

Theoretical Treatments of the Semiminim
in a Changing Notational World
c. 1315–c. 1440

by

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Dissertation submitted in partial fulfillment of
the requirements for the degree of
Doctor of Philosophy in the Department of Music
in the Graduate School
of Duke University

2012

ABSTRACT

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ABSTRACT:

A semiminim is typically defined as a note value worth half a minim, usually drawn as a flagged or colored minim. That definition is one according to which generations of scholars have constructed chronologies and provenances for fourteenth- and fifteenth-century music and the people who created it. ‘Semiminims’ that do not match this definition are often portrayed in modern scholarship as anomalous, or early prototypes, or evidence of poor education, or as peculiarities of individual preference. My intensive survey of the extant theoretical literature from the earliest days of the Ars Nova through c. 1440 reveals how the conceptualization and codification of notation occurred in different places according to different fundamental principles, resulting not in one semiminim but a plethora of related small note values.

These phenomena were dynamic and unstable, and a close study of them helps to clarify a range of historical issues. Localized traditions have often been strictly bounded in scholarly literature; references to French, Italian, and English notation are commonplace. I explain notational preferences in Italy, England, central Europe, and the rest of western Europe with regard to these small note values but demonstrate that theorists educated in each of these places routinely incorporated portions of other traditions. This process began long before the ‘ars subtilior,’ dating at least to the time of Franco of Cologne. Rarely were regional traditions truly isolated; the various aspects of semiminim-family note values were debated and adapted for decades across these cultural and geographical boundaries. The central theme of my research is to show how and why the theoretical conceptualization of

these myriad small note values is key to understanding the continual merging of these local preferences into a more amalgamated style of notation by the mid-fifteenth century.

DEDICATION:

To my first and best teachers: Dad, Mom, Jen, and Grams[†].



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PROLOGUE:

What is a semiminim, anyway? In modern terms, a semiminim is typically defined as a note value worth half a minim, usually drawn as a flagged or colored minim. That definition is one according to which generations of scholars have constructed chronologies and provenances for fourteenth- and fifteenth-century music. ‘Semiminims’ that do not match this definition are portrayed as anomalous, or early prototypes, or as peculiarities of individual preference or quality of education. My intensive survey of the extant theoretical literature from the earliest days of the *Ars Nova* through c. 1440 reveals quite a different story: the conceptualization(s) and codification(s) of notation occurred in multiple places according to different fundamental principles, resulting not in one semiminim but a plethora of related note values that were smaller than the minim. These phenomena were dynamic and unstable, and a close study of them helps to clarify a range of historical issues.

Localized traditions have often been strictly bounded in scholarly literature; references to French, Italian, and English notation are commonplace. I explain notational preferences in Italy, England, Central Europe, and the rest of Western Europe with regard to these small note values but demonstrate that theorists educated in each of these places routinely incorporated portions of other traditions. This process began long before the ‘ars subtilior’ and the ‘mixed’ notation of the late fourteenth century, dating at least to the time of Franco of Cologne. Rarely were regional traditions truly isolated; various aspects of small note values were debated and adapted for decades across cultural and geographical boundaries. The central theme of my research is to show how and why the theoretical

conceptualization of small note values is key to understanding the continual merging of these local preferences into a more thoroughly amalgamated style of notation by the mid-fifteenth century.

In Chapter I, I begin by summarizing the main rhythmic trends in mensural notation prior to the earliest references to note values smaller than the minim c. 1315. Thirteenth- and early fourteenth-century theory was increasingly preoccupied with the individualization and subdivision of note values and with the elimination of ambiguity from its language. But while all areas of Western Europe relied to some degree on the theories of Franco of Cologne, theorists in particular regions – notably Marchetto of Padua, Johannes de Muris in Paris, and Walter ‘Odington’ and Robertus de Handlo in England – developed his ideas in distinct fashions. Later theorists constructed their ideas of semiminims and other small note values largely according to the notational principles in Marchettan and Murisian systems.

Chapters II through IV survey the treatment of small note values in extant fourteenth-century theoretical literature. I demonstrate how theorists couched their discussions of note values according to their main characteristics: their names (Chapter II), their rhythmic durations and philosophical substances (Chapter III), and their written shapes, or graphemes (Chapter IV). There were a wide variety of options in each category, yet the data reveals an overarching pattern. Those western and central European theorists who followed Murisian principles treated the semiminim as a binary subdivision of the minim, and used other names and shapes for note values that created other relationships with the minim. Particularly in England but occasionally in central Europe, the minim could be divided into either two or three smaller note values. But in Italy, those who followed

Marchettan theory treated the semiminim as a proportional value that could have numerous shapes and multiple relationships with the minim.

In the late fourteenth century, the desire to eliminate ambiguity from both notation itself and from the language used to discuss it led many scribes and theorists to use a variety of special note shapes and colors to denote ever more specific rhythms; this trend is often referenced in scholarship as the ‘ars subtilior.’ In Chapter V, I look at treatises that describe such notational systems. These eleven sources were written between c. 1370 and c. 1440, the latter date forming a bookend for the period covered in this study. I show that the ways in which these theorists and scribes manipulated note values to create complex figures required streamlining their definitions for each note value; the redefinition of these note values took place in increasingly pluralistic, blended theoretical systems. Chapter VI discusses the early fifteenth-century treatises that do not use the same complex notation. The growing presence of amalgamated notational styles is in evidence here, showing the same movement toward a more unified definition of the semiminim that is seen in Chapter V. Only by developing a general consensus for this semiminim could theorists start, in the 1440s, to discuss its subdivision into even smaller note values. I therefore terminate the main portion of my investigation c. 1440 and briefly summarize this new movement toward the later fusa in my conclusions.

Regardless of provenance, the treatises in the last two chapters overwhelmingly preferred the semiminim to be exclusively binary, while other proportional note values were given different names and shapes. In addition to the now commonplace black flagged figure, the semiminim could also be represented by a void or void flagged figure. Both of these

trends reflect the Italian preoccupation with and continuous adaptation of Murisian theory, but in ways that may seem counterintuitive. The Italian understanding of the semiminim as a proportion and the French idea of coloration as proportional conflated to create superficially illogical void and void flagged binary semiminims. These graphemes were then reincorporated into mensural theory and notation across western Europe, eventually resulting in the modern definition of the semiminim.

Throughout this document, I refer frequently to theorists, scribes, works, ideas, practices, and theories by regional adjectives: French, Italian, English, central or western European. As many recent discussions and research demonstrate, though, bounding things geographically is a slippery slope; to do so does not necessarily demonstrate the relocation of musical actors to places outside their provenance, the exchange of ideas across regional borders, or the resultant combinations of practices that reflect multiple heritages.

In his 1978 book on medieval music, Richard Hoppin stated that “a distinction must be made between English music and music in England,” since French compositions, styles, and genres were often found in insular sources. The same question, altered slightly, must be asked here. What is the difference, for example, between French theory and theory in France? I have, as a result, frequently used the terms ‘Murisian’ and ‘Marchettan,’ to further the idea that these nationalistic terms refer not necessarily to specific geographic regions but to the theoretical practices that developed out of these originally localized ideas – Muris in Paris and Marchetto in Padua. The fact that Marchettan-inspired theories have so frequently been deemed “Italian” in scholarship obscures the fact that the later blends of Marchettan and Murisian theories written in Italy are equally Italian; the adaptations of Murisian theory

in England, Italy, and central Europe means, of course, that “Murisian” cannot be synonymous with “French.” I have tried, therefore, throughout this document to be clear about using regional adjectives to describe practices happening within particular geographical places and otherwise clarifying their theoretical lineage.

My work relies predominantly on primary resources, especially the theoretical treatises themselves. When possible, I have examined them either in person or in a digitized or facsimile version. Supplementing these versions are contemporary critical editions and the TML online database of theoretical texts; yet, because of occasional errors in transcription and the many missing or misleading graphemes, I have made every attempt to verify their contents with the original sources. Many of these critical editions are now outdated and rely misleadingly on the aforementioned ‘modern’ definition of the semiminim for dating or provenance.

To contextualize these sources, I build on decades of scholarly publication on the music and musicians of the covered time period, linguistics and semiology, and studies of early notation. I also make considerable use of the surviving manuscript tradition of performing music, which to date has received the bulk of scholarly attention. My work on the theoretical tradition, however, brings to light regional principles that cannot be deduced solely from the performance sources; as such, it is my hope that this document will add to the vast scholarly literature that connects theory with performance traditions in order to provide a richer and more contextualized understanding of music in the late medieval and early modern periods.

PART ONE: The Fourteenth-Century Semiminim

CHAPTER I

Setting the Scene

*“Sed nonnulli novellae Scholae discipuli, dum temporibus
mensurandis invigilant, novis notis intendant, fingere
suas quam antiquas cantare malunt, in semibreves et
minimas ecclesiastica cantantur, notulis percutiuntur.*

But some disciples of the new school, concerned
with dividing the beat, fabricate new notes
which they prefer to sing more than the old ones
[and thus] ecclesiastical song is sung in semibreves
and minims and is choked with notes.”

✠Pope John XXII, *Docta sanctorum patrum*¹

In a study of the semiminim, why begin in the mid-thirteenth century? What possible insight could the theories and practices of earlier musicians shed on a note value they did not know? Nothing exists in a vacuum, and the semiminim did not spring fully formed from the head of a mensural Zeus. Thirteenth-century theories and practices laid the groundwork for the semiminim to come into use; in order to understand the later theoretical conceptions and practical applications of the semiminim, we must first understand the background that allowed for those things to develop.

¹ Emil Friedberg and Aemilius Ludwig Richter, *Corpus Iuris Canonici*, 2nd ed., 2 vols (Leipzig: ex officina Bernhardi Tauschnitz, 1922), cols 1255-7; Craig M. Wright, *Music and Ceremony at Notre Dame of Paris, 500-1550* (New York: Cambridge University Press, 1989), 346.

In this chapter, I will review the fifty years of theory and practice that precede the earliest theoretical descriptions of the semiminim; the developments in mensural notation during this period spread throughout greater Europe, taking hold in England, France, and Italy and in each location evolving in related but different manners. Despite regional differences in mensural theory, there was a similar drive in each place toward clearer and more precise notation. In attempts to improve upon the built-in ambiguity of modal notation, theorists developed the idea of individual, non-ligated note values as well as specific *graphemes*, or note shapes, to differentiate them on the page.²

Smaller durations were simultaneously becoming more frequently used, especially the *semibrevis minima* or minim, which was visually distinguished from the other semibreves through the use of an upward stem.³ The emancipation of individual note values from the rhythmic modes and the use of the new minim necessitated new mensural rules to supplant modal notation. Across Europe, the gravitation toward individual, graphically distinct note values, clearer and more precise notation, and the incorporation of smaller durations into newly developing mensural systems were all crucial trends that, in the next century, would permit the creation of the semiminim.

² Of course, much of what theorists discussed might not have originated with them; each theorist developed lines of thought or inquiry instigated by others, and their ‘creations’ most likely reflect myriad influences, from orally transmitted theoretical practices to classroom lectures to undocumented performance traditions to no longer extant theoretical works. Also, it is important to recognize that while theorists frequently described phenomena already occurring in performance, it is difficult to determine the readership or range of influence that lesser-known or uniquely copied treatises might have had, or whether the practices mentioned by the theorists were still currently being practiced.

³ Throughout this dissertation, the first introduction of a specific concept or term will be italicized for clarity.

I.1: The Roots of Mensural Notation: Johannes of Garlandia, Magister Lambertus, and Franco of Cologne

The first theoretical treatise that described a systematization of rhythmic notation beyond the rhythmic modes was *De mensurabili musica*. The earliest copy of it and its companion treatise, *De plana musica*, is found in the manuscript Rome 5325, a Parisian source dating from around 1260;⁴ in later treatises, the author is cited as Johannes de Garlandia.⁵

Johannes presented a full-scale description of the rhythmic modes, which consisted of six sets of predetermined patterns based upon varying repetitions of longs and breves, as shown in Figure 1 below. The lengths of these notes were not determined by note shape, or even by the style or number of notes in a ligature, but by the ways ligatures were placed in a given mode, which by necessity demanded prior knowledge to interpret them. Because of













⁴ The two treatises appear to be a pair; *De mensurabili musica* begins with a reference to a preceding plainchant treatise, and in the Vatican manuscript *De plana musica* holds that position, thereby linking the two together. For the rest of the manuscript sources for these treatises, please refer to the list of primary sources at the end of this dissertation.

⁵ While its teachings were cited at length in at least six sources (four of which are *reportationes* and two of which are the treatises by Anonymous IV and the anonymous St. Emmeram theorist), no name was provided for the author until Hieronymus of Moravia (d. after 1271) mentioned one Johannes of Garlandia. Later theorists Johannes de Grocheio and Guy Saint-Denis also cited Garlandia as the author of these two treatises. But biographical details for this Johannes of Garlandia are unclear. Louis Paetow and Gustave Reese tentatively proposed, and William Waite more strongly, that an Englishman by the name of John of Garland, a poet, grammarian, and instructor at the University of Paris in the early 13th century, was also our author. Modern scholarship has since largely overturned this theory, however, pointing out that the English John was in operation too early to be solidly equated with the music treatises, and also noting that the name of Johannes de Garlandia does not appear until relatively late in their chronological history. Therefore, it has been speculated that this Johannes was not the author, but instead the editor, compiler, or transcriber of the treatises, perhaps even for Hieronymus himself. For clarity's sake, however, I shall refer to the treatise as his.

