praedicandi* and the Sermons of John Waldeby, OESA', *Constructing the Medieval Sermon*, ed. Roger Andersson (Turnhout, 2007), 9-32.

⁵¹ *Ibid.*, 23.

⁵² The quote can be found in the same manuscript, *GB-Ob Bodley 842*, at f. 52v.

or *altera*, referred to as *minor* or *maior*. The sixth distinction is an extended commentary on the perfection or imperfection of all notes which are *nota secunda*, i.e. every notation except the semiminim, which is heavily influenced by the teachings of Franco, Walter and Johannes Torkesey.⁵³ And finally, all notation is either independent of others (*solitaria*) or are united (*sociata*). Willelmus' classification of notation in his treatise is of great interest. This will be further investigated in the second part of this chapter.

Similar to Walter's *De speculatione musicae*, though with different content and objective,⁵⁴ the author of the *Quatuor principalia* leaves a discussion of musical notation until the fourth and last section in his treatise. The author's primary notes, the *longa*, *brevis* and *semibrevis*, from which he begins, like the *Tractatus de figuris sive de notis* mentioned above, with the smallest note, the *minima*: though an increase division of notation is possible in infinity, the smallest unit to which one might be able to divide is the minim.⁵⁵ Upon embarking on a more extensive explanation of notation, which is followed by several chapters on the emergence of measured notation and how the voice plays a part in the distinction of shapes, notation is defined as being of two kinds: simple and composite.⁵⁶ The inclusion of the *minima* extends into smaller units in addition to the three basic note values set out by Franco, a point which is made in chapter seven of the fundamental. The subsequent chapters take musical notations in this order, partially based on the reason given below:

Quod longe notule dicuntur simpliciores brevibus et semibrevis, in hoc solummodo apparet, quia breves et semibreves ac minime difficiliores sunt ad pronunciandum quam longe, et ideo a longis tanquam a simplicioribus et levioribus inchoandum est.⁵⁷

⁵³ For more on this discussion, see Chapter 5.

⁵⁴ See Chapter 5 for how the two treatises differed.

⁵⁵ Luminita F. Aluas, 'The 'Quatuor Principalia Musicae': A Critical Edition and Translation, with Introduction and Commentary' (Ph.D Diss., Indiana University, 1996), 373-375.

⁵⁶ *Ibid.*, 379.

⁵⁷ Aluas, 'The Quatuor Principalia Musicae', 380.

The long notes are said to be simpler than breves and semibreves appear in this way only: the breves, semibreves, and minimas are more difficult to pronounce⁵⁸ than the longae; on that account it must be commenced from the longae, as the simplest and easiest.⁵⁹

Longa are divided into three different shapes: the *triplex longa*, the *duplex longa* and the *simplex longa*. The *simplex longa* has either ascending or descending stems while the *triplex longa* and *duplex longa* have stems to the right. The *brevis* is a note without stems; the *semibrevis* as a lozenge which sometimes has stems when placed in ligatures; the sign of the smallest note is given as a note-head shaped as a lozenge and a stem.

Modernisation of terminology is especially apparent in the justification of the *minima*. The new authority whose approval becomes crucial on this note is Philippe de Vitry. According to the author of *Quatuor principalia*, this ‘flower of the musicians of all the world’⁶⁰ justifies the smaller division of notation within his music. The *Quatuor principalia* never mentions the treatise attributed to the theorist though the musical examples by the composer seem to have been well known by the author. Though clearly engaged with the discussion of small notation, already indicative by opening the chapter with the smallest note value, the range of notation and their smaller divisions is surprisingly limited, especially compared to those found in the *Breviarium regulare musicæ* and Torkesey’s triangles.

Finally, a late fourteenth-century English theorist shows that even at the end of the century it was still considered necessary to clarify new terms of notation. Writing late in the century was Johannes Hanboys who modernised what theorists wrote before his time.⁶¹ Though referred to as

⁵⁸ The word *pronuntio* implies a public declaration.

⁵⁹ Aluas, ‘The Quatuor Principalia Musicæ’, 654-655.

⁶⁰ ‘Philippo de Vitriaco qui fuit flos tocius mundi musicorum,’ *Ibid.*, 382; 656.

⁶¹ Like the account for Walter of Evesham, the accounts of Hanboys’ musical abilities are noted among all of the early antiquarians. Beginning with John Bale, the existing secondary literature for the biography of Hanboys comes from somewhat erroneous accounts. The accounts by the earliest English antiquarians (John Bale [1548]; Raphael

a *Summa*, Hanboys' treatise is mainly concerned with music notation and leaves little room for other discussions surrounding *musica*. Hanboys' writing on music is primarily based Franco's notation and it is clear that the three primary note values of the *longa*, *brevis*, and *semibrevis* presented in Franco's treatise became no longer sufficient for the modern musician. It was therefore Hanboys' intention to expand on the previous authority. This will be explored in more detail soon.

Hanboys thus extends the range of note types to include the *larga* while proposing to include the *crocheta* as a note-value, stating the need to change its name. The concluding statement at the end of the first chapter states that the *minima* is changed to be called the *minor* 'since it is smaller than a semibrevis.'⁶² The *crocheta* is given a new name, *semiminor*, before the now 'updated' notational terminology is presented in order: *larga*, *duplex longa*, *longa*, *brevis*, *semibrevis*, *minor*, *semiminor*, and *minima*. Further, according to Hanboys *semibrevis* are separable into four, five, six, seven, eight, or nine divisions while still maintaining the quality of one *brevis*.⁶³ Furthermore, *semibrevis* can be either 'major, minor or equal, *minorata* and *minima*' and *brevis* is to be 'worth a major and a minor, or three minors (and then they are equals), or three *minimae* mixed with three *minoratae*, or nine *minimae*.'⁶⁴

Holinshed [1577]; John Pits [1619] & Thomas Tanner [1748]) all place the theorist in the fifteenth century. Margaret Bent and Peter Lefferts agree that the treatise should be placed at the end of the fourteenth century, around 1370. The single manuscript which contains Hanboys' *Summa* has been located in the British Library since 1831. See: Lefferts, *Robertus de Handlo*, 30-38; Bent, et. al., 'Notation', *Grove Music Online* [Last accessed 29 July 2012]; Roger Bowers, 'Fixed Points in the Chronology of English Fourteenth-century Polyphony', *Music & Letters*, vol. 71 (1990), 325-326; Brian Trowell, 'A Fourteenth-century Ceremonial Motet and Its Composer,' *Acta Musicologica*, vol. 29 (1957), 65-75; Margaret Bent, 'The Transmission of English Music 1300-1500: Some Aspects of Repertory and Presentation', *Studien zur Tradition in der Musik. Kurt von Fischer zum 60 Geburtstag* (1974), 65-83, at 71-72.

⁶² 'Et vocatur minor eo quod minor est semibrevis.' Lefferts, *Robertus de Handlo*, 192-193.

⁶³ Lefferts, *Robertus de Handlo*, 263.

⁶⁴ *Ibid.*, 265.

Some preliminary conclusions

It is apparent from the theorists writing that most took Franco's three note values the *longa*, the *brevis* and the *semibrevis* as a starting point from which they built their own discussions. More conservative theorists such as Walter of Evesham, the author of *Cum de mensurabili musica* and the author of *Quatuor principalia* tend to avoid any further additions. Table 6.1 (below) summarises what has been investigated in this chapter so far. reveals the inconsistencies of terminology within fourteenth-century English treatises. A glance at the table below already indicates that the range of terminology used among English theorists was expansive and varied. As the table shows, only the *longa*, the *brevis* and the *semibrevis* remain unquestioned by all theorists. Willelmus, whose names are the most extensive of all theorists, indicates that the *largissima* is the longest possible note duration while the *Declaratio trianguli et scuti*, *Breviarium regulare musicae* and the *Summa* are the only treatises which include an alternative term for the smallest note value. The term *minuta* was used only by Walter and Willelmus. Willelmus knew Walter's writing intimately, and so it is not surprising that he would have incorporated this term into his own treatise.⁶⁵ This in turn indicates that the term *minima* was far more common among English theorists.

It is concluded so far that among English theorists no uniformity of terminology existed. Instead, English theorists writing treatises in the fourteenth century had a wide range of terminology which they applied to notation. The only notes which are retained across the spectrum are those set out already by Franco, the *longa*, the *brevis* and the *semibrevis*.

⁶⁵ See Chapter 4.

NOTATION	NAME	1	2	3	4	5	6	7	8
Long	<i>Largissima</i>						x		
	<i>Largior</i>								
	<i>Larga</i>				x	x	x		x
	<i>Duplex longa</i>	x	x	x		x		x	x
	<i>Longa</i>	x	x	x	x	x	x	x	x
Breve	<i>Semilonga</i>		x						
	<i>Brevis</i>	x	x	x	x	x	x	x	x
	<i>Minorata</i>		x						x
Semibreve	<i>Semibrevis</i>	x	x	x	x	x	x	x	x
Minim	<i>Minuta</i>	x					x		
	<i>Minima</i>		x	x	x	x		x	x
Semi-minima	<i>Simpla</i>				x		x		
	<i>Crocheta</i>						x		x
Plica	<i>Plica</i>	x	x	x		x	x	x	x
Ligature	<i>Ligatura</i>	x	x	x				x	x
Rests	<i>Pausa</i>	x	x	x	x	x	x	x	x

TABLE 6.2 Notation found in English treatises from the fourteenth century

1. Walter of Evesham, *De speculatione musica*
2. Robertus de Handlo, *Regule*
3. Anonymous, *Cum de mensurabili musica sit nostra presens intentio*
4. Johannes Torkesey, *Declaratio trianguli et scuti*
5. Anonymous, *Tractatus de figuris sive de notis*
6. Willelmus, *Breviarium regulare musica*
7. John of Tewkesbury, *Quatuor principalia*
8. Johannes Hanboys, *Summa*

What has not become apparent in the survey above is the way in which certain English theorists adapted writings by earlier English authors to accommodate the change in practice. The remainder of this chapter will investigate how a terminological debate and the quest for standardisation became a point of interest to two theorists.

The terminological issues as presented by Hanboys

The writings of Handlo and Hanboys are representative of an English discourse on music notation.⁶⁶ Most likely written half a century apart from each other, the theorists are exclusively concerned with mensural notation. Handlo's treatise was completed on Friday before Pentecost, 1326, making it one of the only securely dateable English treatise from this century.⁶⁷ Owing to a brief reference to knowledgeable singers, it has been suggested that his writing was intended as an instruction manual for practitioners.⁶⁸ More important for the discourse of notation, however, is Handlo's distinctive clarification of Franco of Cologne's principal notation, the *longa*, *brevis* and *semibrevis*. Advocating a solution to differentiate perfected and imperfected longs, Handlo was one of a few theorists to suggest that the later should be called the semi-long (*semilonga*). Also significant was a rule that gave two separate names for the major and minor semibreves, *semibrevis minima* and *semibrevis minorata*.

By the second half of the fourteenth century, the range of notation had extended considerably. With the inclusion of longer *and* shorter note values, theorists now faced an even greater challenge of categorisation. Like Handlo's treatise, Hanboys' starting point is Franco who is acknowledged as the great and revered teacher for the art of music:

Et quia Francho, doctor noster venerabilis in hac arte liberali, sufficienter non dixit ut figuras in regulis suis composuit prout nunc decet compositoribus et cantoribus, ideo magnus est error.

And because Franco, our revered teacher in this liberal art, did not say enough as he composed the shapes in his rules for them now to be appropriate for composers and singers, on that account the error is great.⁶⁹

⁶⁶ *Ibid.*, 38.

⁶⁷ *Ibid.*, 179.

⁶⁸ *Ibid.*, 5, 151.

⁶⁹ *Ibid.*, 189.

However great his admiration for Franco may have been, his praise for the venerated authority is short-lived as Hanboys finds fault in the ancient teachings. Hanboys not only saw the need to correct such errors, he was concerned that no appropriate manuals for composers and singers of his own time existed.

To correct the past and reflect modern practice, Hanboys added two shapes to the basic figures of notation: one larger and one smaller. With the additional notation, the *larga* now exceeded the *duplex longa* to become the longest possible note. It was the proposal to add the smaller shape that made it slightly more complex; not because of its division or shape, but more for how it should be named. Hanboys shows great concern for this matter which requires considerable clarification. He writes:

Nomina duarum figurarum, scilicet minime et crochete, volo mutare, quia melius est mutare nomen figure quam eam extra gradum suum ponere. [...] Que quidem crocheta minor est minima. Quidem hoc sit vitiosum primo, nam pars minor est toto. Sed crocheta est pars minime, ergo minor ea, quod est contra Philosophum, dicentem impossibile est dare minus minimo. Maior manifesta est de se minor primo. Crocheta aut est dimidia pars minime aut tertia, ergo minor ea. Ideo mutanda sunt nomina, scilicet minime et crochete.

I wish to change the names of two shapes, namely, of the minima and the *crocheta*, because it is better to change the name of a shape than to employ it outside its own rank. [...] And indeed, the crocheta is smaller than the *minima*. Indeed, this is defective in the first place, for the part is smaller than the whole. But the crocheta is part of a *minima*, therefore smaller than it, which is contrary to the Philosopher, who says it is impossible to give less than the least. But the greater is shown in the first place as less in itself. The crocheta is a half or a third of a *minima*, and therefore smaller than it. Thus the names of the *minima* and *crocheta* must be changed.⁷⁰

According to Hanboys, it was not that the *minima* already existed but that another, the *crocheta*, had been designated as a note smaller than the *minima*. This was impossible since nothing should be smaller than the smallest. Strictly speaking, '*minima*' is a finite term reserved only for the

⁷⁰ *Ibid.*, 188-189.

ultimate part of whatever is divided. The *crocheta* was either half or a third in value of the *minima*, thus smaller than the smallest possible. Such a contradiction on a terminological and conceptual level could endanger an accurate description of the smallest note, thus corrupting its existence. The remedy to this solution was either to change the shape of the figure or alter its name. Hanboys chose the latter. What is radical in Hanboys' treatise is his willingness to discard the common terminology for precision. Though he maintained the figure known commonly as the *minima*, he renamed it *minor*, literally smaller. Hanboys chose not to use the commonly used English term *crocheta* for the further division of the minim, preferring rather to rename the figure *semiminor*. By designating the two notes immediately smaller than the semibreve as *minor* and *semiminor*, Hanboys made it possible to reserve the term *minima* for the smallest figure. With appropriate adjustments now in place, Hanboys suggested eight figures of measured notation: the *larga*, *duplex longa*, *longa*, *brevis*, *semibrevis*, *minor*, *semiminor* and the *minima*.

Et sicut sunt octo toni sive modi, sic sunt octo species figurarum, scilicet larga, duplex longa, longa, brevis, semibrevis, minor, semiminor, minima.

And just as there are eight tones or modes, so there are eight types of shapes: the larga, duplex longa, longa, brevis, semibrevis, minor, semiminor, and minima.⁷¹

Conveniently, accuracy could be found in the eight shapes. They were memorable, since all good singers know their eight modes of music.

The terminological issues as presented by Willelmus

Terminological dilemma for the *minima* was not exclusively on the mind of Hanboys. Willelmus was writing a treatise at nearly the same time as Hanboys. It is in the discourse following the sixth distinction that Willelmus introduced the most recent terminology for measured

⁷¹ *Ibid.*, 192-193.

notation. Despite his convincing presentation, however, Willelmus had similar problems with terminology – a concern which, according to his writings, came from overhearing singers misuse the term *minima*. To find a solution, and thus clarify the misuse, he turned, not to his contemporaries, but to a treatise that had been written some time ago. Among the many facts Willelmus boasts to have read was an English treatise which, according to him, had already provided a solution to the problematic naming of the smallest possible note.

In chapter one of Part VI, Walter had proposed that a semibreve could be divided into three parts which he called the *minuta*. This was convenient for Willelmus since the term simply meant small but certainly not smallest. Taking this as an indication that Walter proposed the possibility to divide figures infinitely rather than limit its division, Willelmus took the term *minuta* as the subdivision of the semibreve. By accepting this term, he avoided the use *minima* at this stage of notational division all together.⁷² Grasping the opportunity to rearrange notation according to this new discovery, Willelmus proposed a different division from his contemporary (Hanboys cared little for the term *crocheta*). On the contrary, to provide a clear definition for the smallest note value Willelmus maintained that the *crocheta*, *simpla* and *minima* could all be used, despite the fact that he was fully aware of a discourse which argued against the *crochet*.⁷³

Another reason existed for maintaining the three terms for the smallest division of notation. If Hanboys' subtle comment on every musicians' acquaintance with the eight modes might indicate

⁷² Tanay, *Noting Music, Making Culture*, 128.

⁷³ Unde ut conformem me modernis, pono crochetum seu simplam vel minimam. Non quia ea minor non possit esse, sed quia data mensura debita longarum, brevium, non bene humana voce minor pronuntiatur perceptibilis. Et ex hoc patet solummodo obiectio modernorum. Quia arguunt contra crochetum per hoc quod minima nulla est minor.

[Therefore, to conform with the moderns, I say 'crochet' or 'simple' or 'minim'. Not because there cannot be a note smaller than it, but, given the due measure of longs and breves, a smaller cannot well be pronounced perceptibly by the human voice. And for this arises the only objection of the *moderni*. For they argue against the 'crochet' that no note is smaller than the *minima*.]

Willelmus, *Breviarium regulare musicae*, 25; translation from Tanay, *Noting Music, Marking Culture*, 127-128.

a didactic purpose, Willelmus may have had didactic strategies in mind. While Hanboys preferred the eightfold division which correlated to the eight modes, Willelmus' tripartite division is equally memorable:

Set ego in honore trinitatis pono 3 species longarum, scilicet largissimam, largam, longam, et 3 species brevium, scilicet brevem, semibreve, minutam, et ultra hoc unam substantiam indivisibilem quae est mensura et substantia omni superior, scilicet simplam quae minimam seu crocheta dicitur.⁷⁴

But I propose, in honour of the Trinity, three classifications of longs: the longissima, the larga and the long, and three classifications of breves: the breve, the semibreve and the minuta. And above this the one great indivisible, which is of quality and substance and is superior to all others, the *simpla* which is also called the *minima* or the *crocheta*.

Such specific divisions of notation, as proposed by near contemporaries, leads one to consider if terminological discussions occurred not merely for a clarification of terminology but to serve a didactic purposes to learn the new practice.⁷⁵

An insular English tradition? Some concluding remarks

The idea of an insular notational tradition within England mentioned at the beginning of this chapter has been considered here by observing a discourse of notational practice amongst English theorists. Though I have shown two case studies which reveal clear English 'insular' traditions, they draw on the notation presented by Franco in his *Ars cantus mensurabilis* thought to have been written a generation before Walter of Evesham Abbey's *De speculatione musica*. But a transmission of knowledge between the Continent and England occurred in other ways. Bonnie Blackburn's article on English theory 'home and abroad' indicates traces of English theorists active

⁷⁴ Willelmus, *Breviarium regulare musica*, 25.

⁷⁵ Leofranc Holford-Strevens has pointed out through personal correspondence to me that Willelmus' scheme is the mystical number 7 (3 kinds of longs, 3 kinds of breve and the simpla/minima/crocheta) but is smuggling in the number 9, which is the number of angels or Muses, through the back door.

on the continent.⁷⁶ Earlier it was shown how Renata Pieragostini identified correlations of continental and English theorists in her recently published article (Chapter 1).⁷⁷ She observed a strong connection between Oxford, Bodleian Library Bodley 842 (*GB-Ob Bodley 842*) containing Willelmus' treatise with the Italian manuscript now housed at the Chicago, Newberry Library 54.1 (*US-Cn 54.1*).

The manuscript *US-Cn 54.1* is famous for containing *La harpe de melodie* and the treatise *Tractatus figurarum*. Within is an attribution to a certain G de Anglia, whom Pieragostini has identified to be the English friar, Guillelmus.⁷⁸ In 1392, Guillelmus, who was among the Hermits of St Augustine in Pavia, is recorded to have responded to a summoning by prior Giovanni da Genova to settle legal matters with the monastery. As a visitor to the Augustinian house, it is highly likely that Guillelmus would have been either a student or a teacher. Though many circumstances could have led Guillelmus to be amongst the Hermits in Pavia, it is the Augustinian connection with this treatise and another, the *Breviarium regulare musicae* by a Willelmus (exclusively found in *GB-Ob Bodley 842*),⁷⁹ which is of most interest in the story which considers the monastic transmission of music theory.

Crucially, the triangle of notation by Johannes Torkesey can be found in both manuscripts described above. What is remarkable about the two manuscripts is that both contain the same rendition of the triangle, that is, a deviation from Torkesey's original made by Willelmus. This

⁷⁶ Bonnie Blackburn, 'Properchant: English theory at home and abroad', *Quomodo cantibimus canticum?: Studies in honor of Edward H. Roesner*, eds David Butler Cannata, Gabriela Ilnitchi Curie, Rena Charnin Mueller & John Louis Nadas (Middleton, Wisconsin, 2008), 81-98.

⁷⁷ Renata Pieragostini, 'Augustinian networks and the Chicago music theory manuscript', *Plainsong and Medieval Music*, vol. 22 (2013), 65-85.

⁷⁸ *Ibid.*, 69.

⁷⁹ Willelmus, *Breviarium regulare musicae*, ed. Gilbert Reaney, in *Ms. Oxford, Bodley 842 etc.* ([Rome], 1966), 15-31.

deviation has led Pieragostini to conclude that Guillelmus was familiar with the actual manuscript held in the Augustinian monastic library since sometime in the 1370s.

Investigations for a larger context including the role of institutions and individuals associated with the transmission of music theory has most recently been led by an impulse to discover the audience of theoretical treatises. The English treatises examined here specifically refer to a clarification of notational matters for contemporary singers while exhibiting didactic tendencies. The later have been less explored. This brings to mind the question of where musical instruction could have taken place. Based on the lack of evidence that music was an active subject within the early medieval universities, scholarship is beginning to turn to alternative institutions that drove forward musical practices in the fourteenth century. In the quest for contextualisation, a fruitful investigation would be to give more attention to the transmission of knowledge which was occurring within monastic institutions.

It is not easy to establish a new system. Standardisation brings with it complexities which require time and discourse to comprehend. Throughout the fourteenth century, English theorists dealt with this problem in several contrasting ways. Some establish first the practice of the past. Others pick up from where the past had left off. Still others initiate a new method of understanding by using mnemonics as a way of clarification. The impact which early fourteenth-century writings had on later writers is evident, manifesting itself in discussions which involve the writings of earlier authorities. What is more, the continuous discussion is indicative that notation was a great concern for English theorists.

It has been shown here and in previous chapters that quotes, images, and now notation concerned and occupied the minds of music theorists. The ultimate aim for clarity of presenting ideas is evident in nearly all of the writings and might provide an indication that some texts had

been intended to be used within didactic settings. The *Quatuor principalia* and Johannes Torkesey's *Declaratio trianguli et scuti* are examples of this type of treatise. Others, as was suggested in the opening of this thesis, may have merely been enthusiasts, writing disputative treatises for each other to establish some form of normality and standardisation amongst the new and slowly changing understanding of musical notation.

But who read English music treatises? Earlier (Chapter 1) it transpired that English monastery libraries held copies of Boethius. Walter's *De speculatione musicae* reveals that he knew the content of both *De institutione arithmetica* and *De institutione musica* well enough to construct his own arguments from these. Manuscript evidence, both scribal and the transmission of select chapters, indicate a level of interaction with corrupted sections of the same treatise (Chapter 4). Willelmus and the Anonymous writer of *Commentum Oxoniense* reveal knowledge both of Boethius' texts as well as Walter's (Chapter 3). The use of diagrams, though sometimes original, were sometimes inspired by other authors: Willelmus again is an example of an author who, as has been showed above, altered the diagram by Torkesey to create his own version. And lastly, the modernisation of Handlo's treatise by Hanboys is a separate indication that an insularity of writing and reading music theory existed within England. In short, it is obvious that theorists were reading music treatises written within the century and that they subsequently compiled their own.

APPENDIX I

Transcription of

London, British Library
Additional MS 56486a

Fifteenth century

ff. 1r-2v

De speculatione musicæ

Proemium, Part I (chapters 1, 2 and a portion of 3)

The fragment, London, British Library Additional MS 56486a, though purchased in 1971, has remained outside of current scholarly literature for several reasons. Firstly, it was purchased after the most recent edition of *De speculatione musicae* was published in 1970 and has only been mentioned in the *New Grove* article on Walter. Secondly, the current British Library catalogue incorrectly indicates that the fragment only contain the third chapter from *De speculatione musicae*, which is less than is actually found in the two flyleaves.¹ Instead, the catalogue entry provided for selling the fragment provides a fuller description of content and condition of this fragment.²

The two folios have been labelled as folio 1r and 1v, 2r and 2v and contain the final section of the Prologue, Chapters 1, 2, and the first section of Chapter 3 from the opening book of the treatise. According to a sale catalogue the folios were used as paste-downs for the bindings of an unidentified manuscript (hereafter labelled as *U*). Both folios bare some damage on their outer sides most likely incurred upon removal from *U*.³ It appears that when the original manuscript (hereafter *O*) was disseminated to provide material for binding material, it was not completely disassembled since the folios are two independent yet successive folios (Example 1a). Had the manuscript been disassembled before being used for paste-downs, the parchment in use must have been one bi-folium and the two parchments could have contained text from different

¹ *The British Library Catalogue of Additions to the Manuscripts: New Series 1971-1975*, Part I, Descriptions (London, 2001), 1. Additional manuscripts

Acquired in the year 1971

56486. Miscellaneous Letters and Papers; 15th cent.-1963.

Paper and vellum; ff.72. British Library arrangement.