See Louis J. Paetow, *Morale Sclorum of John of Garland*, *Memoirs of the University of California*, IV, 2 (Berkeley: University of California Press, 1927), 140; Gustave Reese, *Music in the Middle Ages* (New York: W.W. Norton & Company, 1940), 287; William G. Waite, "Johannes de Garlandia, Poet and Musician," *Speculum* 35, No. 2 (Apr., 1960): 179-195; Sandra Pinegar, "Textual and Conceptual Relationships among Theoretical Writings on Measurable Music during the Thirteenth and Early Fourteenth Centuries" (PhD diss., Columbia University, 1991), 244-250.

this ambiguity, Johannes attempted a clarification of and even an improvement on some of the more equivocal features of the modes. In doing so, he started a wave of attempts to erase imprecision from the precepts of mensural notation that continued for hundreds of years.

Figure 1: The Rhythmic Modes

Mode:	Ordo:	Examples of Notation:	Note Groupings:
I			3+2
II			2+3
III			1+3+3
IV			3+3+2
V			1+1+1+1+1
VI			4+3

Johannes's treatise introduced three specific types of clarification in mensural notation practice. First and foremost, he moved beyond the patterns inherent in the rhythmic modes to discuss the visual distinction of single, individual note values, specifically the three types of longs (duplex; plicated; and *recta*, worth two *tempora*) and three types of breves (recta, worth one *tempus*; plicated; and the semibreve).⁶ Graphical distinction of note values was not a new idea. The duplex long and the semibreve (previously also known as *climacus*, *currente*, or *coniunctura*) were already visually distinguished from breves and regular

⁶ See Garlandia's second chapter, in Erich Reimer, *Johannes de Garlandia: De Mensurabili Musica: Kritische Edition mit Kommentar und Interpretation der Notationslehre*, 2 vols (Wiesbaden: Franz Steiner Verlag GMBH, 1972), 44-46.

longs via their shape: the duplex long was horizontally extended, even in a ligature, while the semibreves were unligated rhombi.⁷ In the case of repeated notes (which could not be ligated, regardless of their duration), the long was visually distinguished through the addition of a downward stem on its right side.

The novelty in this system thus lay in extending the principle of graphically distinct note shapes to the different types of longs and breves outside of ligatures or repeated pitches. The vagueness inherent in the notation of the rhythmic modes prompted Johannes to distinguish individual notes with specific graphical shapes, not necessarily to allow for new or more varied rhythmic possibilities (although that subsequently happened) but to clarify exactly what mode or rhythmic pattern was actually in place.

Johannes extended the specificity of his notation beyond note values to include their corresponding rests, which was also a step beyond modal notation. In the rhythmic modes, vertical lines might mean either a change of syllable or a pause of unspecified length. The duration of the rest could only be determined using the same contextual clues that signified durations of note values. Because of the nature of the rhythmic modes, rests normally occurred at the end of the *ordo*, or modal pattern, not as an interruption during the pattern itself. The new concept of fixed, graphically distinct rest values brought greater flexibility and variety in rhythmic organization than had hitherto been documentable.

⁷ A shorter treatise dating from 1230-1240, the anonymous *Discantus positio vulgaris*, was apparently earlier than Garlandia in introducing distinct note shapes (as well as the principle of *recta* and *ultra mensura*), but it only survives in the later collection of works compiled by Hieronymus of Moravia. See Rebecca A. Baltzer, "Johannes de Garlandia," *New Grove*, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/14358> (accessed November 11, 2012).

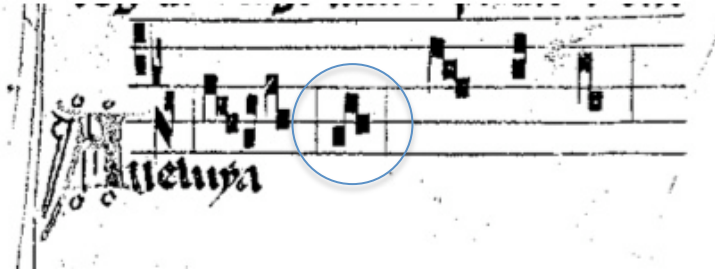
A third improvement was a clarification of the ligatures that had thus far made up the rhythmic organizations of the modes. The ligatures in the six rhythmic modes were comprised of longs and breves, but governed by the patterns inherent to whichever mode was in use at the time, as shown in Figure 1 above. Johannes did not challenge the authority that the modes had over the rhythms of the ligatures, but he did introduce the ideas of *perfectio* (perfection) and *proprietas* (propriety) into the discourse, laying out a system of rules according to which any written ligature could be parsed. The shapes of notes, the presence and direction of stems, and the overall contour of the ligature became the determinants of rhythmic duration.

We can witness ‘Garlandian’ notation in practice in several sources, most notably the Bamberg Codex. This manuscript dates from the last quarter of the fourteenth century, with the majority of its works written within the fifty years prior to its compilation. Both individual note shapes and ligatures that follow Johannes’s descriptions are easily spotted. Yet because all ligatures were governed by the rhythmic modes, a resulting problem was that different modes could use the same ligature to portray different rhythmic configurations. For example, Figure 2 shows three excerpts from the Bamberg Codex in which the same ternary ligature represents three different rhythms.

It was this sort of ambiguity that caused Johannes’s contemporaries to push for further clarification. Magister Lambertus refined Johannes’s concepts in his *Tractatus de musica* (c. 1265-75). He too discussed graphically distinct individual note shapes and rests, but he abandoned the plicated forms of the long and breve, leaving the duplex long, the perfect and imperfect long and breve, and the semibreve, and prioritized the perfect ternary long as

Figure 2: Ligatures in the Bamberg Codex

a. *Res nova mirabilis / Virgo decus Castitatis / Alleluia*, folios 59v-60:



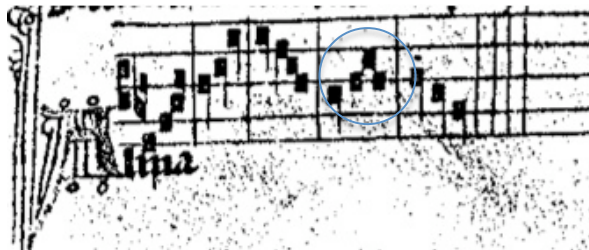
In this example, the ternary ligature is clearly in Mode 1, resulting in the rhythm quarter note-eighth note-quarter note.

b. *Je ne chant pas par renvoiserie / Talens m'est pris de chanter / Aptatur / Omnes*, folios 57v-58:



Here, the same ligature is used in both of the two tenor voices. The second tenor's reading of the ligature is the same as in the first example, in that it is also in Mode 1 and reads quarter note-eighth note-quarter note. However, the first tenor uses the ligature as part of a longer string of notes, with the result that it reads eighth note-eighth note-quarter note.

c. *Ave, Regina celorum / Alma redemptoris mater, que pervia celi / Alma*, folio 3v:



The same ternary ligature is found in this Mode 2 piece, resulting in a rhythm that reads eighth-note-quarter note-dotted quarter note.

being the note value from which all of the smaller note values stemmed. Lambertus divided breves into *recta* and *altera*, the former equal to one breve in length and the latter two breves. He also broke down the breve into groups of either three equal semibreves (*semibreves minores*) or two unequal semibreves (*semibrevis minor* and *semibrevis major*), expanding its role from Johannes's treatise.

Lambertus also discussed ligatures in order to clarify their rhythms outside of the modal system, which he had expanded to include nine modes. However, he took Johannes's ideas about propriety and perfection one step further, allowing that the shape of the ligature should be the primary rhythmic determinant. This, in the words of Mark Everist, was "clearly an attempt to render Johannes's system less dependent on context."⁸

His biggest step away from Johannes, partially in evidence already, was the application of the concepts of perfection and imperfection to longs and breves. By shifting the emphasis onto the ternary perfect unit, Lambertus described a system of perfections that needed to be completed by parts of the whole; that is, the perfect long or breve was comprised of smaller note values that operated under strict relationships with each other to complete the perfection. Since semibreves were still not independent figures unto themselves, they could only serve as grouped substitutes for a breve, not as individual durations capable of imperfecting or altering a breve.

This idea of perfection and imperfection had lasting influence on the burgeoning mensural notation system, but it was not without its detractors. The anonymous St. Emmeram theorist, in *De musica mensurata* of c. 1279, retaliated against the concept. He stated

⁸ Mark Everist, "Music and Theory in Late Thirteenth-Century Paris: The Manuscript Paris, Bibliothèque Nationale, Fonds Lat. 11266," *Royal Musical Association Research Chronicle* 17 (1981): 56.

that individual notes such as the long, breve, and semibreve did exist and could be distinctly notated, but rather than being perfect or imperfect, they were instead larger or smaller, with the smaller duration being labeled perfect. Still, despite this difference of opinion with Lambertus, the author declared Johannes of Garlandia's theories to be valid and upheld his ideas with regard to the clarity in notation created by fixed rests, individual notes, and the concepts of propriety and perfection.

Shortly after *De musica mensurata*, all of these new opinions, discussions, and debates about the rules of notation came to a new height. Franco of Cologne, best known for authoring the treatise *Ars cantus mensurabilis* (ca. 1280), distilled Johannes's and Lambertus's ideas into what became the foundations of mensural notation across western Europe.⁹

We know very little about Franco's personal history, and what is known is tentative at best. There were two Francos in the mid to late thirteenth century, according to the theorist Anonymous IV: one from Cologne, and one either older or perhaps known earlier (or both).¹⁰ This earlier Franco is given authorship, or at least editorship, of the treatise in

⁹ The extant copies of his treatise are found in the following manuscripts, according to Gilbert Reaney and André Gilles: Milan D 5 inf., Paris 11267, Saint-Dié 42, Trezzano, Oxford 842, and Paris 16663. Reaney and Gilles felt that the first four manuscripts listed were stemmatically linked, whereas the last two were connected to each other. Andrew Hughes lists part of the anonymous *Ars musica mensurabilis secundum Franconem*, found in Uppsala C 55, as a seventh source for Franco's treatise, but neither it nor Hughes' eighth source, the manuscript Paris 16667, are mentioned by Reaney and Gilles as sources for the *Ars cantus mensurabilis*. The date for the manuscript remains in question, but I follow Reaney and Gilles in placing the treatise closer to 1280 than the earlier dates favored by Michel Huglo and Heinrich Besseler.

Gilbert Reaney and André Gilles, editors, *Franconis de Colonia: Ars Cantus Mensurabilis*, CSM 18 (Rome: American Institute of Musicology, 1974), 12-19; Andrew Hughes, "Franco of Cologne," *New Grove*, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/10138> (accessed April 24, 2011).

¹⁰ "... in majori parte usque in tempus Magistri Franconis Primi et alterius Magistri Franconis de Colonia ...

... until the time of Master Franco the first, and of the other Master Franco of Cologne ..."

Milan D.5.inf. as “*magistro francone parisiensi*,” or the Magister Franco of Paris. The version copied by Hieronymus of Moravia in the manuscript Paris 16663 stated that a Johannes de Burgundia claimed authorship of the treatise, although popular opinion held that it was actually by Franco of Cologne. The assertion that Franco was in fact from Cologne is made in both the Saint-Dié and Tremezzo manuscripts, in which he is described as a *dominus*, a papal chaplain and a preceptor of the Knights Hospitaller of St. John of Jerusalem in Cologne.¹¹

Contemporary scholarship acknowledges that Cologne is an acceptable, though not verifiable, possibility for Franco’s origins. The claim in the Saint-Dié and Tremezzo manuscripts that Franco had worked in Cologne cannot be proved, as no records from either institution mention him by name. But later generations of theorists referred to him as being “of Cologne,” although Jacobus de Liège was less specific, calling him “Franco teutonicus.”¹² Saint-Dié 42 also preserves other treatises by a Frater Jordanus de

Trans. Willi Apel, *The Notation of Polyphonic Music 900-1600, revised 5th edition with commentary* (Cambridge, Mass., The Medieval Academy of America, 1953), 310;
http://www.chmtl.indiana.edu/tml/13th/ANO4DEM_TEXT.html

Throughout this dissertation, all translations into English are my own unless otherwise credited, as here; I extend my most heartfelt gratitude to Professor Kerry McCarthy for her helpful suggestions.

¹¹ Saint-Dié 42: “*Reverendi viri cuiusdam Domini Franconis Capellani Domini Pape nec non Preceptoris domus Coloniensium hospitalis sancti Iohannes ierosolimitani*,” Tremezzo: “*magistri Franconis quondam capelani domini .d. pape necnon et preceptoris domus Coloniensis hospitalis sancti Iohannis Ierosolimitani*.”

Reaney and Gilles, *Franconis de Colonia*, 17-19.

¹² Books 1, 4, and 7 of *Speculum Musicae*:
http://www.chmtl.indiana.edu/tml/14th/JACSP1A_TEXT.html;
http://www.chmtl.indiana.edu/tml/14th/JACSP4_TEXT.html;
http://www.chmtl.indiana.edu/tml/14th/JACSM7_TEXT.html

Blankenborch, thought to be of German or Flemish origin, thus potentially placing Franco's work within a north German orbit.¹³ Cologne and Paris were closely connected in the thirteenth century, so it is quite possible that a person such as Franco, coming from Cologne, would have found Paris a welcome environment.

While the extant copies of his treatise are few, and contain biographical detail that is at worst conflicting and at best vague, Franco's later reputation and influence in Paris and elsewhere cannot be denied. Music written in accordance with his teachings was soon found in Parisian manuscripts, such as some of the works in Paris 11266 or the first and seventh

A small note must be added here about Jacobus, the author of the *Speculum musicae*. His name is known from the acrostic that is formed at the beginning of each book of the treatise, and he mentions Paris, St. Denis, and Liège several times, but he never explicitly mentions his origins. Due to his familiarity with theoretical sources and plainchant traditions connected with Liège, Jacobus has frequently been tied to that region in contemporary scholarship. The fourth book of the Berkeley manuscript, though, refers to one Jacobus de Montibus, who is now thought by some to be identical with the author of the *Speculum*. More recently, however, Margaret Bent has remarked in a conference presentation that a new description of the *Speculum* calls its author 'Jacobus de Hispania,' calling into question his Liégeois provenance. Given that current scholarship almost exclusively labels Jacobus as 'de Liège,' I have maintained that reference to him in this document to avoid any confusion for its readers. For more information, see Karen Desmond, "New Light on Jacobus, author of *Speculum musicae*," *Plain-song and Medieval Music* 9, no. 1 (2000): 19-40.