A. Two leaves from the third chapter of 'De speculatione musicae' by Walter Odington of Evesham; second half of the 15th cent. *Latin*. See Add. 4909, and Frederick F. Hammond (ed.), *Summa de speculatione musicae*, Corpus scriptorum de musica, no. 14 (Rome, 1970). With English pen trails of the late 15th-early 16th cent. Coloured three-and four-line initials of red and blue, and diagrams with red titles inserted into the text.

Purchased from Folio Fine Art, 23 Jan. 1971.

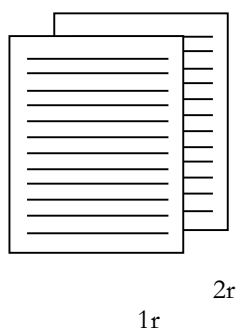
Vellum; ff. 1-2. 177 x 122mm. Ruled (lead-point). Written space 155 x 83 mm. Script is Bastard *Anglicana*. Some text lost through use as pastedowns.

² *Folio Fine Art Ltd.* Catalogue 77, Dec. 1970, 25.

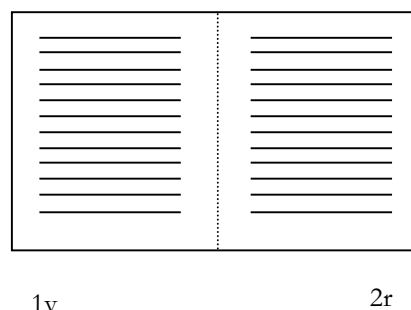
252 EARLY MUSIC THEORY: Two consecutive leaves on vellum from an English manuscript of *De speculatione musicae* by Walter of Odington dating from the early 15th century. The leaves, which are in an early version of the 'Secretary' hand, with some rubrication and initials in blue and red, contain the conclusion of the 'Prologue' and Chapters 1, 2, and part of Chapter 3 of the main text. At some time they had been used as paste-downs in a binding so that the edges are stained and the undersides very badly rubbed. The sides shown as mounted are, however, perfectly legible apart from the loss of a few letters due to worming, and contain three diagrams. Leaf size 180 x 115 mm approx. In a double aperture mount. THE PAIR £48.00. Within the manuscript, the following is noted in pencil on an inserted and unnumbered folio: "Trt 3 and another which (the most mentioned in Smith's catalogue) originally followed here have entirely disappeared. For transcriptions of these see Ad. 4909, pp. 1-22." The tracts which are presumed missing here, according to London, British Library Additional 4909, were two treatises: Robert de Handlo, *Musicatorum* and Egidium de Muris, *Alius Tractatus de Musica Incicerto Authore*.

³ *Folio Fine Art Ltd.*, Catalogue 77, Dec. 1970, 25.

sections of the treatise rather than forming a continuous text (Example 1b). Based on the fact that no text or diagrams seem to have been trimmed in its use as a binding, *U* and *O* must have formed roughly the same dimensions.



EXAMPLE 1a Two successive folios



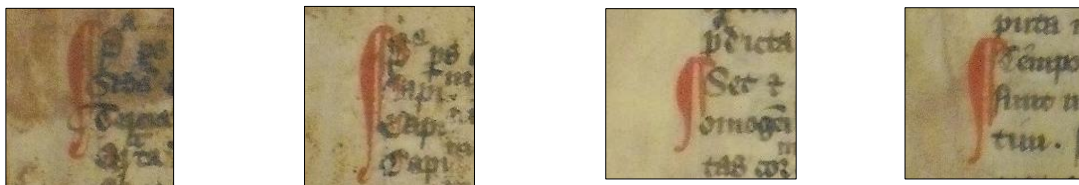
EXAMPLE 1b Bi-folium

The lines of text vary between the two sides of each folio: 1r and 2v have 37 lines while 1v and 2r have three less, 34 lines. The text and diagrams all seem to be that of one scribe with frequent but consistent abbreviations. Even with slight damage caused by the removing of the flyleaves from its binding, it is evident that the scribe who prepared *O* took extra care in its copying through its precise and accurate layout. Different pen tips were used for the capital initials at the headings of each new chapter which alternate between red and blue ink, contrasting the main text which is black. It is also worth noting that within the main text, important and significant words are highlighted or written in red ink: when another authority is quoted or referred to, such as Nichomacus (lines 25-26) or Plato (line 33) in folio 1r, the word has been underlined in red ink as if to bring particular attention to its existence.

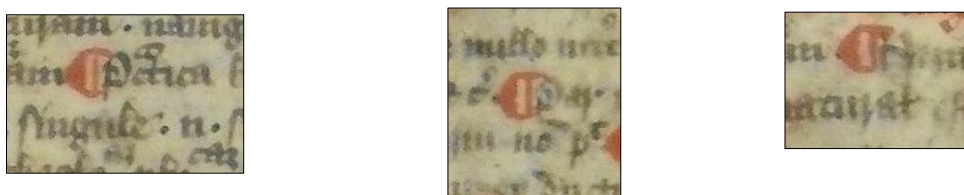
Strategic textual layout is observable in the specific spacing and placement of the three diagrams among the folios – two on folio 1v, one on folio 2r. The text corresponding to the diagrams circle them with precision. The main body of the diagrams on folio 1v is of a noticeably lighter ink upon which text and lines are made out in red and darker black ink. The diagram on folio 2r is mainly made in red ink with black letters. Though the lines in the diagrams are written free-hand for all three diagrams, a compass or similar circular device seems to have been employed for the first diagram on folio 1v which include two circles.

No glosses or corrections are made to the original text. Instead, multiple scribbles in Greek and Latin can be found on folios 1v and 2r amongst the margins and within the diagrams. Some of the words are discernible while others seem to be scribes testing their nibs in the empty spaces. Upon closer scrutiny of these marginal scribbles, it seems that they were written when the fragment was contained within *U* when it served as paste-downs, since no direct correlation to the main text of *De speculatione musicæ* can be found. That these would correspond to *U* rather than when it formed a part of *O* would explain why no scribal activity can be detected on folio 1r and folio 2v, the outer sides the folios, since these would have not been exposed.

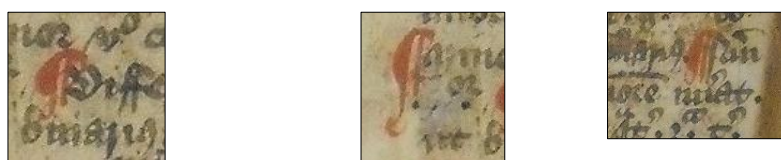
Of special note is the different use of pilcrows to signify the beginning of important sentences. To date, this fragment has not been identified with any other known treatise or manuscript. The pilcrows were added after the main text in black had been written. All pilcrows found within the two folios are in red ink and are placed either at the opening of an important section or to signify a noteworthy sentence. Four large pilcrows can be found on folio 1r and 1v, notably placed outside of the main text in the left margin of the parchment. These pilcrows are long with a curled tail and can only be found in the left margin of the parchment (Example 2). When the pilcrows occur in folio 2r, they are more frequent and lose the elaborate tails (Example 3). The portion of text which includes chapter 2 of the treatise, nearly every sentence opens with a pilcrow signifying the importance of the text.⁴ Rather than being placed in the margin, these pilcrows are placed within the text at the opening of sentences, perhaps to signify its important context. The text within which these pilcrows can be found expounds on numerical principles and is written in a point-by-point style stating facts as simple as ‘that four multiplied by four are 16 (*ut quarter quatuor sunt .16.*).’⁵ Though the text continues to reflect that found on its *recto* and the pilcrow still frequently occurs, on folio 2v the tailed version of them, already found on folio 1r and 1v, returns. Similar pilcrows return in the left margin with longer tails but the in-text pilcrows also have tails which are non-existent within those from 2r.



EXAMPLE 2 Pilcrows, fol. 1r-1v⁶



EXAMPLE 3 Pilcrows, fol. 2r



⁴ Paragraph marks were added to clarify the structure of text. Red ink was most commonly used for these indicators throughout the Middle Ages. Derolez, *The Palaeography of Gothic Manuscript Books*, 40.

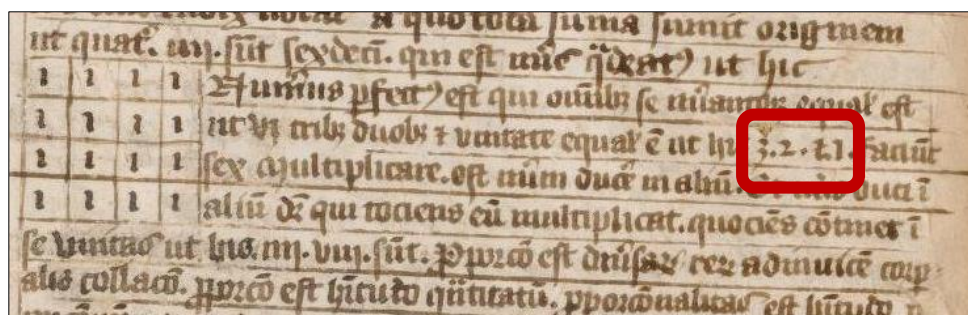
⁵ London, British Library Additional 56486a, f. 2r.

⁶ I would like to express my thanks to Nicolas Bell who provided me with digitised images to study the fragment in more detail.

EXAMPLE 4 Pilcrows, folio 2v

Finally, a few points can be made concerning the use of numerals in the two medieval manuscripts must also be mentioned. In some Boethian glosses from the thirteenth century, Giles Rico has observed a transitional period for the use of Roman and Arabic numerals within the text.⁷ The transition of numbers, which seems to have continued to be a point of conflict amongst scribes in the fourteenth and fifteenth centuries, can be found within these fragments and may be the reason why we see different usage of Roman and Arabic numerals between the Cambridge, Corpus Christi 410 (*GB-Ccc 410*) manuscript and the fragment source.

For the majority of the treatise in *GB-Ccc 410*, when numbers are placed within the text and actually form a part of the sentence, they are often Roman numerals. We also find Latin words for number spelled out, for example, the number two is referred to as *duos* or three as *tertius*, etc. In *GB-Ccc 410* is only one exception to the use of Roman numerals on f. 2v.



EXAMPLE 5 Cambridge, Corpus Christi 410, f. 2v⁸

Other tables found in *GB-Ccc 410* are a mixture of Roman and Arabic numerals. The table in Example 6 below is one such example. Both the Roman and Arabic numerals were written by the same scribe (I have identified this as Scribe 1 in chapter 3 of the present study).

EXAMPLE 6 Cambridge, Corpus Christi 410, f. 2v⁹

⁷ Gilles Rico, 'Music in the Arts Faculty of Paris in the Thirteenth and Early Fourteenth Centuries' (D.Phil, Oxford, 2006), 94-95.

⁸ <http://parkerweb.stanford.edu>. Cambridge, Corpus Christi College 410, f. 2v.

⁹ <http://parkerweb.stanford.edu>. Cambridge, Corpus Christi College 410, f. 2v.

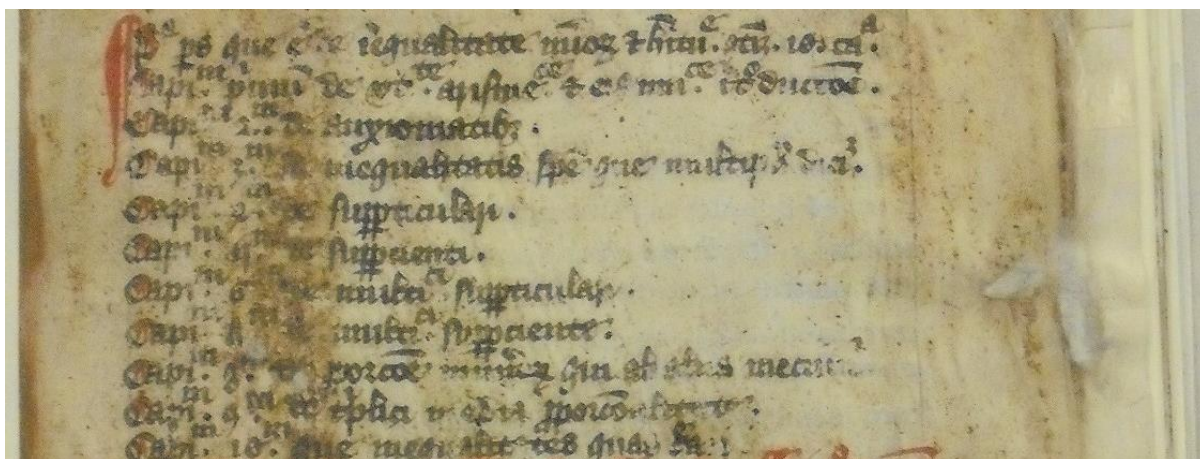
Only one exception to the use of mixed numeration in *GB-Ccc 410* which is a table that contains Arabic numerals (Example 7). Here, Scribe 1 seems to have struggled to include the final number, 256 1. Rather than match the other Arabic numbers, we find the equivalent Roman numeral.

1	3	9	2A	81
18	2	12	36	108
	16	28	144	

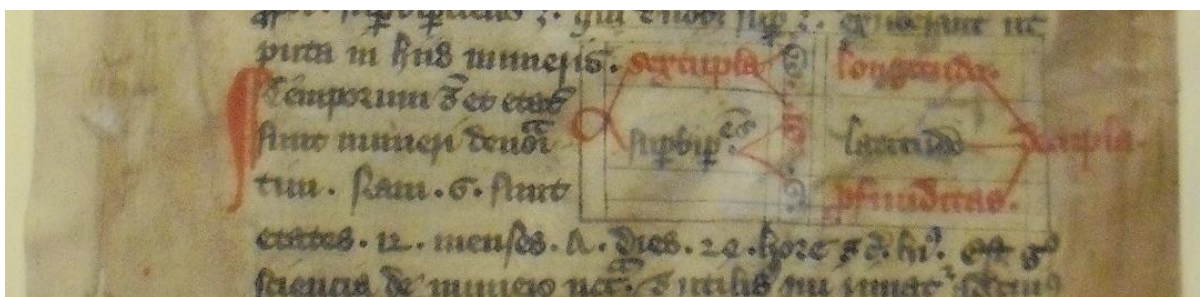
Below the grid, the text "LVI" is circled in red ink.

EXAMPLE 7 Cambridge, Corpus Christi 410, f. 3v¹⁰

In contrast, the British Library fragment always uses Arabic numerals where numbers are included within the treatise. Examples 8-10 show the use of Arabic numerals. The fragment does not include any Roman numerals.

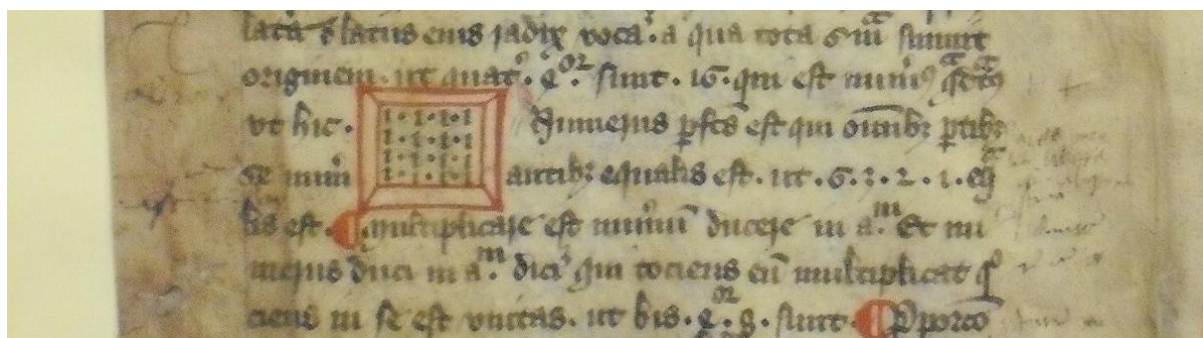


EXAMPLE 8 Chapter numbers in Arabic numbers in *Proemium* (*GB-Lbl Add. 56486a*, f. 1r)



EXAMPLE 9 Arabic numbers in Chapter 1, Part 1 (*GB-Lbl Add. 56486a*, f. 1v)

¹⁰ <http://parkerweb.stanford.edu>. Cambridge, Corpus Christi College 410, f. 3v.



EXAMPLE 10 Arabic numbers in Chapter 2, Part 1 (*GB-Lbl Add. 56486a*, f. 2r)

The other contents of London, British Library Additional MS 56486a are not related to the fragment and are miscellaneous compilations of letters from the middle of the 20th century.¹¹

¹¹ For a full description of the transcription conventions, please see p. *xii* above.

[fol. 1r]

¶ *Prima pars est de inaequalitate numerorum et eorum habitudine.*

Secunda de inaequalitate sonorum sub proportione numerali et ratione consonadarium.

Tertia de compositione instrumentorum musicorum et de tripis.

Quarta de inaequalitate temporum in pedibus quibus metra et rithmi decurrunt.

Quinta de [armonia] simplici id de plano cantu.

Sexta de [armonia multiplici] id organo et eius speciebus ac de compositione et figuracione.

¶ *Prima pars que esse inaequalitate numerorum et habitudine continet 10 capitula.*

Capitulum primum. de utilitate arismetice et eius musicæ introductione

Capitulum 2 de axiomatibus

Capitulum 3 de inaequalitatibus specie quae multiplex dicitur

Capitulum 4 de superpartulari

Capitulum 5 de superpartiente

Capitulum 6 de multiplici superpartulari

Capitulum 7 de multiplici superpartiente

Capitulum 8 de proportione numerorum qui ab aliis metiuntur

Capitulum 9 de triplici media proportionalitate

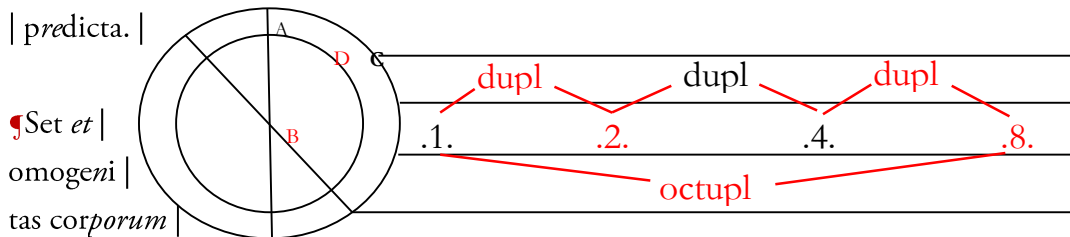
Capitulum 10 que inaequalitates quas creant

Capitulum primum de utilitate arismetice et eius musicæ introductione.

Quoniam de [musica presens est practatio et ipsa] | quidem est de [numero relato ad sonum, prius de] | arismetica estimo [exponendum que est de numero per se sine] | qua quicquid [inclitum]nequit [pertractari] *Arismetica* | enim *nominis* interpretatione [est scientia de numero. Est autem numerus] | principale in *animo* [conditoris exemplare, ut ait] *Nichomachus*. | *Cum ergo* exemplari [respondeat exemplari | manifestum] est quod omnes [creature facte sunt secundum numeralem propotionem. Et patet quoniam] quatuor elementa [septem orbes planetarum proportionaliter intrinsecus | certis distinctis numeris conditor ipse consolidavit. Aiunt enim *atrologi* ex diapente diatessaronque constare que unum faviunt diapason, hoc est in numeris ex | esequaltera et sesquetertia quae duplam faciunt habitudinem ut patet posterius. Huiusmodi | certa sunt interstitia.] Ait *etiam plato* [animam mundi] musica con|tinent esse conjunctam, et sic numero metiendum. Non | dico sicut dicunt [aliqui super his, quod motus superiorum | corporum aliquam faciunt armoniam vel sonum, nec etiam innatum. | nobis etpropterea non audiri, sed sunt corpora illa secundum armonicam]

[f. 1v]

proportione coniuncta et se habent proportionaliter sicut eorum diamati non dico | eadem
 propotionalitatem set per ultimam proporsitionem libri .12. euclidis. | proportio dyamator ad
 invicem est proportio unius dyamatur ad | dyamatum alterrius triplicata ut si dyamatum .a. sit
 duplum ad dy|amatum .b. spera .c. speram .d. sit octupla *dupla vero* | triplicata octuplam facit
 habitudinem et hius est armonia



continentium et contentorum quia convexitas inferioris et con|cavitas superiorum sunt eiusdem
 nature et subtilitatus et | repletio id soliditas quia spera est corpus solidum et uniformi|tas motus
 quia non alias tardior et alias velocior non pati|untur machimam mundi sonos ciere vel edere
 quoniam concavum | vacuum sonum sonat ut patet in corporibus musicis et vacuum | dico. quia et si
 sit aliquantur repletio in illis utpote aerea | tamen quia non est omogenerica cum corpore continente
 sed subtilis et | adveniendi grossiori materie succedit ut sit modo rarior modo densior. |

ideo suum continens sonare patetur. Excludo etiam in huius omnem motum | violentum qui sonum
 facere debeat ut tonitrum quod sit | vi ventorum. Numquid et numerus est eternus qui nec incipit |
 nec aliquando desinet semper beate trinitatis annexus semper enim tripla tri|nitas includit et tripla
 unitatem. sed in corporibus inferioribus | numeralem est reperire proportionem. Corporis enim
 humani latitudo | sexta pars est longitudinis in proportionem [sextupla] profunditas [vero] | decima
 in proportione decupla. Latitudinis autem [ad profunditatem] est | proportio superbipartiens triplas
 quia | puta in his numeris. |

¶ Temporibus etiam et
 etatum | sunt numeri
 denomina|tim, Nam .6.
 sunt | etates .12. menses

<p>sextupla</p> <p>superbipartiens</p>	.60.	longitudo	<p>decupla</p>
	.10.	latitudo	
	.6.	profunditas	

.7. dies .24. hore etc hius. Est igitur | scientia de numero necessaria et utilis qui sumatur ad cuius

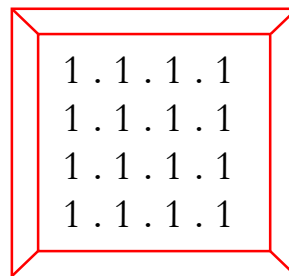
[f. 2r]

exemplacionem omnia consolidantur et in esse manent. sicut dicit | *ysidorus ethimologus*. Tolle numerum in rebus omnibus et cuncta | parent. Ista igitur scientia scilicet de numero tam per se quam relato ad | sonum sic est secundum *Alardum* introducta. Scientia dividitur in sapientiam et eloquentiam. Eloquentia in gramaticam dialecticam | rethoricam. Sapientia in theoricam Practica in ethica | metaphisicam et practicam liberalem. Ethica in monasticam economicam poleticam metaphisicam in lanificiam ar|maturam agriculturam navigationem venationem me|dicinam et theaturam. ¶ Practica liberalis distinguitur | secundum artes liberales. Singule enim singulas habent practicas | Theorica dividitur in theologiam phisicam et mathematicam. ma|thematica in arisine musicam geologicam astronomicam. Ecce mathe|matica genus continet arismetnicam et musicam de quibus est presens | intentio. *Capitulum secundum de auxiomatibus.* |

Unitas est principium. ¶ Numerus est multitudo ex|unitatibus composita. ¶ Numerus naturat est omnium numeriorum | ab unitate quantumlibet nullo interciso continua pro|gressio ut hic .1.2.3.4.5.6. ¶ Par numerus est potest | in duplo equa dividi. ¶ Impar qui non potest.

¶ Numerus qua|dratus et tetragonatis dicitur qui ex [ductu] numeri in se ipsum | producitur eumque .2. numeri equales continent qui sunt ipsius | latera et latus eius radix vocatur. a qua tota summa summit | originem. ut quater quatuor sunt .16. qui est numerus quadratus | ut hic.

Numerus perfectus est qui omnibus partibus | se numerantibus equatis est .ut. .6.3.2.1 equa|lis est.



¶ Multiplicare est numerum ducere in alium. Et nu|merus duci in alium dicitur qui totiens eum multiplicat quo|tens in se est unitas. ut bis. quatuor .8. sunt. ¶ Proportio | est diversarum rerum ad invicem corporalis collatio. ¶ Proportio | est habitudo quantitatum. ¶ Proportionalitas est habitudo proportionum | ut duplo ad quatuor est proportio .4. ad .8. est proportio que due faci|unt proportionalitem unam. ¶ Est enim proportionalitas ad minus in tertius ter|minos.

¶ Numeri proportionales sunt quatuor primus in duplo tanquam

[f. 2v]

tertius quartus aut in primo *tertius* ut .2.4.6. | 12. et Sicut *duplo* ad .6. ita *quatuor* ad .12.

¶ Continua *propornalitas* est | quotiens *duplus* ad *tertium* sicut primus ad *duplum* quolibet fuerint in ordine ut *quatuor*.6.9. sicut. sex continet *quatuor* et | *medietatem* sicut .9. tenet .6. et *medietatem*.