¹³ Reaney and Gilles state that Jordanus's roots are from Blankenberghe in Belgium, though it is unclear why they believe that this is his town of origin apart from a similarity in name. Likewise, Andrew Hughes states that he "must have been of north German origin," though he does not clarify this statement with any further detail. Jeffrey Palenik discusses the fact that some French and Flemish areas were referred to as 'German' if they fell within the borders of the Holy Roman Empire, but presumably Hughes is referring to modern-day north Germany. A very brief search of modern town names reveals not only a Blankenberge in Belgium, but a Blankenberg, two Blankenburgs, a Blankenborg, a Blankenbergweg, a Blankenbach, and a Blankenborn in many regions of today's Germany, and a Blankenborghoek in the Netherlands. Suffice it to say that regardless of whether these place names were similar in the fourteenth century, and regardless of whether one of them might have been Jordanus's home town, it seems likely that he was of German or Flemish origin.

Jeffrey Palenik, "The Early Career of Johannes Tinctoris: an Examination of the Music Theorist's Northern Education and Development," (PhD diss., Duke University, 2008); Reaney and Gilles, *Franconis de Colonia*; Hughes, "Franco of Cologne."

fascicles of the Montpellier Codex, and in his *Speculum Musicae* (ca. 1325), Jacobus de Liège stated that he once heard a composition by Franco being performed in Paris.

Contemporaneous writers also acknowledge his influence; Anonymous IV mentioned in particular that the way in which Franco wrote music was different than what came before.¹⁴ Despite such claims to fame, no music is known today that can be proven to have been written by Franco and *Ars cantus mensurabilis* is the only treatise that can be attributed to him with any probability. Yet its impact is without question: the treatise was widely cited throughout Europe over the next two hundred years, it changed the fundamental rhythmic tenets of Western notation, and it inspired numerous later theorists to continue along his lines.

The concept that Franco explored in this treatise, like Johannes of Garlandia and Magister Lambertus before him, was that different temporal durations in music could – and should – be expressed through specific, individual note shapes, not just through knowledgeable interpretation of pre-configured rhythmic patterns. He began with a discussion of the rhythmic modes that had been prevalent in the previous generations, and then clarified their inherent rhythms by using more specific graphemes for duplex longs, longs, breves, semibreves, and their corresponding rests.

¹⁴ “This was done in a similar fashion, etc., just as Petrus the best notator and Iohannes called the first, along with certain others, for the most part used to notate, up to the time of Master Franco the first, and the other Master Franco of Cologne, who for their part began to notate differently in their books [*in suis libris aliter pro parte notare*]. And for this reason they handed down other rules of their own, appropriate to their books.”

Trans. Jeremy Yudkin, *The Music Treatise of Anonymous IV: A New Translation*, MSD 41 (Rome: American Institute of Musicology, 1985), 40.

This was still an ambiguous system; Franco did not completely erase the need for knowledgeable deciphering of notational contexts. On one hand, most of these note shapes had two possible qualities. Longs were either perfect or imperfect. Breves could be *recta*, which at this stage simply meant normal or unaltered, or *altera*, meaning lengthened to two breves, and semibreves could either be major or minor. Once again, they could not stand alone; minor semibreves were equal and found in groups of three, while major semibreves were worth two minor semibreves. The durations of these note shapes depended on their placement within a given perfection, which might be marked off by a *signum perfectionis*, or a short stroke through the bar line.

On the other hand, Franco set forth his approach toward ligated notes, which had their own contexts for rhythmic duration. Once again, *proprietas* and *perfectio* are discussed, but he developed these concepts further such that the more precise shapes of the notes and ligatures were now the only determinant for their rhythms. Franco kept the rules for *proprietas* that had been formerly laid out by Johannes and Lambertus, but here, the rules for *perfectio* were clarified so that the value of the last note was unmistakable.

While much of Franco's theory depended on the earlier writings of Johannes of Garlandia and Magister Lambertus, he systematically expanded upon the innovations brought to light in their treatises: the movement toward smaller durations, the use of individual note values, and the increased precision in mensural notation brought about by the use of specific and distinct graphemes. These expansions proved to have a lasting impact on the evolution of mensural notation. The next generation of theorists in France, Italy, and England built upon different facets of his theory to create unique and, in some ways,

mutually exclusive mensuration systems that would not easily be joined together for another hundred years.

1.2: Franco in France

The element of Franco's teachings that received primary focus from his younger contemporaries in France was the new specificity in the subdivision of the breve unit. As *Ars cantus mensurabilis* stated, a breve could be divided into either a group of three minor semibreves, each worth one unit of time, or a group of two unequal semibreves, the first minor and the second major. However, the later theorist Jacobus de Liège reminisced that he once heard a composition by Franco in which more than three semibreves were used within one perfection, implying that at some point as a composer, Franco had moved past his own theory and further subdivided the breve.¹⁵

The notion that the breve could contain more than three semibreves might have been instigated by Petrus de Cruce, a slightly younger theorist from Amiens who worked around 1290. He and Franco most likely knew each other, as they were at the University of Paris around the same time, and Petrus was certainly familiar with Franco's principles. He

¹⁵ "*Item videtur mihi Parisius audivisse triplum a magistro Franchone, ut dicebatur compositum, in quo plures semibreves quam tres pro uno perfecto ponebantur tempore.*"

Also, it seems to me that I heard in Paris a triplum by magister Franco, who was said to have composed it, in which more than three semibreves were placed for one perfect tempus."

http://www.chmtl.indiana.edu/tml/14th/JACSM7_TEXT.html

divided the breve not just into three equal or two unequal semibreves, but up to seven (purportedly equal) semibreves.¹⁶

Because a breve could contain anywhere from two to seven semibreves, it was difficult at times to ascertain the boundaries of the breve in long strings of semibreves. To that end, Petrus specified that a dot of division, or *punctus divisionis*, should be used to separate successive breve-groups for clarity's sake. This punctus eventually began to be used

¹⁶ Scholarly debate is still ongoing as to whether the Petronian semibreves, as they came to be called, were in fact actually equal or whether some sort of Franconian ternary grouping should apply on a smaller level (i.e. that even when more than three semibreves occupied the space of a breve, they should be separated into groups of three equal and two unequal semibreves). However, deference is frequently given to Jacobus de Liège, who stated in the *Speculum Musicae* of c. 1325:

"Quod si moderni multis distinctionibus, multis nominationibus utantur in semibrevibus, quidquid sit de figuris antiqui, quantum ad rem, uti videntur pluribus. Nam cum pro eodem et equali tempore, pro brevi recto importato, nunc duas semibreves ponerent inaequales; nunc tres equales, nunc quatuor, quinque, sex, septem, octo vel novem ... Cum tot distinctionibus in semibrevibus uterentur, numquam eas in figuris distinxerunt, nunquam eas caudaverunt, et tamen eas sufficientur ab invicem per puncta diviserunt.

The modern musicians use numerous distinctions and names for the *semibreves*. Whatever variety there may be in shapes, the old masters in reality had a larger variety. For one and the same *tempus*, namely, that of the *brevis recta*, they used two *semibreves* unequal in value, or three, four, five, six, seven, eight and nine equal *semibreves* ... Although they used such a variety of *semibreves*, they never distinguished them in shape, never provided them with dashes; yet, nonetheless, they discriminated them from one another sufficiently by *puncta*."

This reading of Jacobus's treatise is by no means the only one; Margaret Bent, in particular, has derided this translation as a misreading of the original Latin, stating that "Apel's claim ... that Petrus introduced a system without precedent or progeny using five or seven equal semibreves is based on a misreading of Jacobus, who would surely have condemned such temerity (*New Grove*)."

Yet Ernest Sanders, in his study of modal rhythm in the thirteenth century, believes that such semibreves would in practice have been sounded equally. Because scholarly opinion is still at odds over the supposed equality of the Petronian semibreves, many of the transcriptions and editions of manuscripts containing music in a Petronian style are made in conflicting manners; one must take care to know on which side of the debate the transcriber is on, and use one's best judgment in deciding how best to interpret groups of Petronian semibreves in extant compositions. No treatise on mensural music by Petrus survives, though his tonary, *Tractatus de tonis*, is still extant.

Trans. Apel, *The Notation of Polyphonic Music*, 322-323; Ian D. Bent, et al, "Notation," *New Grove*, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/20114pg6> (accessed March 3, 2012); Denis Harbinson, *Petrus de Cruce: Tractatus De Tonis* ([s.l.]: American Institute of Musicology, 1976); Carl Parrish, *The Notation of Medieval Music* (New York: Pendragon Press, 1978), 111; Ernest H. Sanders, "Duple Rhythm and Alternate Third Mode in the 13th Century," *Journal of the American Musicological Society* 15, no. 3 (October 1, 1962): 249-291; Ernest H. Sanders and Peter M. Lefferts, "Petrus de Cruce," *New Grove*, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/21491> (accessed March 3, 2012).

Figure 3: Montpellier Codex, *Aucun out trouvé chant / Long tans me sui tenu / Annuntiantes*, fols. 278-278v

mul talent mes a celui
qui pome ne la desert lo
cive ala fois tout en
necement

Aucun ont trou
ue chant par usage mes
amoi en doune ochorlon

a finz amans
qui a son ro
lor se obcurat
sans mespris.

Donc
tous me fu te
nu

amours qui resbaudist
mon couraige si que mes
nier tante chanson au a
mer me fait dunc bele & la
ge & de bon remon & ie qui
li a fait hommage pour
li servir tout mon aage
de loial cuer sans penser

de chanter mes
or a maison de
roie mener
car boune a
mour me fait
desiner la mer

as a means of distinguishing perfections from each other, regardless of whether said perfections involved strings of semibreves. Such dots of division can be seen in the motet *Aucun out trouvé chant / Long tans me sui tenu / Annuntiantes* on folios 278-278v of the Montpellier Codex, shown in Figure 3.¹⁷

Petrus de Cruce's contemporary, Petrus le Viser, also stipulated that the brevis recta could hold larger numbers of semibreves.¹⁸ However, le Viser distinguished between three possible tempi that the tempus, or breve, could take, thereby delineating the number of possible semibreves per breve. In *mos longus*, any number of semibreves (presumably up to the seven prescribed by Petrus de Cruce) could take the place of a breve, implying a tempo slow enough to allow for them. A slightly faster tempo, *mos mediocris*, prescribed two to five semibreves to the breve; even numbers of semibreves were equal and odd numbers were unequal according to a binary division of the breve. His last and fastest tempo was *mos lascivus*, which was too spirited to allow for any more than two or three semibreves divided along Franconian lines (i.e. three equal minor semibreves or two unequal semibreves).

The significance of le Viser's theories is two-fold. First, the explicit delineation of his three *mores*, or modes, is of great use in extending what little we understand about contemporary performance practice, especially where such vague but crucial concepts as

¹⁷ Apel, *The Notation of Polyphonic Music*, 321. This motet was cited by Jacobus de Liège, Robertus de Handlo, and the anonymous author in the Faenza Codex for its parsing of semibreves.

¹⁸ The theories put forth by Petrus le Viser are only known from the later English theorist, Robertus de Handlo, who describes them in his *Regule*, dating from 1326. They are described in Peter M. Lefferts, ed. and trans., *Robertus de Handlo: Regule / The Rules, and Johannes Hanboys: Summa / The Summa* (Lincoln, NE: University of Nebraska Press, 1991), 22–4, 104–9; Ernest H. Sanders, "Petrus Le Viser," *New Grove*, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/21496> (accessed March 3, 2012).

tempi are concerned. Secondly, his approach to subdivision is undeniably important. As

Ernest Sanders points out,

“Petrus [le Viser] was thus the first to recognize at least special categories of imperfect mensuration on the two levels of *modus* and *tempus*. At the same time he unwittingly introduced what later came to be known as *prolatio minor*, since each of a group of four semibreves (in effect, minims) in *mos mediocris* has half the value of each of a group of two.”¹⁹

While le Viser made no claim to have invented either the minim or the system of prolation, his theories were influential upon later French musicians Philippe de Vitry, Johannes de Muris, and Jacobus de Liège.

About Vitry we have more biographical information; the earliest references to him date to 1321, when he was awarded a canonry in Cambrai, and he was also a canon of the collegiate church of Notre Dame in Clermont-en-Beauvais, some 120 kilometers to the southwest. He was a well-known composer and referenced as a theorist, most importantly as the author of one of the most influential theory treatises of the early fourteenth century, *Ars Nova*.

As Sarah Fuller has aptly noted, however, what scholarly literature has labeled the *Ars Nova* was not one unified treatise, nor were any of the individual treatises thought to comprise it definitively written by or related to Vitry at all.²⁰ These treatises not only stem

¹⁹ Sanders, “Petrus Le Viser.”

²⁰ Sarah Fuller, “A Phantom Treatise of the Fourteenth Century? The *Ars Nova*,” *The Journal of Musicology* 4 (1985-86): 23-50. See also Daniel Leech-Wilkinson, “The Emergence of *ars nova*,” *Journal of Musicology* 13, no. 3 (Summer, 1995): 285-317; Karen Desmond, “Behind the Mirror: Revealing the Contexts of Jacobus’s *Speculum Musicae*,” (PhD diss., New York University, 2009).

The manuscripts previously believed to be parts of the *Ars Nova* as written by Philippe de Vitry are listed here. Italicized manuscripts are sources that are related to Rome 307-I and not fully part of the accepted body of *Ars Nova* works. Manuscripts with asterisks are ones that mention the semiminim and will be

from different provenances, they also are only generally datable to the early or middle fourteenth century, or even later. They cannot, therefore, be considered reliable witnesses to a specifically Vitryan tradition, though they certainly have much to inform us about early fourteenth-century French mensural theories. They have been tentatively dated by Edward Roesner, Sarah Fuller, and Ulrich Michels, among others, to within five years on either side of 1320, because of the relationship of their notational theories to that of more securely datable treatises such as those by Johannes de Muris and Jacobus de Liège.