¶ [Media proportionalitas] est quotiens medius numerus se *habet proportionaliter* [ad extremos licet] | non eadem *specie proportionis*, ut, .2.3.4. *ternarius* [cum binaries] | [facit] *proportione* sexquialteram *habitudinem* *quaternarius* cum [ternatio sexquiteriam.] | ¶ Numerus a numero metitur cum [continet pluries ut] | *binarius* metitur bis *quaternarium* *ter* *senarium* .4. [octonarium] vocatur *quibus* *binarius* numerus numerans *ternarius* et [quaternarius. ¶ Numeri] | quotiens vocatur et numerus maior dux cum [minorem numerat.] | ¶ Minor vero comes cum a maiorem numeratur ut *quatuor* *tertia* *ter* *quatuor*. ¶ Differentia est quia a se *invecum* numeri diferunt | ut *binarius* est *differentia* inter .6. et .4. ¶ Intervallum est distantia *proportionalium* ¶ Maior *inqualitas* est cum maior [numerus] | *comparatur* ad minorem. ¶ Minor vero *inequalitas* cum [minor] | refertur ad maiorum. **Capitulum Tertium De inequalitatis | que multiplex dicitur**

Species quidem *proportionalium* | [secundum] *speciem* maioris *inequalitatis* et minoris | [sunt accipiende] *super* quas *tota ita* *speculatio* [situratur. ¶ Species vero maioris] *inequalitatis* sunt .5. scilicet *multiplex* [superparticularis *super*|*partiens*. ¶ Multiplex *super* *particulare* et *multiplex* | *superpartiens*] et totidem sunt *species* minor [inequalitatis. | ¶ His idem] *vocatis* *nominibus* *tamen* *preponendo* sub singulis *earum* | [ut *submultiplex* *subsuperpartialtis* et *caetra*. ¶ Multiplex est cum | maior] *merus* continet *minorem* *multotiens* [ut bis vel ter vel | quater, vel quintociens.] si bis vocatur *dupla* [si ter tripla et caetra. | Octonarius comparatus ad quatuor] *duplus* est [ad duplus quatuor ad unum | octuplus. ¶ Sub multiplex] est cum minor [numerus continentur a | majore ut bis] *vel* *ter* ut *prius* si bis vocatur [subdupla | ¶ Subgeneratio istorum numerorum sic est *investigantia*. Disponentur | numerus naturalis ab] *unitate* quantumlibet fiet ut *prius* par | *primi* numeri sit *duplus* numerus par *dupli* numeri in ordine | sit *superduplus*. ut hic unus .2.3.4.5.6.7.8.9.10. | 11.12. *binarius* ut *primus* par est [primi numeri scilicet | unitas est duplus *quaternarius* qui secundus par est dupli]

APPENDIX II

Transcription of

London, British Library
Additional MS 4909

Eighteenth century
ff. 105r-106r

De speculatione musicae
Part VI (chapters 11, 3, 6 and 7)

Cotton Tiberius B IX is in fragile condition after becoming the victim of the library fire of 1731. The catalogue of the British Library notes that originally the Cotton manuscript contained 272 leaves comprising eight tracts.¹ The manuscript catalogued today as Cotton MS Tiberius B IX was previously owned by Simon Bredon (d. 1372) of Merton College, Oxford, the great English astronomer and mathematician John Dee (d. 1609), and in the 17th century became the property of the Cotton family where it derives its name. Though the manuscript has been expertly conserved today, it is nearly impossible to read many sections of the musical portions. The fire damage, especially in the later section of Anonymous IV's treatise (ff. 215r-224v), varies from excessive burning to distorted shrinking. Furthermore, several sections seem to be missing entirely.

Connections of the manuscript to the institution of Bury St. Edmond's can be made through several different points within the manuscript, but have also undergone several challenges in more recent scholarship. The register of abbots of Bury St. Edmonds which cover over 200 folios of the manuscript certainly is an obvious starting point. However, it is also noteworthy that links have been associated between Cotton Tiberius MS B IX and London, British Library Royal 12 C VI, a fact which is amply noted in pencil within the manuscript.² More recently, the connection of Bury St. Edmond and the infamous 13th-century English treatise Anonymous IV has been challenged by John Haines who states, 'All that is known for certain, then, is that the two different compilers of manuscripts A [London, British Library Royal 12 C vi] and B [London, British Library Cotton Tiberius B IX] at the Abbey of Bury Saint-Edmunds, in the late fourteenth and fifteenth centuries respectively, liked the treatise of Anonymous IV enough to include it in their anthologies. This does not imply a connection of the abbey to the work.'³ It will suffice here to note that these two manuscripts with the inclusion of Anonymous IV were, by the fifteenth century certainly, held within the library at Bury St. Edmonds.

The English origin of this treatise, as is pointed out by Haines, is certainly noteworthy, especially when considering the amount of place-names and commentary on English singers made by the author. Haines further points out the 'Western' connection, describing the region as being 'an important centre of scribal activity' as well as a musical centre.⁴ Manuscript studies conducted by Andrew G. Watson have also shed light onto the contents contained within Cotton Tiberius B IX which are non-musical.⁵ These tracts seem to have no connection to the musical treatises compiled within the present manuscript but rather form a part of the manuscript's history closely associated with 16th and 17th-century Antiquarians and their libraries: it is through the extensive cataloguing of manuscripts that the original contents of a manuscript, thought to have been held

¹ *British Library Manuscripts Catalogue*, www.bl.uk/catalogues/manuscripts.

² Comments of this association can also be found within the British Library Catalogue of manuscripts online and also in London, British Library Additional 4909, discussed below.

³ John Haines, 'Anonymous IV as an Informant on the Craft of Music Writing', *Journal of Musicology*, vol. 23, no. 3 (2006), 414.

⁴ *Ibid.*, 419.

⁵ Andrew G. Watson, 'A Merton College manuscript reconstructed: Harley 625, Digby 178 fols. 1-14, 88-115, Cotton Tiberius B. IX, fols. 1-4, 225-35,' *Medieval Manuscripts in Post-Medieval England* (Aldershot: Ashgate, 2004), Essay XIII, 207-217. As Watson was only concerned with the scientific portions of Cotton Tiberius B IX, he make little reference to the musical portions of this within his article. The only mention he makes is the single copy of Robert de Handlo's treatise which can be found in the manuscript to confirm library catalogue entries which correspond to this manuscript.

in the library at Merton College, can be reconstructed. Through examining the different hands and original foliation numbers of three manuscripts, London, British Library Harley 625, Oxford, Bodleian Digby 178 and London, British Library Cotton Tiberius B IX, Watson has convincingly reconstructed a manuscript which contains only scientific treatises. According to this reconstruction, it the original manuscript contained the first 175 folios from Harley 625 (items *a-k* in John Dee's catalogue), folios 88-115v from Digby 178 (items *l-o*). In the second half of the reconstructed manuscript, the first four folios from the Cotton Tiberius B IX are followed by folios 225r-235v (items *p-s*; with item *r* remaining missing), and conclude with Digby 178, ff. 4v-14v (items *t-x* and two unlettered treatises).⁶ This reconstruction indicates that the Cotton manuscript, as it was combined at a later time, was a composite manuscript made with no particular relations of content. Based on the evidence provided by Watson, the contents of Cotton Tiberius B IX can be re-allocated as follows and is considered to have been three separate manuscripts at one point.⁷

Unfortunately, the portion of the manuscript which contained Walter of Evesham's *De speculatione musica* is too damaged and in fact may even be missing entirely in the present manuscript. The third tract is so severely damaged that it is almost impossible to take note of the contents found on the parchment. Owing to the fragmentary condition of the Cotton Manuscript, comment on its contents will be reserved for the 18th-century copy made of the musical portions found in London, British Library Additional MS 4909. This copy Cotton manuscript must have been made before the fire since, according to the incipit found at the beginning of Additional 4909, this manuscript was presented by John Hawkins on 30 May 1778.⁸ Additional 4909 preserves capital initials in red ink at the beginning of its chapters, is strategically presented and easily accessible to the reader since the text has been unabbreviated: though the text within the Cotton manuscript is presumably highly abbreviated, the 18th-century copyist seems to have been a capable palaeographer since all of the Latin has been spelled out. Evidence that the 18th-century manuscript was proofread before its finalisation can be found as some corrections are made in the hand of the main copyist and by another. The transcription which follows was made exclusively from the 18th-century copy.⁹

⁶ For a full list of treatises which are thought to have made this Merton manuscript, see 'A Merton College manuscript reconstructed: Harley 625, Digby 178 fols. 1-14, 88-115, Cotton Tiberius B. IX, fols. 1-4, 225-35,' *Medieval Manuscripts in Post-Medieval England* (Aldershot: Ashgate, 2004), Essay XIII, 217.

⁷ I. Scientific treatises: 1r-4v Computistical tables; 225-236 Mahumet Bag-dadini, *Liber Divisionum*; Roger Bacon, *De speculis comburentibus*, unidentified verse. II. Register of Abbots: fols. 5r-34r Index for Register of Abbots of Bury St Edmonds; fols. 35r-169r Register of Abbot William Cratfield (1390-1415); 169v-173r Index for Register of Abbots of Bury St Edmonds; 174r-203v Register of Abbot William Excetre (1414-29). III. Music Treatises: [missing tract]; 204r-205r *Qualiter autem faciendum est monocordum...* (fragm.); 205v-214r *Quatuor Principalia*; 215r-224r Anonymous (Coussemaker IV); 224r-v. Interv. Sit b-O.

⁸ London, British Library Additional MS 4909, f. 1r.










⁹ The 18th-century scribe has expanded all truncations, contractions, superscript letters and conventional signs from the original text which surely must have contained these.

f. 105r

Nota quod est unum genus cantus organici quo tantum attenditur cohaerentia vocum inmensurabilium & organum purum appellatur & hoc genus antiquissimum est & duorum tantum. Aliud genus est in quo attenditur consonantia vocum & mensurationum in duplici & triplici ac quadruplici & dicitur discantus quasi duorum cantus ad minus.

Organum autem aliquando est unius aliquando duorum ut dum attendes concordiam tenor aliquando tacet, habet quidem discantus species plures & si quod unus cantat omnes per ordinem recitent vocatur hic canus Rondollus, id est notabilis, vel circumductus & hoc vel cum littera vel sine littera sit. Si vero non alter alterius recitet cantum si singuli procedunt per certos punctos dicitur conductus quasi plures conatus decori conducti. Est alia species quae procedit per binariam ligaturam sicut secundus modus sed velocior est & longam immensuratam accipit in principio qua copulantur habens nomen a re. Est & alia copula qua singulos habet punctus per se morosior qua sextus modus dicta per contrarium quia non copulatur. Ac alia quidem species atteneit consonantiam & mensuram vocum ac carminum qua Motetus dicitur, id est motus brevis cantilena. Alia vero discantus species est cum littera vel sine litera in qua dum unus cantat altus tacet & e contrario & hujusmodi cantus Truncatus dicitur a rei concenientia qui & Hocquetus dicitur ~ haec Odyngtonus.¹⁰

fol. 105r

Longa perficitur cum longa praecedit sic  vel si vis signum perfectionis addatur sic  aut cum eam sequuntur duae breves  vel tres sic  nisi inter primam & sequentes divisio apponatur sic  brevis longam praecedit sic  & tunc imperficitur longa super ficitur enim cum eam Sequitur brevis una  vel quatuor vel plures sic  vel valor brevis resolute in semibreves sic .



¹⁰ in pencil: i.e. Walter of Evesham, Tanner 568


ff. 105v-106r


De modis quibus procedunt cantus organici¹¹


Modus in hac parte est longarum & brevium ordinalis processio ut cum cantus procedit per longam


& brevem dicitur de primo modo sic  . Secundus modus est huic contrarius


 . Tertius modus procedit per longam & duas breves sic  . Quartus e


contra sic  Quintus per omnes longas sic  . Sextus ex omnibus


brevibus & semibrevis  . Sunt & alii modi contrari scit cum cantus procedit per



longam & brevem & brevem & longam cum divisione modi inter breves sic  . Sed
hic modus constat ex primo & secundo & ad aliorum eorum reducitur. Similiter cum cantus



procedit ex brevi & longa duobus & brevibus & longa sic  constat ex secundo &
quarto & de aliis brevisis dispositionibus sic. Sic autem se habent modi in ordine secundum
quod prius & posterius fuerunt in usu & in inventione.

Sunt ergo isti modi tripliciter imperfecti sicut subijcio & hiis pedes adicio ut pateat qui pedes quibus
modis aptandi sunt. Primus igitur primi modus perfectus sic se habet  amphibraco


aptus. Secundus sic  trocheo & amphibraco aptus. Tertius primi sic

 . Ditrocheo & Amyphibracheo aquus & in hiis propria pausa est brevis recta sic

 . Primus autem primi imperfectus sic se habet  Trocheo aptus. Secundus sic

 Ditrocheo. Tertius sic  Aphi & Amphibraco equus & hiis propria
pausa est longa imperfecta & brevis recta. Primus modus secundi modi perfectus sic se habet sicut

Amphibrarus  . Secundus sic  Iambo & Amphibraco aptus. Tertius sic

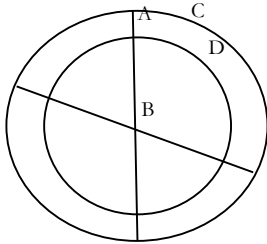
 Diiambo & Amphibraco equus & huius proprie pausa est longa imperfecta. Primus
itay secundi imperfectus.

¹¹ The modes presented here are off by one in the MS. I have retained the original error here.