Some of what these treatises discussed is a reiteration of earlier theories proposed by Franco and the two Petruses, namely that individual single note shapes and their corresponding rests were of importance in the clear notation of mensural music. However, the innovations introduced by the Vitry circle, and more importantly Johannes de Muris,

discussed in this dissertation. For the sake of clarity in this dissertation, I will refer to each distinct treatise by its incipit, and to the collection of works as the *Ars Nova* complex or the former *Ars Nova* treatises.

*London 21455, fols. 1-6

Rome 1146, fols. 57-65v

*Paris 7378A, fols. 61v-62

Rome 5325, fols. 2v-7v

Paris 14741, fols. 4-5

Siena L.V.30, fols. 129-129v

Paris 18514, fols. 87-94

*Rome 307, fols. 17-18v (hereafter Rome 307-I), fols. 19-20v (*hereafter Rome 307-II)

The last manuscript, Siena L.V.30, is actually an abbreviated portion of another treatise, *Omni desideranti notitiam*, found also in Chicago 54 and Sevilla 5.2.25. Coussemaker printed the portion found in Siena L.V.30 as his *Sub brevissimo compendio Philippi de Vitriaco* and the portion from Chicago 54 as the *Ars perfecta*, both of which he attributed to Vitry. While Reaney, Gilles, and Maillard believed this portion to be a true *Ars Nova* source, albeit a much-shortened compendium, they dated it to the late fifteenth century. However, like the other treatises in this *Ars Nova* complex, the *Omni desideranti notitiam* cannot be definitively credited to him, although in a recent conference paper, Karen Desmond has suggested that perhaps it might be linked to him after all. While it may post-date the other manuscripts here mentioned, it is unlikely that it was newly written in the late fifteenth century, given its discussion of earlier fourteenth-century mensural theory.

Gilbert Reaney, André Gilles, and Jean Maillard, editors, *Philippi de Vitriaco: Ars Nova*, CSM 8 ([U.S.A.]: American Institute of Musicology, 1964), 4.

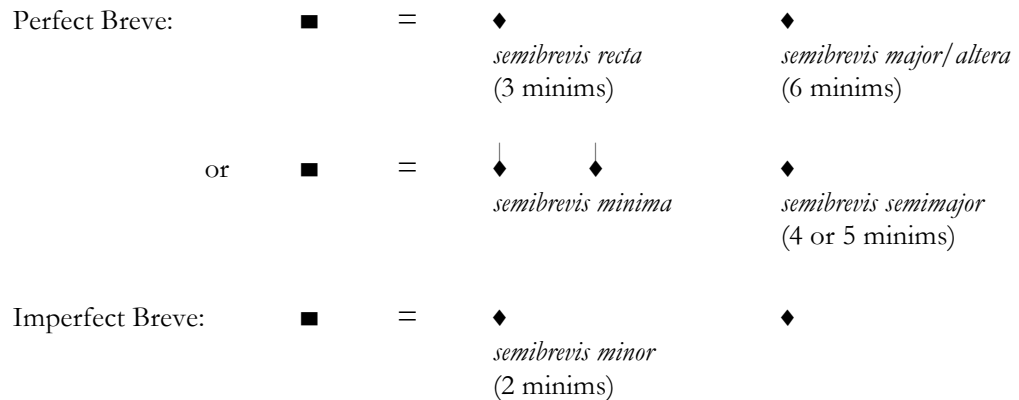
went beyond the confines of both the original rhythmic modes and the supremacy of the long to create the beginnings of a new and particularly French mensural system.

As I showed earlier, the semibreve grew in prominence in both Petrus de Cruce and Petrus le Viser, and a decrease in tempo accompanied this motion toward smaller note values. However, in both of their systems, the semibreve was still a context-dependent value and not yet an independent figure, despite having corresponding rests for both the major and minor semibreve even in Franco's theory. The rules of perfection, imperfection, and alteration applied only to longs and breves, with semibreves acting as a sort of ornamental breve substitute. This changed in the *Ars Nova*: the semibreve was now considered a fully emancipated figure, with the ability to be perfect, imperfect, or altered, and to affect the durations of the longer notes surrounding it.

The extension of the rules of perfection to the semibreve had an unintended side effect – the creation of the minim. Longs were considered perfect (at least in Franconian theory) because they were worth three equal breves, and by the time of Petrus de Cruce breves were considered perfect if they contained three equal semibreves. Semibreves, formerly only major or minor fractions of a breve, were now able to be perfect, imperfect, or altered. Their note shapes were at first contextually determined according to the rules of mensural theory. As I stated, with the movement from ligatures to independent note shapes and currentes to fully-fledged semibreves, certain notational features such as directional stems or the punctus divisionis were introduced to help the reader or scribe of the written music parse out the intended rhythm; these directional stems indicated different lengths of semibreve.

Muris and the Vitry circle described several types of semibreve, all of which were measured according to the shortest semibreve possible: the minim. In the second former *Ars Nova* treatise in Rome 307, *Sex minime possunt poni pro tempore imperfecto*, there were four lengths of semibreve in addition to the minim. The longest, worth six minims, was termed the semibrevis major or *semibrevis altera*. The *semibrevis recta* was worth three. The semibreve worth four or five minims was called the *semibrevis semimajor*, while the semibreve worth only two minims, whether due to imperfect prolation or imperfection by a minim, was termed the *semibrevis minor*.²¹

Figure 4: Semibreve Types in *Sex minime possunt poni pro tempore imperfecto*, Rome 307-II



²¹ “*Sciendum quod secundum diversos istarum semibrevium valores diversa sortiuntur nomina. Unde semibrevis quae sex valet minimas, maior nuncupatur. Semibrevis vero quae quinque vel quatuor, semimajor nuncupatur a semis quod est imperfectus. Illa vero quae tres valet minimas, recta et vera semibrevis vocatur, licet omnia corpora obliqua largo modo loquendo, id est de semibrevibus, semibreves vocantur. Illa vero quae duas valet minimas, minor vocatur, ut dictum est prius; quae vero sola, minima appellatur ...*”

It should be noted that according to their different values, these semibreves receive different names. And so the semibreve which is worth six minims is called maior. However, the semibreve which is worth five or four minims is called semimajor, from semus which is imperfect. However, that which is worth three minims is called the semibrevis recta and true, although all oblique bodies in a broader sense are called semibreves. But that worth two minims is called minor, as has been said before. What is worth one is called minim ... “

The minim was not always visually distinguished; more often than not, minims were contextually determined values. However, the Vitry circle prescribed that if the intended rhythm were not easy to determine based on the normal rules of mensural theory, then the minim could be marked with an upward stem, as shown above in Figure 1.²² The manuscript that is one of the closest contemporaries to the *Ars Nova* portions (and which likely contains works by Vitry himself) is the *Roman de Fauvel*, found in the manuscript Paris 146. The motet *Quare fremuerunt* on folio 1 contains passages that apparently needed clarification; someone has added stems to distinguish the minims from the other semibreves.²³

The role that the minim played in the application of the rules of perfection, imperfection, and alteration prompted several new theoretical constructs in addition to its stemmed grapheme. First was the creation not just of the fixed semibreve rest, but also of

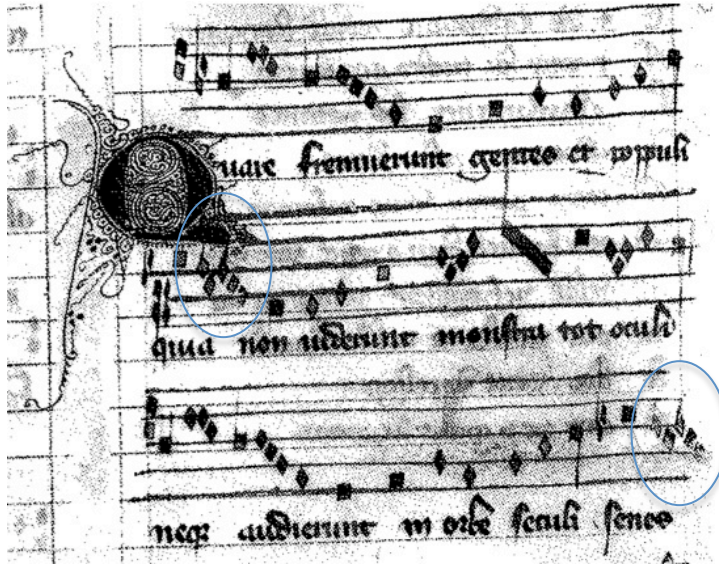
²² One of the situations that might have necessitated the upward stem for clarification was when two minims were placed between two semibreves or breves, thus demanding that the second minim be altered. Another would be when a larger note was imperfected by a minim; it would be necessary to show that it was in fact a smaller duration, not a semibreve.

²³ The editors of the *Roman de Fauvel* point out that descriptions by other modern scholars such as Willi Apel and Ernest Sanders of these minim stems as later attempts at clarification are not necessarily accurate. This one piece that includes ascending minim stems might have been composed specifically for this collection, and it is the only one in the entire manuscript that makes use of groups of five semibreves instead of two to four; therefore it might have needed special clarification even when first being written down, and these stems may in fact be the work of the original scribe. Regardless, the stems are applied in a manner consistent with Vitry's suggestion that stems be used to clarify alternate or unusual rhythms, and also to "indicate a return to the usual pattern."

Also, Daniel Leech-Wilkinson points out that some of the hoquet figures found in non-*Fauvel* motets such as *Flos / Celsa* in the Ivrea manuscript and *Per grama protho paret* in London 41667 can only be notated and realized with a graphically distinct, i.e. stemmed, minim; therefore their initial scribal rendering must have included such figures. While he opines in this article that none of the motets in *Fauvel* originally contained minim stems, he shows that the stemmed minim was likely was in practice before *Fauvel's* compilation.

François Avril, Nancy Freeman Regalado, and Edward H Roesner, *Le Roman De Fauvel in the Edition of Mesire Chaillou De Pesstain: a Reproduction in Facsimile of the Complete Manuscript*, Paris, Bibliothèque Nationale, Fonds Français 146 / [music] (New York: Broude Brothers, 1990), 32-33; Leech-Wilkinson, "The Emergence of ars nova," 309, 315. See also Natasha Coplestone-Crow, "Philippe de Vitry and the Development of the Early Fourteenth-Century Motet" (PhD diss., University of Southampton, 1996).

Figure 5: Roman de Fauvel, *Quare fremuerunt*, fol. 1



Minim stems can be seen on the second staff under the illuminated Q and more faintly at the end of the third staff.

the fixed minim rest. The rules of perfection and imperfection were extended from adjacent note values to non-adjacent note values, so that the long, for example, could be imperfected not only by a breve, but by a semibreve or even a minim. Thus an entirely new variety of potential rhythmic combinations was developed. But in order to be clear about the proper interpretation of rhythms created through the use of notes that were visually similar, the Franconian premise that a long preceding a long was always perfect was extended to all note values, such that if two or more notes of the same shape were notated one after the other, all must be perfect except the last, which was contextual. This later became the rule of "*similis ante similem perfecta*."

Vitry, or rather the author of the treatises in Rome 307, was also credited with the use of red ink to visually distinguish note values. While coloration later commonly signified a shift from perfect to imperfect quality, in these treatises reddened notes shifted the

prevailing mode or tempus to the other possible mode or tempus. Perfect rhythms are rendered imperfect, but also vice-versa. An example from the *Roman de Fauvel*, the motet *Garrit gallus / In nova fert / Neuma* found on folio 44v, is shown in Figure 6 below.²⁴ In the case of semibreves, this imperfection through coloration could only have occurred because of the existence of the minim; without this smaller unit, by which the different lengths of semibreves were measured, the semibreve could neither be perfect nor imperfect and thus could neither be imperfectable nor alterable. There were therefore three different note value relationships at work in *Ars Nova* mensural music: *modus*, between the long and the breve; *tempus*, between the breve and semibreve; and *prolatio* or prolation, between the semibreve and the minim.

Mode and time had been in place before they were explained in the *Ars Nova* treatises, but now mensuration signs were described for them. Mode was shown through a series of horizontal or vertical lines; perfect and imperfect tempus were given respectively as a circle and semicircle, as well as with vertical strokes, as shown in Figure 7.²⁵ Similar signs can be seen as early as in the *Roman de Fauvel*, as in Figure 8. The burgeoning use of prolation appropriated the dots formerly representing tempus in mensuration signs; the four different combinations of perfect and imperfect subdivisions were later called the four prolations and frequently attributed to Vitry.

²⁴ The *Roman de Fauvel* is digitized online through the Bibliothèque Nationale de France here: <http://gallica.bnf.fr/ark:/12148/btv1b8454675g>

²⁵ The Vatican manuscript shows dots instead of horizontal lines for the designation of *modus* along with *tempus*, such that three dots inside a full circle indicate both perfect mode and time, while two dots inside a semicircle would indicate imperfect mode and time.

Leo Plantinga, "Philippe de Vitry's 'Ars Nova': A Translation," *Journal of Music Theory* 5 no. 2 (Winter, 1961): 204-223, 214-217; Reaney, Gilles, and Maillard, *Ars Nova*, 27.

Figure 6: Roman de Fauvel, *Garrit gallus* / *In nova fert* / *Neuma*, fol. 44v



Figure 7: Mensuration Signs in *Sex minime possunt poni*, Rome 307-II, fols. 19v-20

a. Perfect modus:



b. Imperfect modus:



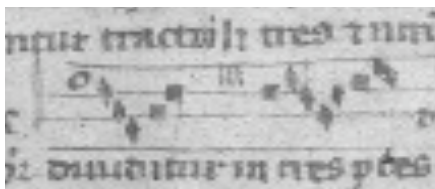
c. Perfect modus, perfect tempus:



d. Imperfect modus, imperfect tempus:



e. Perfect tempus:



f. Imperfect tempus:

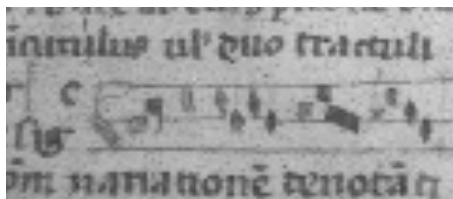
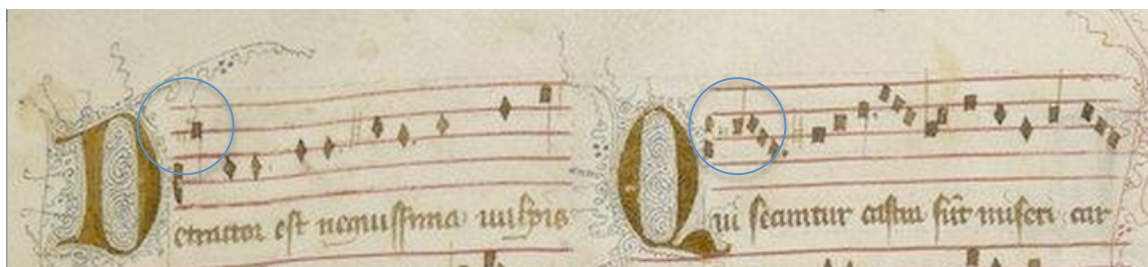


Figure 8: Roman de Fauvel, *Qui secuntur castra*, fol. 4²⁶



²⁶ <http://gallica.bnf.fr/ark:/12148/btv1b8454675g/f19.image>

In sum, the French theorists who followed Franco began to incorporate more semibreves into the duration of a breve and, following the *Ars Nova* treatises, described the systematization of four relationships between the long, breve, semibreve, and the new minim. These relationships, in addition to graphically distinct note shapes and rests, concepts of perfection, imperfection, and alteration, mensuration signs, the ability to delineate perfections through the use of the punctus divisionis, and the use of different colors of ink to override the prevailing mensuration became the foundations for French mensural notation for the next century and beyond.

1.3: Franco in Italy

The interpretation of Franco in Italy took a different trajectory than it did in France. While French mensural theory developed in many ways around the new minim unit and the relationships between long, breve, semibreve, and minim, Italian practices gravitated more toward Petrus de Cruce's flexible division of the breve.

The two theorists largely responsible for the dissemination of the Italian interpretation of Franco throughout Italy were Marchetto of Padua and Guido frater, both of whom flourished in the first third of the fourteenth century. Marchetto wrote several treatises on various aspects of music. His *Lucidarium in arte musice plane* deals with the gamut, counterpoint, intervals, mode, tuning, and other pitch-related issues, and in its own right was extremely influential. In terms of rhythmic issues, though, his *Pomerium in arte musice mensurate* is of greater interest.

Oliver Strunk postulated in 1950, and others later upheld, that *Pomerium* dates to around 1319 and no later; this date is still widely accepted today.²⁷ Franco's *Ars cantus mensurabilis* is undoubtedly the theoretical underpinning for the treatise, which bases its discussions of ligatures, plicated notes, and rhythmic modes on Franco's work. However, like Petrus de Cruce and Petrus le Viser, Marchetto's influence is found in the expansion of the possibilities for subdividing the breve.

Since it predates the formerly conjoined *Ars Nova* treatises, *Pomerium* is thus the earliest work to thoroughly and completely describe how the breve could be either duple or triple.²⁸ In terms of the division of the breve, though, Marchetto surpassed even Petrus de Cruce by describing anywhere from two to twelve semibreves in the place of one breve,

²⁷ *Pomerium* definitely postdates *Lucidarium*, since the latter is cited by the former, but more importantly, Oliver Strunk points out that *Pomerium* is dedicated to King Robert, labeled in the treatise as being involved in a war. Strunk states that the king was involved in no such military action between 1319 and 1324, and therefore it is most likely that the treatise would have been written after the completion of *Lucidarium* around 1317-18, but no later than 1319. Nino Pirrotta upholds this idea in his 1955 article "Marchettus de Padua and the Italian Ars Nova," but further strengthens Strunk's suggestions by stating that the *explicit* provides a *terminus ante quem* for the writing of *Pomerium*. In it, Marchetto states that he wrote the treatise "*in domo Raynaldi de Cintris*," or Cintiis. Pirrotta says that this Raynaldus was active in Cesena between 1318-1327, but that he received the title of *cavaliere* in 1324; since the *explicit* doesn't mention said title, it stands to reason in his opinion that *Pomerium* must date from before his entitlement, and therefore Strunk's proposed date of 1319 fits well with Raynaldus's timeline as well.

Oliver Strunk: 'Intorno a Marchetto da Padova', *Rassegna musicale* 20 (1950): 312-15; Eng. trans., 'On the Date of Marchetto da Padova', in *Essays on Music in the Western World* (New York: W.W. Norton, 1974), 39-43; Nino Pirrotta, "Marchettus de Padua and the Italian Ars Nova," *Musica Disciplina* 9 (1955): 60-63.

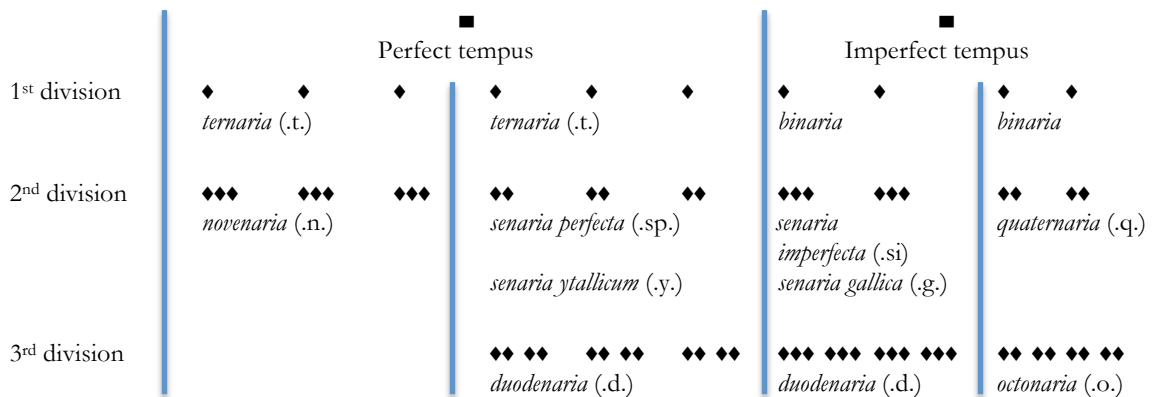
²⁸ Another treatise earlier than *Pomerium* offered a binary breve: *Practica artis musice*, c. 1271, by an English theorist named Amerus living in Italy, discussed binary division of both the long and the breve, such that a long was worth two breves, each of which were worth two semibreves. However, Amerus did not mention ternary relationships between note values, so Marchetto is therefore the first theorist to describe a system in which both binary and ternary subdivisions of note values were possible.

F. Alberto Gallo, "Amerus," *New Grove*
<http://www.oxfordmusiconline.com/subscriber/article/grove/music/00791> (accessed May 6, 2011).

using a *pontellus*, or point of division, to mark off breve units. These semibreves were organized according to different *divisiones*, or levels of subdivisions.

As the following chart demonstrates, Marchetto's breves could be either perfect or imperfect, and each had up to three levels of subdivision. The first division of the perfect breve contained three semibreves maiores. These could be subdivided into either six or nine semibreves minores; the six minor semibreves could be further subdivided to create twelve *semibreves minimae*, or minims. The first division of the imperfect breve, however, contained two major semibreves; these could be subdivided either into six *minimae in primo gradu* or into four minor semibreves, which could also be further subdivided into eight *minimae in secundo gradu*.

Figure 9: Italian *Divisiones*

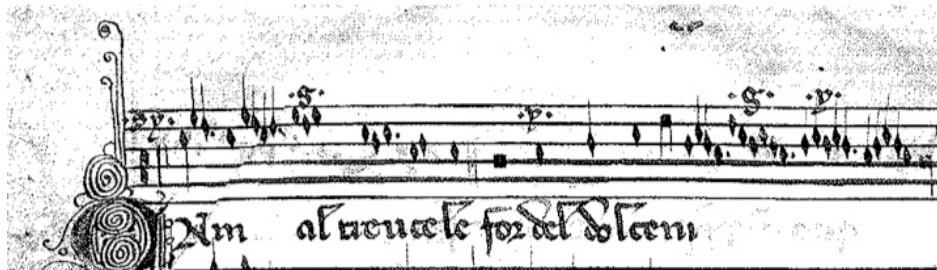


Marchetto's two-fold imperfect division of the breve was at the heart of an interesting description in *Pomerium*. He states that the binary second division of the imperfect breve, which created four minor semibreves, was called the 'Italian way,' whereas the creation of six minims in primo gradu was more reflective of French, or 'Gallic,' practice.

This was not Marchetto's only commentary on the differences between Italian and French practice. Whereas the French were beginning to use the mensuration signs I showed in the prior section, Marchetto states that some composers were using letters to indicate division. Thus .i. and .p. reflected imperfect and perfect modus, .b. and .t. stipulated whether the breve was binary or ternary, and .y. and .g. indicated whether the imperfect breve was subdivided according to the Italian (*ytallicum*) or French (*gallicum*) manner. Examples of these letters can be seen in the Rossi Codex, in which the letters .sg. and .sy., referring to *secundum gallicos* or *senaria gallica* and *secundum ytallicum* or *senaria ytallicum*, are also used, as seen here:²⁹

Figure 10: Rossi Codex, Letters designating Italian Divisiones

a. Rossi Codex, fol. 20v: *Cum altre ucele fuor del dolce nido*, .sy. .g. .y.



²⁹ The Rossi Codex is actually a group of folios taken from a larger fourteenth-century collection; two other folios from the original source were discovered in 1963 in Ostiglia, but for the purposes of clarity, the entirety of the original source will be hereafter referred to as one unit. The manuscript dates to around 1370, according to Nino Pirrotta, but regardless of date, most scholars tend to agree that it is the earliest surviving record of Italian Trecento notation and music. However, it still postdates Marchetto's *Pomerium* by some time, and is not written in strict accordance with the notation prescribed therein. The examples here of letters indicating division are therefore not entirely Marchettan, but merely a visual representation of the practice of using letters for such purposes.

Nino Pirrotta, ed., *Il Codice Rossi 215, Roma, Biblioteca Apostolica Vaticana/Ostiglia, Fondazione Opera Pia don Giuseppe Greggiati: Introductory Study and Facsimile Edition* (Lucca: Libreria Musicale Italiana Editrice), 1992.

b. Rossi Codex, fol. 29v: *Or qua, compagni, qua cum gran piacere*, .sg.



Regardless of the division being utilized in Italian notation, semibreves were generally undifferentiated. Much like French theorists, Marchetto felt that an understanding of mensural theory would allow a reader to determine correct rhythm in strings of semibreves, but in instances where the intended rhythm was either contrary to popular use or ambiguous to decipher, both downward and upward stems on semibreves could be used to signify duration. As in French practice, a downward stem attached to a semibreve lengthened the note, whereas an upward stem signified the minim. In typical Italian rhythm, Marchetto relates in his third chapter, shorter note values always come first; if two semibreves were written in perfect tempus, the first was shorter unless a downward stem was added to lengthen it.³⁰ Similarly, adding upward stems to some of the semibreves enabled the

³⁰ “*Primaria perfecta divisione dividetur aequaliter in tres, quae debent sic aequaliter figurari, eo quod aequaliter se habent ad ipsum totum, et suum totum ad ipsas ... Si autem dividetur solum in duas, ut hic ... tunc per viam naturae ultima, eo quod finis, dicit in se duas partes temporis, et prima unam. Ab arte vero possemus instituere quod prima dicit duas partes temporis, et ultima unam. Et quia hoc est per accidens, ideo oportet quod tali primae accidens adiungatur, et hoc est cauda, ut hic ... non quod cauda faciat ipsam habere duas partes temporis, quia hoc possemus concipere etiam sine cauda, sed innuit quod voluntatis mensurantis ipsam brevem per tales duas semibreves est quod prima contineat duas partes temporis.*”

The primary perfect division is divided equally in three, which should be equal in figure in this way, because they refer equally to the whole itself, and its whole to them ... If however it shall be divided only into two, as here ... then the last is, by the way of nature (*via naturae*), because it is the end, said to be worth two parts of the tempus, and the first, one [part of tempus]. From art (*via arte*), however, we could institute that the first is said to be two parts of tempus, and the last one [part of tempus]. And because this is by accident,

shorter note values to be moved to different places in the tempus. Their value, unlike that of the flexible semibreve, was fixed, regardless of the division in which they might be found.³¹

This Italianate rhythmic style is the opposite of French practice, in which strings of undifferentiated semibreves were grouped off into trochaic pairs with the longer note first (unless, as demonstrated earlier, the second note in a pair required alteration). The addition of a stem on a semibreve could either lengthen or diminish its value, visually overcoming the rhythm that would naturally be assumed in French or Italian practice.

Guido frater followed in Marchetto's footsteps; his treatise, *Ars musica mensurate*, contains six chapters on notation that largely depend on Marchetto's *Pomerium*. For that reason, Gallo and Bückner dated *Ars musica mensurate* to between 1326 and 1330, though Strunk's dating of *Pomerium* allows Guido's treatise to have been written as early as 1319.³²

therefore it is necessary that such an accident be attached to the first, and that is the stem, as here ... not because the stem itself is made to have two parts of tempus, because we were able to understand these also without the stem, but it signifies that of the desire to measure these breves by two such semibreves it is that the first contains two parts of tempus."