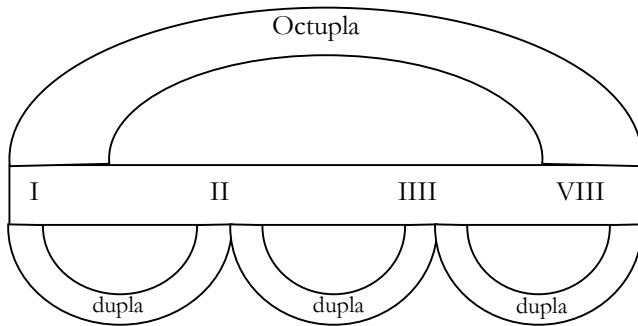
APPENDIX III

Diagrams found in
Cambridge, Corpus Christi College 410

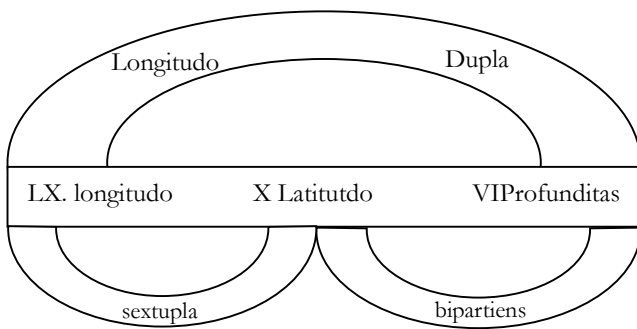
[1] f. 1v



[2] f. 1v



[3] f. 2r



[4] f. 2v

1	1	1	1
1	1	1	1
1	1	1	1
1	1	1	1

[5] f. 3v

I	II	III	IV
III	VI	IX	XII
III	VIII	XII	XVI

[6] f. 3v

I	II	III	IV	V	VI	VII
II	III	VI	VIII	X	XII	XIV
III	VI	IX	XII	XV	XVIII	XXI

[7] f. 3v

I	II	III	IV	V
VIII	XVI	XXVIII	32	VL
9	18	27	36	45

[8] f. 3v

1	3	9	27	81
	4	12	36	108
		16	48	144
			44	CCLVI

[9] f. 3v

I	III	IX	XXVII	LXXXI
	III	XII	XXXVI	CVIII
		XVI	XLVIII	CXLIII
			LXIII	CXCII
				CCLVI

[10] f. 3v

I	VIII	LXIII	DXII	III XCVI	XXXII. DCCLXVIII	CCLXII. CXLIII
	IX	LXXII	DLXXVI	III. DCVIII	XXXVI. DCCCLIII	CCXCIII. DCCCCXII
		LXXXI	DCXLVIII	V. CLXXXIII	XLI. CCCLXXII	CCCXXI. DCCLXXVI
			DCCXXIX	V. DCCCXXXII	XLI. DCLVI	CCCLXXIII. CCXLVIII
				VI. DLXI	LII. CCCCLXXXVIII	CCCCXIX. DCCCCIII
					LIX. XLIX	CCCCLXXII. CCCXCII
						DXXXI. CCCXLI

[11] f. 4r

III	III	V	VI	VII	VIII	IX	X
V	VII	IX	XI	XIII	XV	XVII	XIX

[12] f. 4v

II	III	VI	VIII	X	XII
V	X	XV	XX	XXV	XXX

[13] f. 4v

III	VI	IX	XII	XII	XV
VII	XIII	XXI	XXVIII	XXVIII	XXXV

[14] f. 4v

I	II	III	III
III	VIII	XII	XVI
IX	XVIII	27	36

[15] f. 4v

II	III	VI	VIII
VII	XIII	XXI	XXVIII

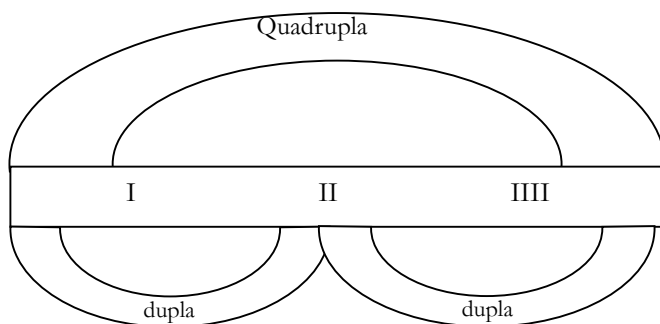
[16] f. 4v

I	II	III	III	V	VI
III	VI	IX	XII	XV	XVIII
X	XX	XXX	XL	L	LX

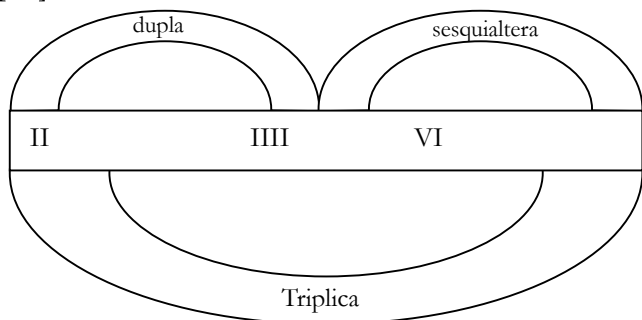
[17] f. 4v

III	VI	IX	XII
VIII	XVI	24	32

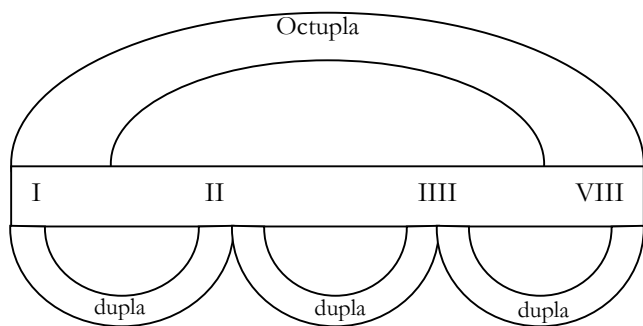
[18] f. 5v



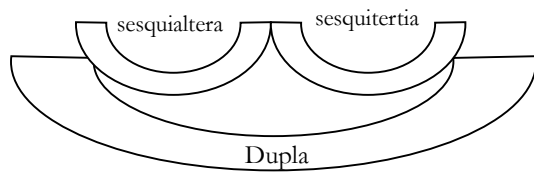
[19] f. 5v



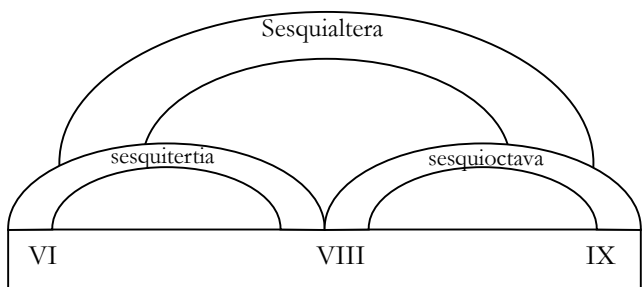
[20] f. 5v



[21] f. 5v



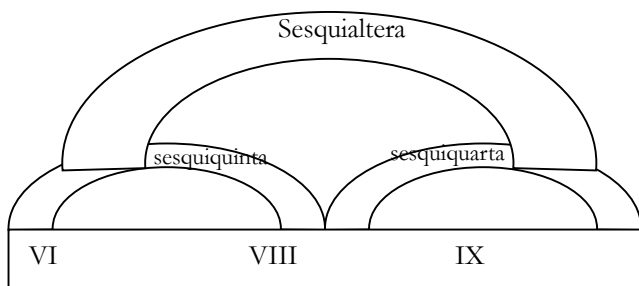
[22] f. 5v



[23] f. 6r

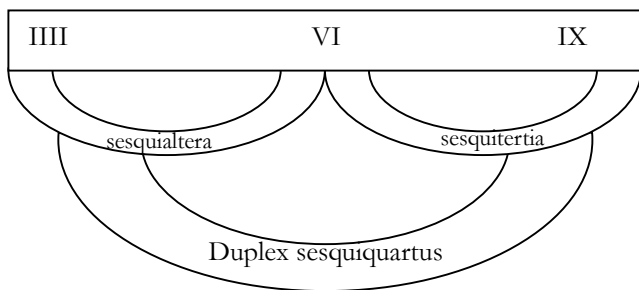
	CCLXII CXLIIII
Dupla	DXXIIII CCLXXXVIII
V sesquioctave	CCCCLXXII CCCXCXII
VI sesquioctave	DXLIX CCCCLI

[24] f. 6r

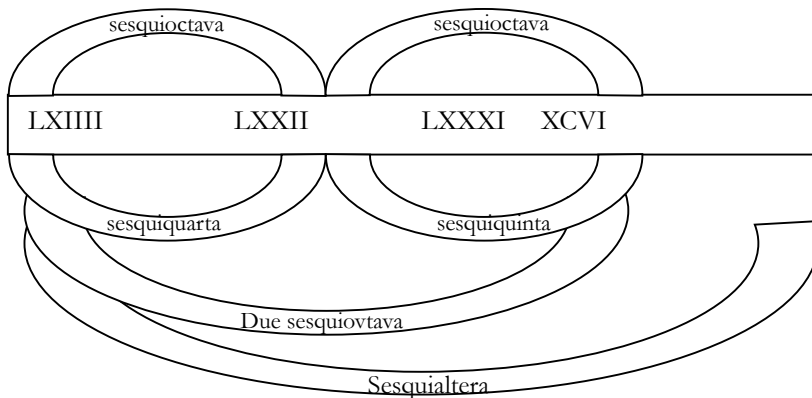


VII CIIII differentia

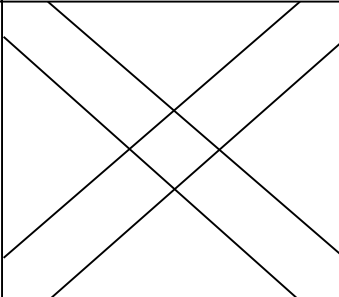
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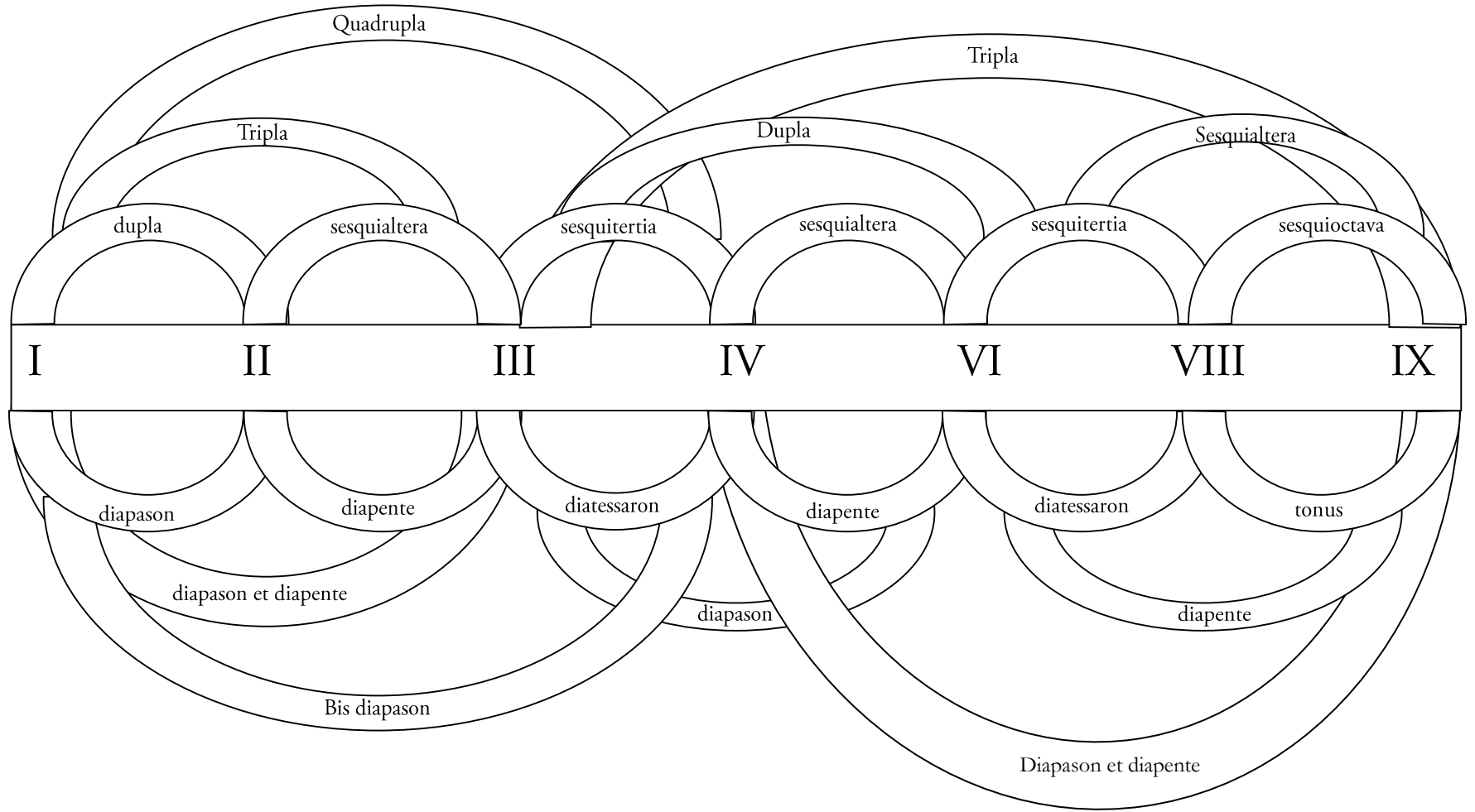
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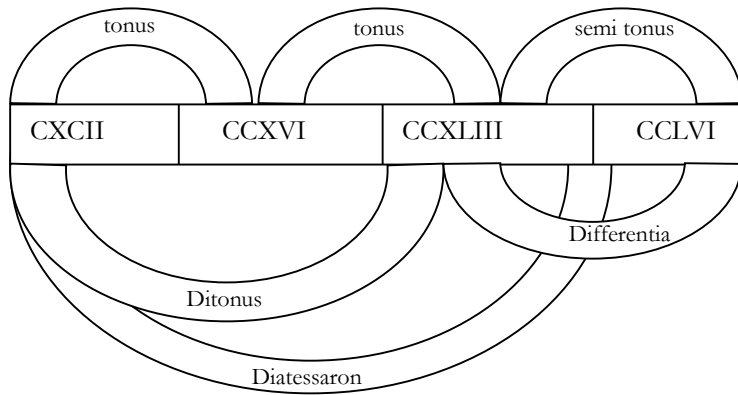
[27] f. 7v