Giuseppe Vecchi, ed., *Marchetti de Padua: Pomerium*, CSM 6 ([USA]: American Institute of Musicology, 1961), 105-106.

³¹ "*Volumus enim quod, quomodocunque praedictae quattuor minimae sumantur in modo Italico, sive ponantur a parte principii, sive a parte finis, eisdem semper addatur cauda in sursum ...*"

For we wish, in whatever manner these previously mentioned four minims are selected in the Italian manner, whether they are placed at the beginning or at the end, the same stem above [the note] is always added ..."

http://www.chmtl.indiana.edu/tml/14th/MARPOME_TEXT.html

³² See F. Alberto Gallo and Andreas Bückner, "Guido frater," *New Grove*, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/11966> (accessed March 3, 2012); Strunk, "Intorno a Marchetto da Padova."

Nothing is known about Guido's biography, though, aside from that the title 'frater' implies membership in some religious order.

Like Marchetto, Guido discusses both perfect and imperfect tempus and the division of breves into as many as twelve semibreves; he also compares French mensural theory with the Italian music of his time. Of note in that regard are the variances between his descriptions of the Italian divisions and those in *Pomerium*. Guido's perfect and imperfect breves subdivide in exactly the same fashion, but the terminology he uses for the smaller note values differs from Marchetto's; for instance, when an imperfect breve is subdivided into either six or eight minims, Guido makes no distinction between primo and secundo gradu, as Marchetto does. However, he agrees with Marchetto in labeling the division into six minims as French and that into eight as Italian. If a perfect breve is subdivided into three major semibreves, and then again into nine smaller units, he refers to them as minims instead of Marchetto's minor semibreves. Importantly, Guido states that this is also a typically French way of dividing the breve.

It is clear that both Marchetto and Guido were familiar with the musical practice and notation of both Italian and French traditions. In fact, Marchetto even states in chapter five of *Pomerium* that French mensural theory is inherently more logical than the Italian system, since the French routinely lengthen the first of a group of notes, while the Italians reserve the longer note for the end.³³ It is important to note, though, that they were both attempting

³³ "*Sciendum est autem quod inter Italicos et Gallicos est magna differentia in modo proportionandi notas semibreves in modo cantandi de tempore imperfecto. Nam Italici semper attribuunt perfectionem a parte finis, sicut fit proportionando eas ad invicem in modo cantandi de tempore perfecto; Gallici vero attribuunt perfectionem a parte principii. Unde Italici dicunt quod nota finalis plus continet perfectionis, eo quod finis; sed Gallici oppositum dicunt, scilicet quod hoc sit verum de tempore perfecto; de tempore autem imperfecto dicunt ipsi: Finalis semper est imperfectior, eo quod finis.*"

to describe contemporary practices, not prescribing rules to be followed. By the time that Marchetto and Guido wrote their treatises, they were able to describe both French and Italian theories of smaller subdivisions of the breve and their visually distinct graphemes.

I.4: Franco in England

Due to its physical disconnect from the continent, England has often had its own unique musical traditions and theories. By the beginning of the fourteenth century, insular

Quaeritur ergo qui rationabilius cantent.

Et respondemus quod Gallici. Cuius ratio est, quod sicut in re perfecta ultimum complementum et perfectio ipsius dicitur esse a parte finis (perfectum enim est cui nihil deest, non solum a parte [-173-] principii, sed etiam a parte finis), ita in re imperfecta, imperfectio et defectus ipsius sumitur a parte finis. Res enim ex hoc dicitur imperfecta ex eo quod a parte finis aliquid deest sibi. Si igitur cantare velimus, seu proportionare voces in modo cantandi de tempore imperfecto, ita debemus rationabiliter imperfectionem semper attribuere notae finali, sicut ei attribuimus perfectionem in modo cantandi de tempore perfecto. Et ex hoc concluditur quod Gallici et melius cantent et rationabilius in tali modo cantandi quam Italici.

It should be known, however, that between the Italians and the French is a great difference in the way they proportion their semibreve notes in the manner of singing in imperfect tempus. For the Italians always attribute perfection to the last part, as to become proportional to one another in the way of singing in perfect tempus; the French, though, attribute perfection to the first part. From which the Italians say that the final note can contain more than a perfection, because it is last; but the French say the opposite, namely that this is true in perfect tempus, but in imperfect tempus they say this: the final is always imperfect, because it is last.

So the question is, who is more rational when they sing?

And we answer that the French [are]. The reason for this is that because as in a perfect thing, the last completion and perfection of itself is said to be the final part (perfect for instance is that which lacks nothing, not only from its first part, but also from its last part), so in an imperfect thing, imperfection and defect of itself is taken from its final part. For instance the thing by reason of this is called imperfect from that which from the final part something is lacking of itself. If therefore we wish to sing, or to proportion voices in the way of singing in imperfect tempus, therefore we must rationally attribute imperfection always to the final note, as to it we attribute perfection in the way of singing in perfect tempus. And from this we conclude that the French are better in singing and more rational in such modes of singing than the Italian.”

musical notation had developed to suit the needs of particularly English stylistic demands, therefore varying in certain ways from continental practices.³⁴

Some of these differences were purely graphical, while others were both graphical and rhythmic. For example, earlier in the thirteenth century it was commonplace to use a rhomb figure (very similar to the shape of the later semibreve) to represent a breve, a notational style Peter Lefferts refers to as “English mensural notation,” or EMN.³⁵ This is readily visible in many pieces in the thirteenth-century Worcester fragments.³⁶

Other visual features of EMN include special graphemes for breves and semibreves. Since in EMN the shape of the breve was the same as that of the later semibreve, stems were added in a variety of ways to strings of rhombs, or *coniuncturae*, to distinguish which were the shorter and longer values. Thus, if a rhomb had a stem descending laterally from its top left side, it was a semibreve, and if this shape was first in a *coniunctura*, the second rhomb was also a semibreve. A rhomb with an ascending stem drawn from its lower right side, in comparison, was occasionally used to denote a full ternary breve when used in conjunction with other semibreve shapes. This can be seen in the motet *Quam, quam admirabilis et*

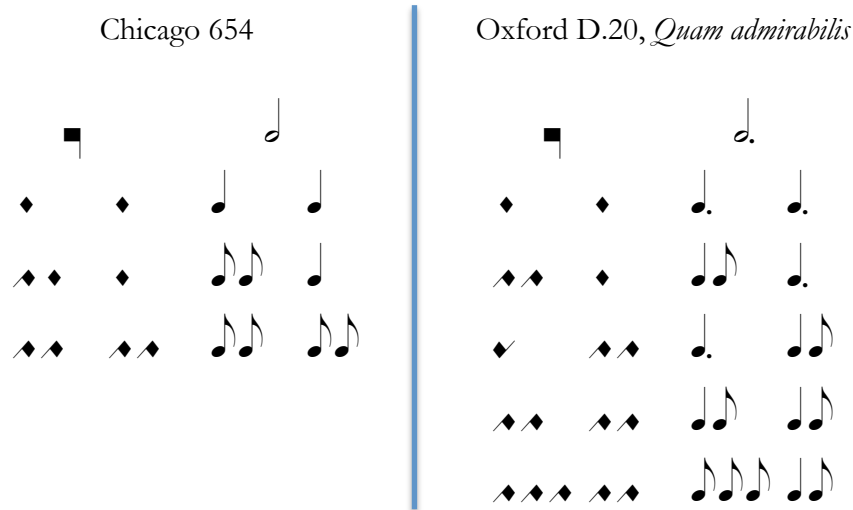
³⁴ Peter M. Lefferts, *The Motet in England in the Fourteenth Century* (Ann Arbor, MI: UMI Research Press, 1986), 94.

³⁵ Lefferts, *The Motet in England* 1986, 104.

³⁶ For an example, please refer to the manuscript Oxford D.20, folio 1, for the motet *Dulciflua tua memoria / [P]recipua michi da gaudia* (scanned images available on DIAMM, located here: <http://www.diamm.ac.uk/jsp/Descriptions?op=ITEM&itemKey=2208>)

Please note that one will have to log in in order to view the images, but that accounts are free and simple to obtain.

Figure 11: EMN Semibreve Shapes, as seen in the Manuscripts Chicago 654 (left) and the Worcester Fragments, Oxford D. 20, fols. 9v-10³⁷



venerabilis / *Quam, quam admirabilis et venerabilis*, also from the Worcester Fragments.³⁸

Another graphic distinction with rhythmic consequences is the English treatment of ligatures. While for the most part ligatures operated as they did on the continent, several differences are notable. First, while in Franconian practice a ligature *cum opposita proprietate* (hereafter c.o.p.) consisting of three notes would be read as a pair of semibreves plus a breve (or other longer note value), a ternary c.o.p. ligature in England could be read as three equal breves. Similarly, an English ternary ligature with both propriety and perfection would be

³⁷ Figure 11 is based on a chart found in Lefferts, *The Motet in England* 1986, 210.

³⁸ Oxford D. 20, folios 9v-10; DIAMM
<http://www.diamm.ac.uk/jsp/Descriptions?op=ITEM&itemKey=2180>

read as two breves followed by a long; the same ligature would be read as long-breve-long according to Franconian principles.³⁹

One last rhythmic difference between English and continental notation is discerned in the treatment of undifferentiated note values. Pairs of undifferentiated semibreves are always read as iambic, or short-long, in Franconian notation, but in England it was possible for the same pair of notes to be read as trochaic, or long-short, in certain contexts.⁴⁰

It is a bit unfair to make a comparison between these peculiarities of early thirteenth-century English notation and later Franconian precepts. However, it is clear from the writings of later English theorists that even after Franco's theories were introduced, England retained elements of its own individual notational style. Two theorists are of particular importance to this discussion: Walter of Evesham, formerly known as Walter Odington, and Robertus de Handlo.

Little is known about either Walter or Robertus, despite the attempts of previous generations of scholars to link one or the other with various historical figures. Recent scholarship by Elina Hamilton has shown that there are no less than four different Walters connected with the town of Odington (Oddington) in the late thirteenth and fourteenth centuries. Willemus's *Breviarum* (a mid-fourteenth century treatise found in the manuscript Oxford 842) is the earliest musical reference to Walter as "Odington" or "Odingtonus," an

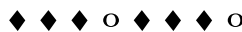
³⁹ Lefferts, *The Motet in England* 1986, 110.

⁴⁰ See Lefferts, *The Motet in England* 1986; also Margaret Bent, "A Preliminary Assessment of the Independence of English Trecento Notations", in *L'Ars Nova italiana del Trecento, in: atti del 3o Congresso internazionale sul tema "La musica al tempo del Boccaccio e i suoi rapporti con la letteratura" (Siena and Certaldo 1975)* (Certaldo: Centro di studi sull'ars nova Italiana del Trecento, 1978), 65–82; Sanders, "Duple Rhythm and the Alternate Third Mode in the 13th Century," 249–91; Roger Wibberley, "English Polyphonic Music of the Late Thirteenth and Early Fourteenth Centuries: a Reconstruction, Transcription and Commentary" (PhD diss., University of Oxford, 1976).

appellation later taken up by Burney and Hawkins and more or less standardized by Coussemaker. However, the author of the musical treatise *Summa de speculatione musice* was connected to Evesham Abbey, while the person more commonly referenced in the fourteenth century as Walter Odington was a monk and scholar of alchemy and astronomy who was based in Eynsham Abbey. Hamilton notes that most of the other references to the author of this musical treatise in the fourteenth century call him Walter of Evesham.⁴¹

In the *Summa*, the most thorough extant English treatment of late Ars Antiqua music theory, Walter discusses new developments along the lines of medieval writers such as Boethius and Isidore of Seville. In the sixth chapter, he describes ligatures, the rhythmic modes, and the concepts of perfection and alteration alongside individual note shapes: the duplex long, long, breve, and semibreve, the last of which is divisible into three minims or *minutae*. In his schema, the longs are ternary, while the breve might be either binary or ternary; breve units were marked off by a small stroke through a staff line. Unique to English notation here is the *parvulo circulo*, shown below in Figure 12; it is a small void circle also meant to mark off divisions of breves in instances when there are more than four semibreves per breve or in cases when the ordinary mode-division stroke may be confused for a rest.⁴²

Figure 12: Walter of Evesham, *parvulo circulo*



⁴¹ Elina G. Hamilton, “Walter, Monk and Musician of Evesham Abbey: Re-examining the Biographical Sources for Walter Odington,” unpublished article. I wish to thank Ms. Hamilton for sharing this article with me prior to its publication.

⁴² Lefferts, *The Motet in England* 1986, 151.

His later compatriot, Robertus de Handlo, picked up where Walter left off. He unfortunately left us next to nothing in terms of biographical detail, although it is possible he belonged to a family of the same name who lived in Kent during the thirteenth and fourteenth centuries.⁴³ On the other hand, he was quite specific about the dating of his treatise, the *Regule cum maximis magistri Franconis cum additionibus aliorum musicorum*, which was completed on the Friday before Pentecost in the year 1326. Like Walter, Handlo made mention of unique English notational habits, but his treatise borrowed not only from Walter but also Petrus de Cruce, Petrus le Viser, Johannes de Garlandia, Copais, Jacobus de Navernia, Admetus de Aureliana, and most importantly, Franco of Cologne.⁴⁴

Handlo's treatise is organized largely according to Franco's, in that he has paraphrased the *Ars cantus mensurabilis* and divided it into thirteen rubrics, each of which is comprised of theoretical rules and commentary upon them. These rubrics deal with many Franconian and Petronian precepts, such as ligatures, rhythmic modes, note shapes and rests, and so forth, but they are more than just a simple compilation of other theoretical works. Handlo annotates the others' statements with his own observations about contemporary music, thus offering not only an enticing glimpse into early fourteenth-century English theory but also a look at the works of theorists who otherwise are unknown, like Garlandia the younger, Jacobus de Navernia, Admetus, and Copais.

⁴³ Peter M. Lefferts, "Robert de Handlo," *New Grove*, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/23565> (accessed May 12, 2011).

⁴⁴ The Johannes de Garlandia referenced in Handlo's treatise is not the same as the Johannes de Garlandia previously mentioned in this chapter; this one, occasionally called 'the younger' by modern scholars, was most likely active around 1300.

Lefferts, *Robertus de Handlo / Johannes Hanboys*, 24ff.

Handlo begins with a discussion of single note shapes, starting with the types of longs. He describes the perfect long, worth three tempora, and the imperfect long, here called a *semilonga*, worth two; he continues with the plicated long, the duplex long, worth six tempora, and eventually introduces the extended longs, ones worth more than the value of a duplex long. Here he states that such notes ought to be written in such a way that it is clear how many perfections they contain. By making them void, one could insert lines into the grapheme to specify the number of perfections it has.

Figure 13: Robertus de Handlo, Extended *longae*



He also describes the different kinds of breves, namely the *recta* and *altera* forms known already from Franco. Two unique forms are introduced in this first section: the *longa* and *brevis erecta*. The stem on the long ascends from the right side, and an ascending stem on the left side is added to the breve, but the stems denote a change in pitch, not rhythm: these two notes would be raised by a semitone.

Figure 14: Handlo, *longa erecta*, *brevis erecta*



In terms of the subdivision of the breve, Handlo is particularly thorough, describing multiple systems of doing so. He reports that it was Petrus le Viser who had allowed for four equal or five unequal semibreves to take the place of a single breve, but that Petrus de Cruce had allowed up to seven in some fashion, and his Johannes de Garlandia expanded that to up to nine semibreves. The major semibreve was worth two thirds of a breve, while the minor semibreve was worth one third and could itself be divided into three smaller semibreves. Handlo states that this younger Garlandia called for these smallest notes to be renamed; that which had the value of one ninth of a breve was called the *semibrevis minima*, while that worth two ninths was called the *semibrevis minorata*. These two were not independent values, but were only found in groups of three minims or in pairs in which the minim preceded the minorata.

Since all of the types of semibreves were identical in shape, these smaller note values were set apart from others by the *signum rotundum*, what Walter had called the *parvulo circulo*. However, according to Handlo, Admetus specified that instead of the *signum rotundum*, the smaller notes could be distinguished through the use of ‘signs’ or stems, the minim having an ascending stem and the minorata an oblique stem descending from the top left side of the rhomb.

Figure 15: Handlo, Stemmed *minoratae* and *minimae*



Pairs or groups of major and minor semibreves could also be distinguished graphically, the longer major semibreve having a downward stem according to Johannes de Garlandia. Handlo says that in general the Franconian rules about duration apply, in that

where two semibreves are found paired, the second is twice as long as the first; using Garlandia's downward stem allowed the major semibreve to precede the minor or to add a greater variety of rhythms to strings of semibreves.

Handlo stood alone, however, in allowing oblique figures and *coniuncturae* or *currentes* to count as individual, specific note shapes with the same level of importance as other individual and ligated figures. Oblique figures are those notes generally thought to comprise all or part of a ligature but consist only of one elongated rhomb, not of separate squares or lozenges. As Handlo states, a ligature by definition joins two figures together, and since an oblique rhomb is only one solid figure, it must therefore be its own unit.⁴⁵ The same rules for perfection and propriety applied to oblique figures as they did to other types of ligatures, and they could still be joined with other note shapes to form longer ligatures, but it is novel here that Handlo separates them out in such a fashion. The same can be said for the conjunction of semibreves, whether by themselves or by appending them to a breve, long, or other separate figure. The resultant collection of notes is meant to be melismatic, taking place only over a single syllable. Despite the multifarious ways in which a *coniunctura* could be constructed, the result is here described as being in its own individual category.

⁴⁵ “*Idem: Nulla nuda obliquitas per se ligatura dici debet. Et est ratio, quia oblique breves dummodo in sola obliquitate manent, vel semibreves non sunt nisi in uno corpore. Inconueniens igitur est dicere eas ligari, cum ligatura duo corpora ad minus requirat. Maneat ergo obliquitas nuda per se simplex in qua breues et semibreues obliquantur, et non ligantur.*”

The same: No plain oblique figure in itself ought to be said to be a ligature. And the reason is because oblique breues remain alwas in a solitary oblique figure, and there cannot be semibreves except in one body. Therefore, it is improper to say they are ligated, since a ligature requires at least two bodies. A plain oblique figure, therefore, in which breues and semibreues are joined obliquely and not ligated, remains simplex in itself.”

An excellent example of the varied types of English musical notation in play in the fourteenth century is found in the manuscript London 12185.⁴⁶ The musical folios form a cover for a later fifteenth-century account book, but most of the music has been preserved. Five texted works, including a much later one by Binchois, and one portion of an untexted work remain. The earlier pieces demonstrate not only typical Franconian/Petronian notational styles, but also some of the unique English characteristics discussed by Handlo and, to a lesser extent, Walter of Evesham. Dots of division between semibreves are readily seen on all folios, but the signum rotundum is clearly visible on folios 1v and 2. Stemmed semibreves also occur; the elongated major semibreve with the downward stem is seen on folio 1v, while minims are used on folio 2 along with the obliquely stemmed semibreve.

1.5: Conclusions

The Franconian-Petronian theoretical complex spread quickly throughout Europe, in particular to France, Italy, and England; upon its arrival in each place, it splintered into more localized theories that met the needs of the pre-existing musical and notational styles already present there.

In France, the biggest adapters of Franconian theory were the Vitryan complex of authors and Johannes de Muris. They added a duple division of the breve to Franco's triple division and incorporated the minim as the shortest possible semibreve duration. They also kept Franco's idea of fixed rests and a marker of breve groups, here a dot of division, but

⁴⁶ DIAMM:
<http://www.diamm.ac.uk/jsp/FacetManager?op=1&FacetType=SOURCEFACET&sourceKey=473>

extended the systems of perfection, imperfection and alteration, as well as the rule eventually known as *similis ante similem perfecta*, to breves, semibreves and minims. The minim became the central building block of French mensural theory, and the four French prolations developed from the relationships between it, the semibreve, and the breve.

Marchetto of Padua and Guido frater, basing their ideas on Franco and on knowledge of both contemporary Italian and French practice, painted a picture of early Italian mensural theory. Flexible, contextual rests were the rule here, in a break from Franconian precepts. Like the French, the stemmed minim became a fixed part of notation, but in Italy the breve was the central unit of measurement and the divisiones that described the possible subdivisions of the breve pointed to contrasting Italian and French rhythmic practices.

In England, Franconian theories were dispersed by Robertus de Handlo and his contemporaries. As in Italy, certain elements of common practice were retained; special note shapes remained in use, at least temporarily, and the subdivision of the breve in England led to a maximum of nine minimae, which then needed differentiation either through the use of stems or the signum rotundum.

I believe it important to document each of these regional manipulations of Franconian theory because they make visible both general and local trends. Regardless of the unique ways in which Franconian theory was adopted and adapted in each theoretical center, there was a subsequent push toward the use of smaller note values. The semibreve detached from the breve and developed different durations; the smallest of these was the semibrevis minima, which shortly thereafter became an independent note value. New mensural

hierarchies thus developed in each location in order to organize the relationships between the now autonomous principal note values.

The use of smaller note values and the emancipation of individual durations from the rhythmic modes necessitated the codification of visually distinct graphemes. The long and the breve had already had their own written forms, but the different lengths of semibreve, including the minim, were distinguished from each other through the addition of directional stems. In situations where notational systems were being merged or adapted, local practice often suggested a form that fulfilled a need not met by another set of theories, hence the signum rotundum or oblique-stemmed semibreve in England, or Handlo's insistence upon the equal stature of oblique figures and coniuncturae. The early fourteenth-century desire to codify specific, individual durations and their graphic representation is therefore a continuation of the quest, begun fifty years earlier with Johannes, Lambertus, and Franco, to reduce ambiguity and increase precision in the mensural system.

By the second quarter of the fourteenth century, the minim had become an established duration within the mensural systems in France, Italy, and England, but the same cannot be said for the new, smaller note values beginning to be debated. The earliest theoretical descriptions of the semiminim are vague at best and at worst disparaging. The terms, durations, and graphemes prescribed for note values smaller than a minim are by no means consistent. But the movement toward smaller note values, specific graphemes, and greater precision in duration and terminology elucidated in this chapter created the theoretical possibility for the invention and use of even smaller durations. My purpose in the remainder of this dissertation is to explore the theoretical and philosophical bases upon

which myriad approaches to the semiminim unfolded from the early fourteenth through the mid-fifteenth century.


CHAPTER II

The Semiminim: Issues of Terminology

“And so he learned to speak. With words designating non-smelling objects, with abstract ideas and the like, especially those of an ethical or moral nature, he had the greatest difficulty . . . why should smoke possess only the name ‘smoke,’ when from minute to minute, second to second, the amalgam of hundreds of odors mixed iridescently into ever new and changing unities as the smoke rose from the fire . . . or why should earth, landscape, air – each filled at every step and every breath with yet another odor and thus animated with another identity – still be designated by just those three coarse words.”

✎ Patrick Süskind, *Perfume: The Story of a Murderer*¹

Certain portions of the treatise *Pomerium* by Marchetto of Padua may contain some of the first references to the theoretical possibility of a note value that was smaller in duration than the minim. But is this note value ‘a semiminim?’ What does that term mean? Is our modern conception of a semiminim applicable to Marchetto’s discussion?

In most modern manuals of mensural notation, the semiminim is generally defined as follows: it is a note value worth half of a minim, it is a discrete, independent note value able to participate actively in rhythmic notation, it generally is written in black notation as  and it is always called a semiminim. Marchetto does not name his smaller note value, describe its rhythm, or depict it visually. Yet some modern scholars have referred to these

¹ Patrick Süskind, *Perfume: The Story of a Murderer*. Translated by John E. Woods. New York City: Vintage Books, 1986.

Marchettan note values as semiminims.² Perhaps such a reference would be accurate if the conception of the semiminim had been more or less codified at the time and could be shown to have been associated with Marchetto's discussion. But such was not the case.

In this chapter, I conduct a thorough exploration of all extant fourteenth-century theoretical treatises that discuss note values smaller than a minim in order to clarify the various terms that were applied to them. My research demonstrates that not only is our contemporary definition for a 'semiminim' not at all codified at this or any point in the fourteenth century, but the term itself is not the only one in use. The myriad terms for what we think of as a semiminim, and the multiple definitions that existed for the word 'semiminim,' show that for these theorists the new note value was in many ways a conundrum.

II.1: The Earliest References in Italy

Marchetto first mentions these unnamed small note values in a section on Italian mensural practice.

"But the principal parts of imperfect tempus, which are two, are each divided into three, and thus constitute six notes. And these six notes then can be divided into

² For example, Cecily Sweeney and André Gilles state that these small note values would be equivalent to twelve semiminims in French practice. However, Marchetto does not use that term. Sweeney is connecting Marchetto's smaller unnamed note values to a remark by the author of one of the *Ars Nova* treatises, who states that no more than six units can be used in imperfect tempus unless they are semiminims. While Marchetto was familiar with French theory, he does not refer to these smaller durations as semiminims, but as a smaller type of semibreve. Sweeney's and Gilles's use of the term semiminim in this context is meant to imply the typical rhythmic duration associated with that term as mentioned above, but again, Marchetto is unclear as to what kind of rhythm is actually created by these small note values; this topic will be discussed further in Chapter III.

Cecily Sweeney, *De Musica mensurabili*, André Gilles and Cecily Sweeney, *De semibrevis caudatis*, CSM 13 ([Dallas?]: American Institute of Musicology, 1971), 17.

two, and thus we shall have twelve. And they can be divided in three, and thus we shall have eighteen; which in the manner of their figures and proportions, and briefly in all circumstances, similarly they are related in name, as those of perfect tempus were stated above ...”³

The smallest note values he mentions are not graphically depicted; although they appear to have either a binary or a ternary relationship with the next larger note value, neither duration is given a name. Instead, the implication is that they are all types of semibreve, in accordance with typical Italian theoretical parlance.

The second description is from a section in which Marchetto compares Italian and French mensural theories. He states that they differ on how to interpret the rhythm of various numbers of semibreves per imperfect breve.

“But if anyone in the manner of the French wishes to place more than six semibreves in the place of one imperfect tempus, the third division of its tempus will happen next, which is twelve of these in the place of six, then some of them indeed ought to have upward stems ...”⁴

No more than six equal semibreves are used in the time of an imperfect breve; however, in French practice, up to twelve smaller note values, graphically distinguished with an ascending stem, could be used instead. Elsewhere, Marchetto refers to the minims in primo gradu as

³ *“Partes autem principales temporis imperfecti, quae sunt duae, dividuntur in tres pro qualibet, et sic constituunt sex notas. Et istae sex notae etiam possunt dividi in duas, et sic habebimus duodecim. Et possunt dividi in tres, et sic habebimus octodecim; quae in modo figurandi et proportionandi, et breviter in omnibus accidentibus, similiter se habent et in nominibus, sicut illae de tempore perfecto superius declarato ...”*

The text as printed on TML contains a misprint; instead of ‘octodecim’ the text reads ‘duodecim’ again. The text in the critical edition by Vecchi is correct.

http://www.chmtl.indiana.edu/tml/14th/MARPOME_TEXT.html; Vecchi, *Pomerium*, 178.