VI	Dupla proportio	XII
Sesquitertia		Sesquitertia
VIII	Sesquioctava	IX

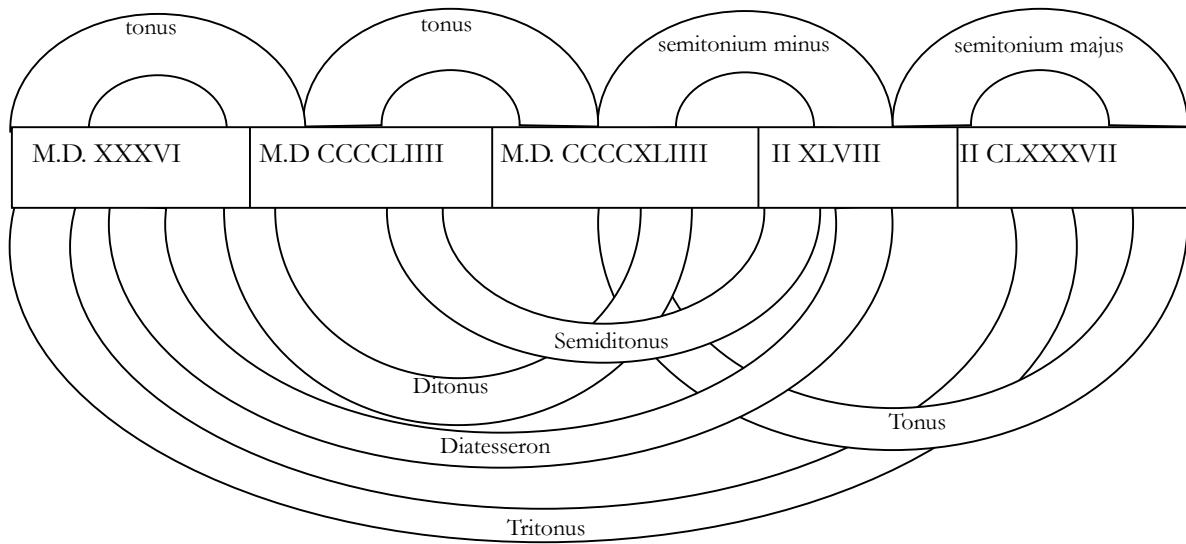
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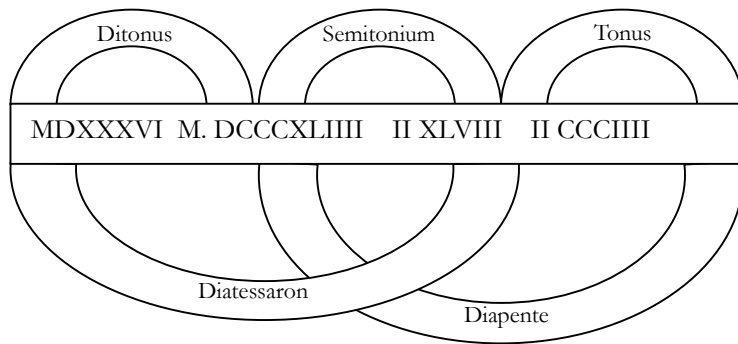
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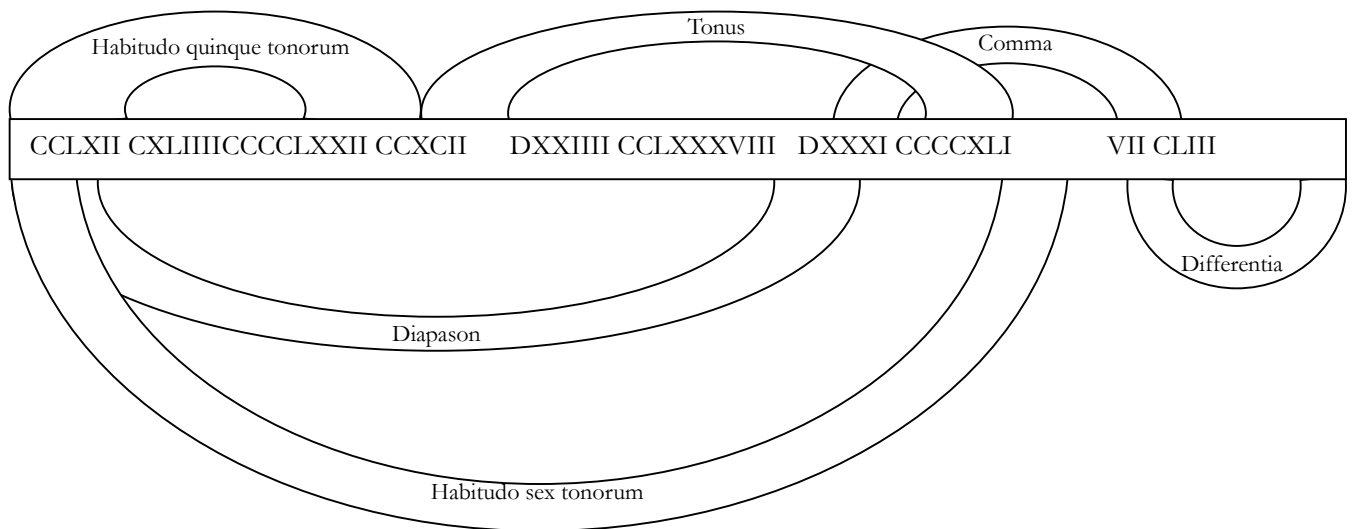
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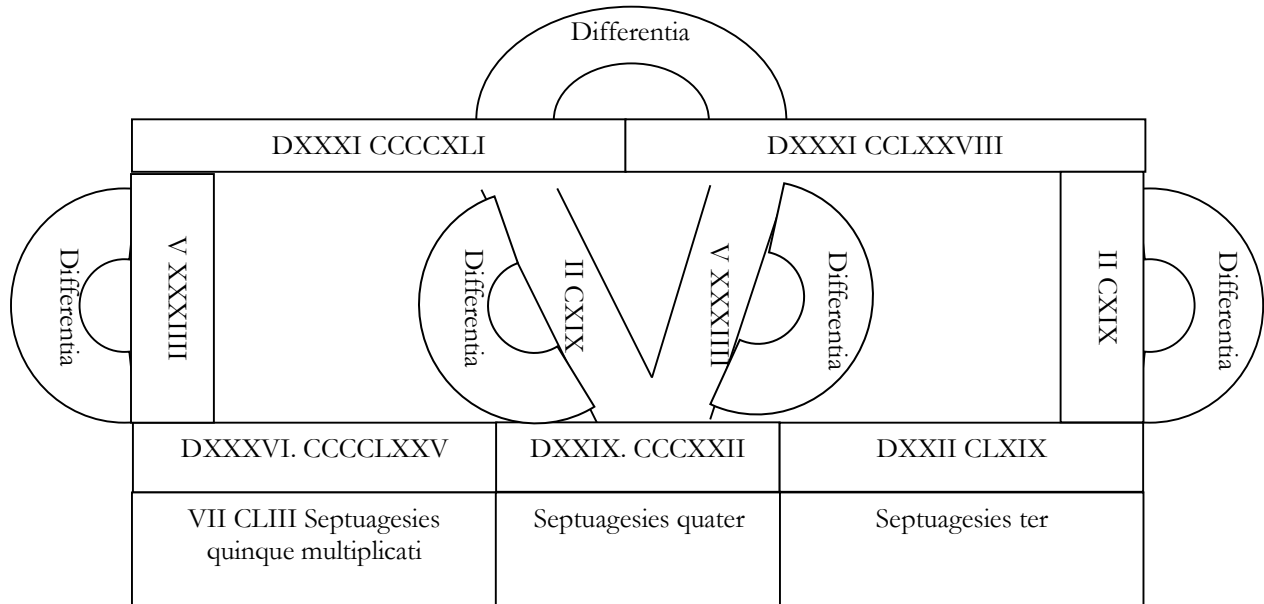
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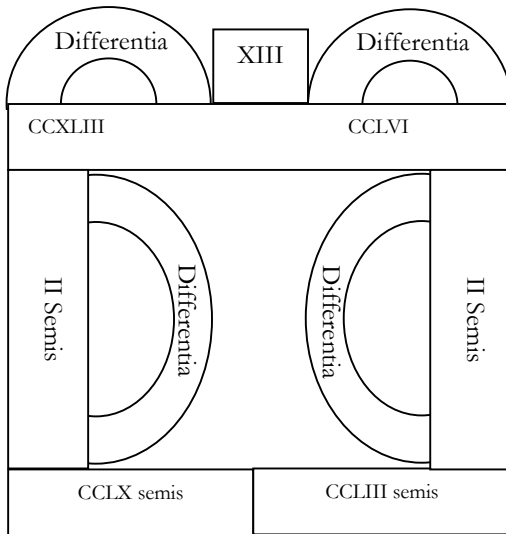
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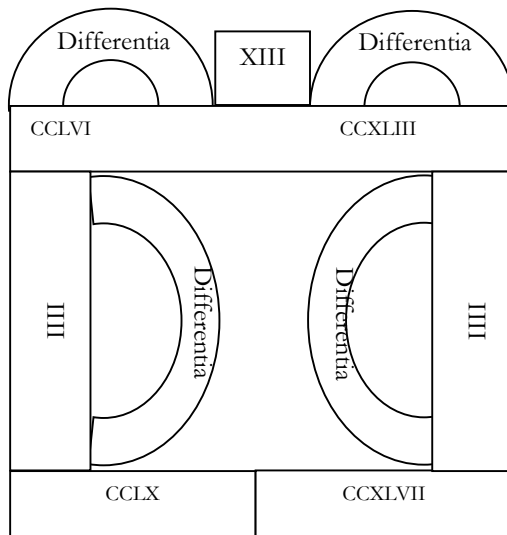
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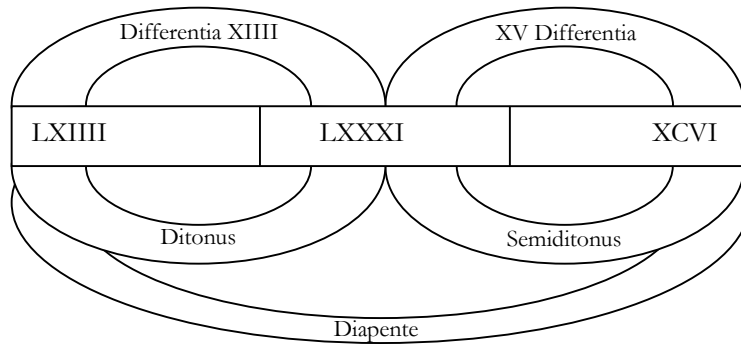
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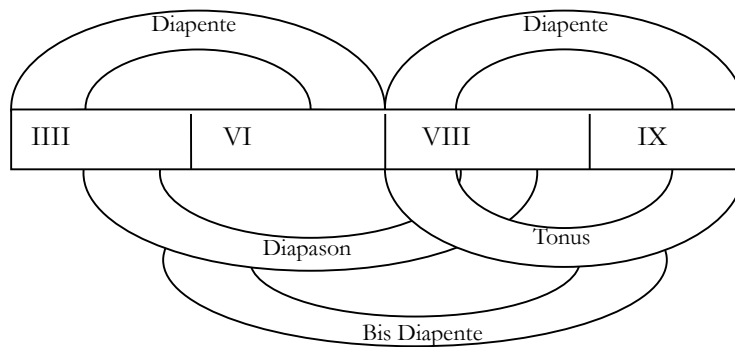
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[36] f. 10r



[37] f. 11r



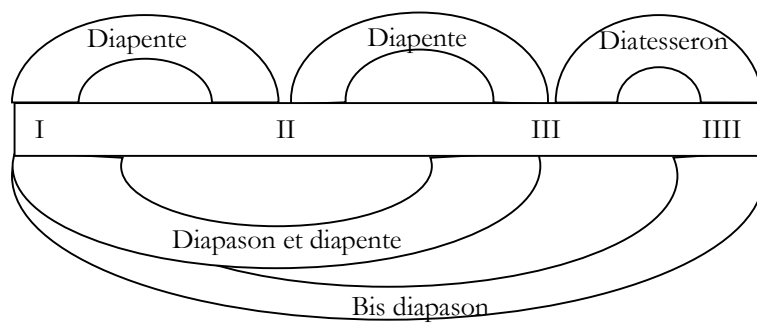
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III	VI	VIII
a	b	c

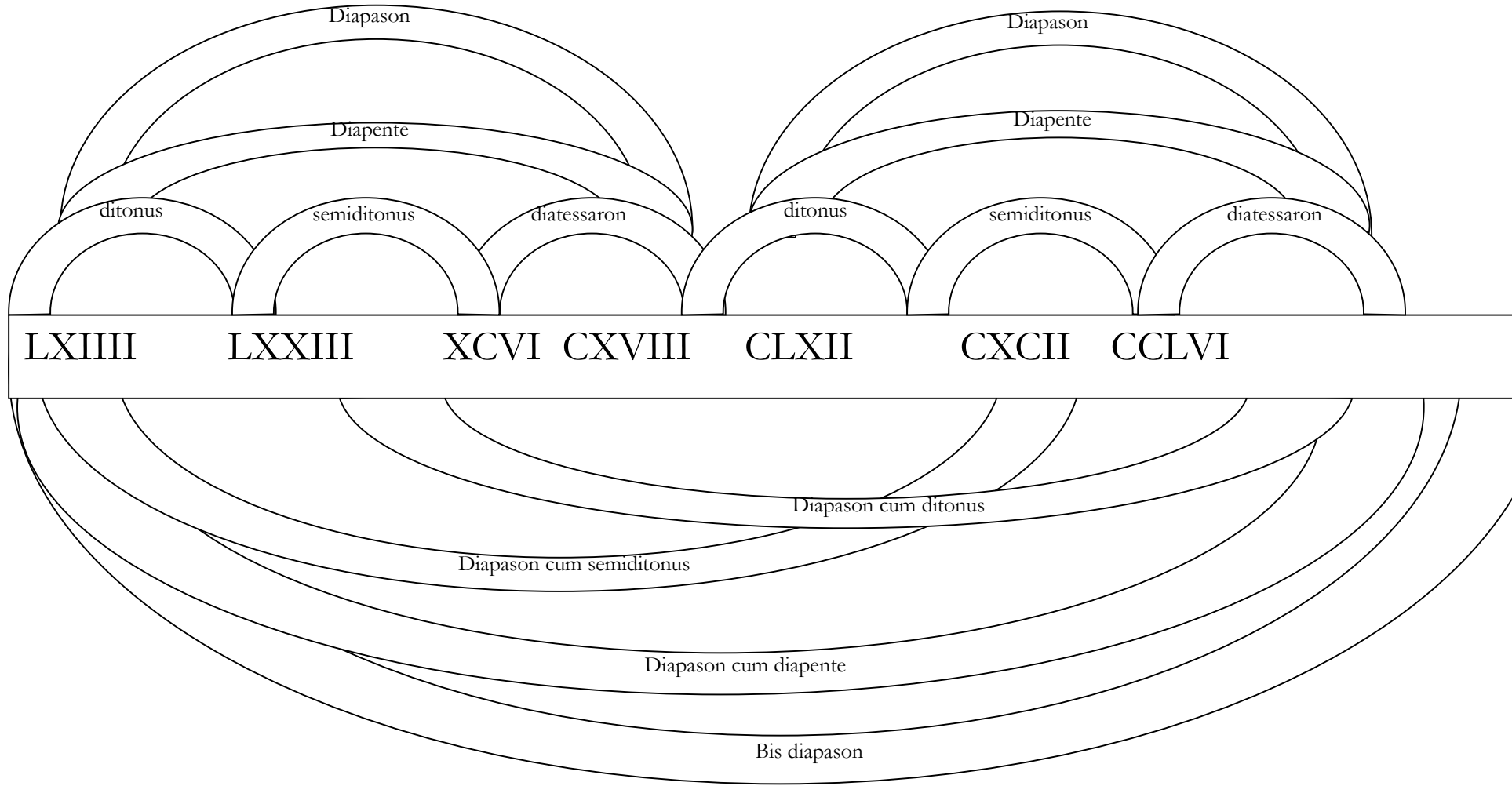
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VI	VIII	IX	XII
a	b	c	d

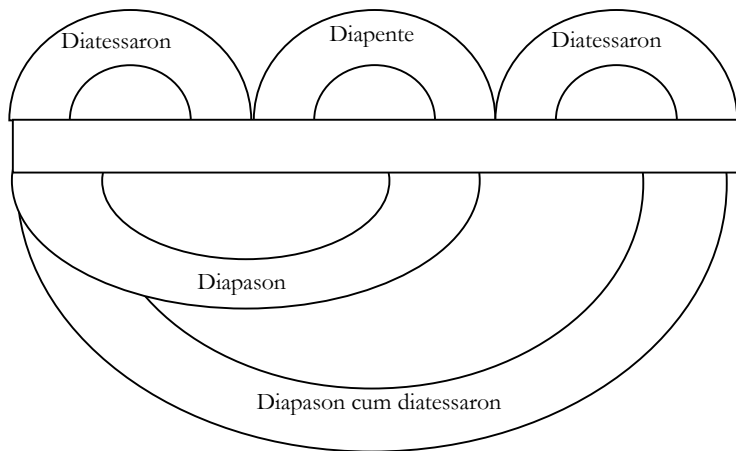
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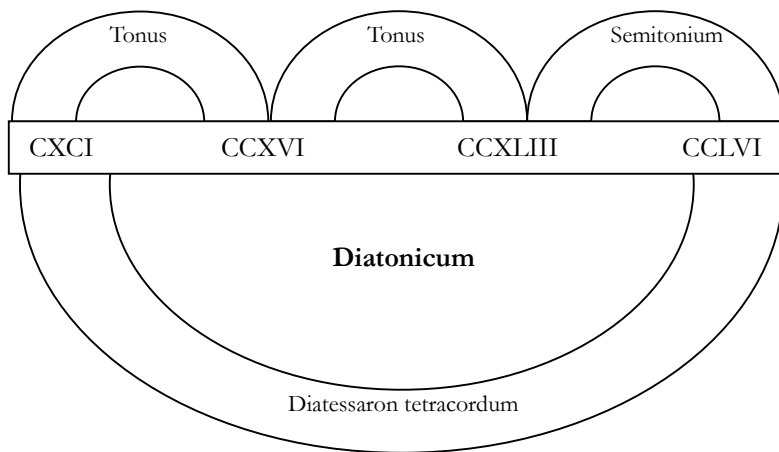
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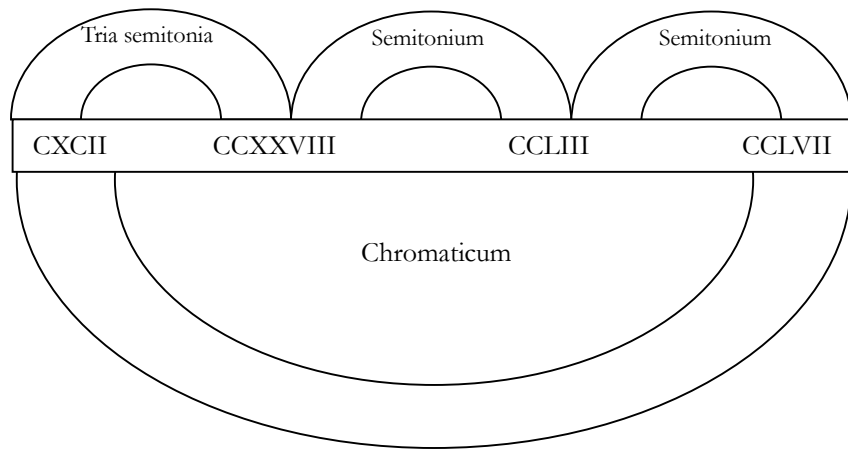
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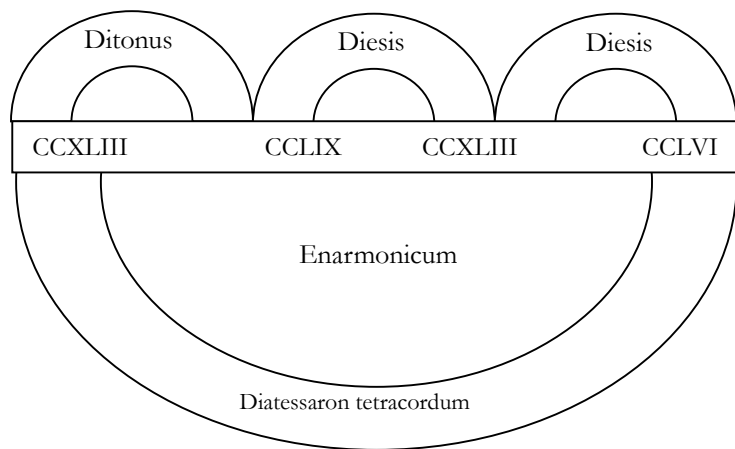
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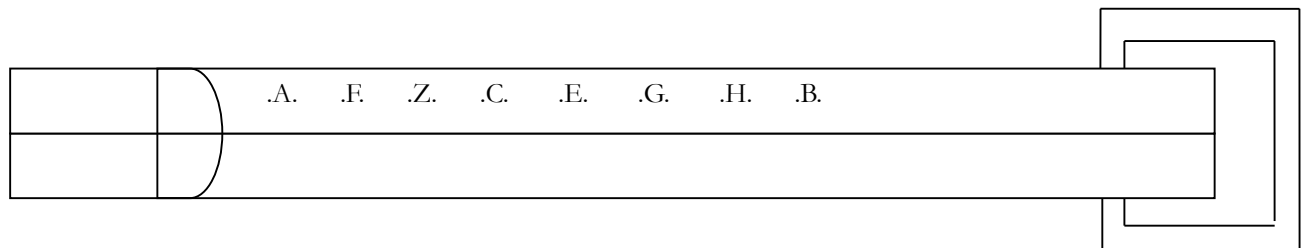
[44] f. 13r



[45] f. 13v



[46] f. 15v



[47] f. 16v

Tetracordum Diezeugmenon Synemmenon Meson Hypaton	Diatesaron		s	M. DCCXXVIII	Tonus	
	Diatesaron		r	MDCCCXLIII	Semitonium	
	Diapason		q	II XLVIII	Tonus	Maius
	Diatesaron		q	II DXXXVIII	Tonus	Semitonium
	Diatesaron		p	II CCCII	Tonus	
	Diatesaron		o	II DXCII	Tonus	
	Diapason		n	II DCCCCXVI	Semitonium	
	Diatesaron		m	III LXXII	Tonus	
	Diatesaron		l	III CCCCLVI	Tonus	
	Diapason		k	III DCCCLXXXVIII	Semitonium	Maius
	Diatesaron		i	III XCVI	Tonus	Semitonium
	Diatesaron		i	III CCCXXIII	Tonus	Semitonium
	Diatesaron		h	III DCVIII	Tonus	
	Diapason		g	V CLXXXIII	Tonus	
	Diatesaron		f	V DCCCCXXXII	Semitonium	
	Diatesaron		e	VI CXLIII	Tonus	
	Diapason		d	VI DCCCCLXII	Tonus	
	Diatesaron		c	VII DCCLXXVL	Semitonium	Maius
	Diatesaron		b	VIII CXCII	Tonus	Semitonium
Diapason		b	VIII DCCXLVIII	Tonus	Semitonium	
Diatesaron		a	IX CCXVI	Tonus		
Diatesaron		Γ	X CCCLXVIII			

[48] f. 17v

				b	c		d		e
			a	b	c		d		
Γ			a	b	c				

[49] f. 17v

				f		g		h			k
			e	f		g		h	i	i	
		d		e	f	g		h			
c		d		e	f	g					

[50] f. 17v

								f		g		h		i	k		l		m	n
							e	f		g		h		i	k		l		m	
						d		e	f		g		h		i	k		l		
				c		d		e	f		g		h		i	k				
				b	c		d		e	f		g		h						
		a		b	c		d		e	f		g		h						
Γ		a		b	c		d		e	f		g								

[51 see below]

[52] f. 19r

	II		II		II
	II		III		VIII

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