⁴ *“Si autem aliquis in modo Gallico plures quam sex semibreves pro tempore imperfecto constituere voluerit, mox incidet in eorum tertiam divisionem ipsius temporis, qua est ipsarum sex in duodecim, quarum quidem aliquae caudari debent in sursum, ut hic.”*

http://www.chmtl.indiana.edu/tml/14th/MARPOME_TEXT.html; Vecchi, *Pomerium*, 178.

the six smaller units created in the third division of the breve, but here these twelve apparently even smaller note values are given no name at all; it is possible they are once again thought of as another type of semibreve.⁵

Marchetto's tonal theory, not his rhythmic or notational theory, is what earns him the most contemporary scholarly study, though *Pomerium* is given pride of place as the progenitor of fourteenth-century Italian mensural theory.⁶ The treatise is referenced as the first to detail both duple and triple divisions of the breve and is cited for its descriptions of both contemporary Italian and French rhythmic and notational practices.⁷ Yet as several scholars note, his ideas about mensural organization are less specific than what the contemporary manuscript evidence requires, and later treatises such as *Rubrice Breves* are needed to supplement our understanding of fourteenth-century theory.⁸ Jan Herlinger speculates that because *Pomerium* reflects an earlier stage of notation unable to account for

⁵ Refer to Figure 9 in Chapter I for clarification of Marchettan divisions.

⁶ Jan Herlinger, "Marchetto's Influence: The Manuscript Evidence," in *Music Theory and Its Sources: Antiquity and the Middle Ages*, ed. André Barbera (Notre Dame, IN: University of Notre Dame Press, 1990), 235-58.

⁷ Jan Herlinger, "Marchetto da Padova," *New Grove*, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/17738> (accessed February 27, 2012); Herlinger, "Marchetto the Pythagorean," in *L'Arts Nova Italiana Del Trecento VI: Atti Del Congresso Internazionale "L'Europa e La Musica Del Trecento", Certaldo, Palazzo Pretorio, 19-20-21 Luglio 1984: Sotto Il Patrocinio Di Comune Di Certaldo ...* edited by Giulio Cattin and Patrizia Dalla Vecchia, 369-86 (Certaldo: Edizioni Polis, 1992); Oliver Huck, "'Modus cantandi' und Prolatio. 'Aere ytalico' und 'aere gallico' im Codex Rossi 215," *Die Musikforschung* 54 (2001): 115-130.

⁸ For one example, see Tiziana Sucato's description of the different divisiones used in the Rossi Codex and their relationship to Marchetto, *Rubrice Breves*, and the anonymous *De diversis manieribus*. See also Anna Maria Busse Berger, "The Relationship of Perfect and Imperfect Time in Italian Theory of the Renaissance," *Early Music History* 5 (January 1, 1985), 25. She cites Michael Long's and Nino Pirrotta's observations of the disconnect between the *Pomerium* and its contemporary notational practice.

Michael Long, "Musical Tastes in Fourteenth-century Italy: Notational Styles, Scholarly Traditions, and Historical Circumstances" (PhD diss., Princeton University, 1981); Nino Pirrotta, 'Introduction', *The Music of Fourteenth Century Italy*, ed. Nino Pirrotta, CMM 8 (Amsterdam: American Institute of Musicology, 1954); Tiziana Sucato, *Il Codice Rossiano 215: madrigali, ballate, una caccia, un rotondello* (Pisa: Edizioni ETS, 2003).

the more fascinating proportional notation to come later in the century, it has received less scholarly attention than it deserves.⁹ A lack of critical attention to the two above-mentioned passages may therefore be due to their vagueness and imprecision. It certainly cannot be claimed that they demonstrate the existence of the ‘semiminim,’ a term that Marchetto did not use and which carries, as I will show, a great deal of historical and contextual baggage. But these passages do show Marchetto searching for ways to describe, using existing theoretical concepts and language, something that was occurring outside those boundaries.

The anonymous *Rubrice breves*, a gloss on *Pomerium*, describes a similar situation in which more than the maximum allotted number of note values are placed per tempus.¹⁰ While discussing the different types of perfect and imperfect tempus, the author makes this vague statement: “In correct perfect time are placed twelve [notes] written for each tempus, which are called minimae. But if this is sung slower, so that more than twelve [notes] are used, it will be called ‘more-than-perfect’ [*plusquamperfectam*] time.”¹¹ Like Marchetto, this author mentions smaller note values, yet again they remain unnamed and devoid of specific

⁹ Herlinger, “Marchetto’s Influence,” 238.

¹⁰ The anonymous *Rubrice Breves* is not securely datable, but the descriptions of the Italian divisiones combined with the obvious reliance on Marchetto (the explicits of the Pisa and Rome treatises mention Marchetto by name) apparently date this treatise to shortly after Marchetto’s own, an opinion put forth by Nino Pirrotta.

Strunk, ‘Intorno a Marchetto da Padova,’ Pirrotta, “Marchettus de Padua and the Italian Ars Nova,” 63 fn.18.

¹¹ “*Tempus perfectum recte in quo ponitur, duodecim scribitur pro tempore, quae vocantur minimae, si autem rarius cantatur, sique plures quam duodecim ponerentur, diceretur plusquamperfectam.*”

http://www.chmtl.indiana.edu/tml/14th/ANORUB_TEXT.html; partial trans. Marco Gozzi, “New Light on Italian Trecento Notation,” *Recercare* 13 (2001): 16. Gozzi points out that examples of ‘plusquamperfectam’ time can be found in some of the works of Jacopo da Bologna in the Squarcialupi Codex, while regular duodenaria can be found in other pieces by Jacopo as well as works by Giovanni da Cascia, Magister Piero, and Gherardello da Firenze.

duration or written form. Important to note here is that the author is describing the type of *tempus* created by such an unusual subdivision, not the smaller note values that are thereby created. As opposed to Marchetto's descriptions of breves being divided into twelve or eighteen smaller units, this author does not specify how many more notes are being placed in *plusquamperfectam tempus*, nor does he clarify their names, their rhythmic durations, or their relationship to any other note values. However, he might be implying that his *minimae* were being subdivided into smaller note values. Therefore, Marchetto and his anonymous glosser are two of the earliest witnesses we have to small note values that would eventually become known as *semiminims*.

II.2: The Earliest References in France

Treatises written shortly after Marchetto's *Pomerium* and the anonymous *Rubrice breves* take their discussions one step further than their Italian contemporaries, in that they provide names and more specific descriptions for these new note values. But these descriptions of the *semiminim* already demonstrate a tension caused not just by the presence of this new unit but also by its very name.

The credit for inventing the *semiminim* has upon occasion been given to famed composer Philippe de Vitry because of remarks made in the treatise known as *Ars Nova*. In the preceding chapter, however, I cited the research of Sarah Fuller, which highlights the hypotheses that the *Ars Nova* treatises formerly thought to transmit Vitry's work are not

definitively linked to each other or to Vitry.¹² These treatises still require reevaluation; only the three former *Ars Nova* treatises that mention the semiminim will be discussed here.

The portion in Paris 7378A, *Sex sunt species principales sive concordantiae discantus*, is likely the oldest of the lot; Fuller gives it Parisian origin and states that it is “solidly anchored within the fourteenth-century.”¹³ Of the three former *Ars Nova* manuscripts, this is the only one that questions the existence of the new note value; it states that the minim can be divided into two “if it is possible to speak of semiminims.”¹⁴ The author’s dismissive tone reflects the philosophical quandary in which theorists found themselves with the introduction of smaller note values. The minim was believed to be the musical and mathematical embodiment of the philosophical implications of its name – the smallest, absolutely indivisible note value. This definition is critical to understanding the burgeoning disputes over the semiminim.

The author of *Sex sunt species principales* suggests that due to the conundrum of subdividing the indivisible minim, it would be better to rename it the *semiminor*. The term

¹² Fuller, “A Phantom Treatise of the Fourteenth Century?”

¹³ Ibid., 33-34.

¹⁴ “*Sciendum quod sicut longa perfecta tria valet tempora, sic brevis perfecta tres semibreves et semibrevis perfecta tres minimas et minima dua semiminimas, si dici possent semiminime, ut hic.*”

It should be known that as a perfect long is worth three tempora, as the perfect breve [is worth] three semibreves and the perfect semibreve three minims, and a minim two semiminims, *if one can speak of semiminims*, as is shown here. [emphasis mine]”

Reaney, Gilles, and Maillard, *Ars Nova*, 63 (this chapter originally printed as André Gilles, “Un Temoignage inédit de l’enseignement de Philippe de Vitry,” *Musica Disciplina* 10 (1956): 35-53.)

semiminim, which he feels is illogical, is thus replaced by the term minim, the more appropriate choice since it is the smallest note value.¹⁵

In the portion preserved in the manuscript Rome 307-II, *Sex minime possunt poni*, the semiminim is equal to half a minim. The author of this treatise makes the same suggestion found in Paris 7378A about renaming these two note values; the two treatises share the desire to avoid logical inconsistencies, proposing the same terms as alternates: semiminor and minim. These terms are only used together in this way in these two treatises.

The treatise with the incipit *Cum de mensurabili musica*, found in the manuscript London 21455, uses the term semiminim for the note value that is smaller than a minim and which cannot be used in odd-numbered groups.¹⁶ This treatise conflicts not only with its

¹⁵ “Et notandum quod plures quam sex non possunt poni pro tempore imperfecto nisi ibi sint semiminime. ut hic ... Sciendum quod secundum diuersos istarum semibreuium ualores diuersa sortiuntur nomina. Vnde semibreuis que sex ualet minimas maior nuncupatur Semibreuis uero que quinque uel quatuor semimaior nuncupatur a semis quod est imperfecta imperfectum. Illa uero que tres ualet minimas recta et uera semibreuis uocatur licet omnia corpora obliqua largo modo loquendo id est de semibreuibz semibreues uocantur. Illa uero que duas ualet minimas minor uocatur ut dictum est prius. Que uero solam minima appellatur Que uero minime medietatem semiminima nominatur Minime tamen et semiminime ad gradum saluandum in quo posita fuit Minima alia nomina imponi possent ita quod minima uocetur semiminor et semiminima minima nominetur.

It should be noted that more than six [semibreues] cannot be placed in imperfect tempus unless they are semiminims, as is shown here: ♫ ♫ ♫ ♫ ♫ ♫ ♫ ... It should be noted that according to their different values, these semibreues receive different names. And so the semibreue which is worth six minims is called maior. However, the semibreue which is worth five or four minims is called semimaior, from semis- which is imperfect. However, that which is worth three minims is called a correct and true semibrevis, although all oblique bodies in a broader sense are called semibreues. But that worth two minims is called minor, as has been said before. What is worth one is called minim. That which is half of a minim is called semiminim. Minima and semiminima, in order to preserve the level at which the minima is placed, can be given other names, so that the minima is called the semiminor and the semiminima is called the minima.”

http://www.chmtl.indiana.edu/tml/14th/VITARNO_TEXT.html; partial translation from Lefferts, *Robertus de Handlo* / *Johannes Hanboys*, 47 fn 120.

¹⁶ “Item sciendum est quod brevis perfecta in tres dividitur semibreues aequales et quaelibet illarum in tres minimas et quaelibet illarum minimarum in duas semiminimas. Item brevis imperfecta in duas semibreues et quaelibet illarum semibreuium in duas minimas et quaelibet illarum minimarum in duas semiminimas. Minima est quae habet tractum a parte superiori ascendentem sic. Semiminima est quae habet tractum ascendentem in obliquum versus dexteram partem sic vel sic et non possunt poni impares.

most closely related fellow *Ars Nova* treatises but with enough fundamental early fourteenth-century principles of notation that Fuller believes it may be very far removed from, if in fact related at all to, a Vitry-era tradition.¹⁷ It uses the term semiminim in a straightforward fashion with no remarks about its logical inconsistency, as opposed to the two other purportedly related treatises.

Even when *Ars Nova* was considered to be a complete work, definitely authored by Vitry, the passages concerning the semiminim were felt to be interpolations added by later fourteenth-century theorists or scribes, since Vitry never used such small note values in any of his known compositions. Hugo Riemann, for example, thought that semiminims could not have been invented prior to the writing of *Ars Nova*, so the above three discussions of the semiminims were in his opinion added later; this opinion was first promulgated by some of Vitry's contemporary theorists.¹⁸ Yet Reaney, Gilles, and Maillard pointed out that other

It should be known that the perfect breve is divided into three equal semibreves, and each of those into three minims, and each of those minims into two semiminims. Also, the imperfect breve [is divided] into two semibreves, and each of these semibreves into two minims, and each of those minims into two semiminims. The minim is that which has a stem ascending from its upper part, as here: ♪ The semiminim is that which has a stem ascending obliquely above its right side, as here: ♪ or here: ♪, and these cannot be placed unequally.”

http://www.chmtl.indiana.edu/tml/14th/REGDEM_TEXT.html

¹⁷ Fuller, “A Phantom Treatise of the Fourteenth Century?” 27.

¹⁸ For example, John of Tewkesbury, the author of the English compendium *Quatuor Principalia*, stated as such. For a more thorough discussion of this treatise, see below. Sweeney believes that John was mistaken and that Vitry would have known about the semiminim, but she bases her opinion on the belief that Vitry was in fact the author of *Ars Nova* and that tangentially related sources such as *Speculum Musicae* of Jacobus de Liège and *Compendiolum artis veteris ac novae* of Anonymous III were more closely related to Vitryan circles and therefore more authorial in their attributions than the more distantly related John of Tewkesbury. Yet John of Tewkesbury referred not to a treatise by Vitry but to Vitry's motets, and so he is entirely correct in

treatises dating from the same period also mention semiminims, thus demonstrating that it was plausible for Vitry to have known of and discussed these smaller note values despite never having put them into practice himself.¹⁹

The unified *Ars Nova* treatise has traditionally been dated to between 1315 and 1335, though more recently, scholars have begun to claim a more specific date c. 1320.²⁰ Three treatises mentioning semiminims are dated contemporaneously in some scholarly literature: the anonymous *Compendiolum artis veteris ac novae*, *De figuris*, and the *Speculum Musicae* of Jacobus de Liège.

The term semiminim is presented matter-of-factly only in the first of these treatises. The anonymous *Compendiolum artis veteris ac novae*, which Reaney, Gilles, and Maillard thought to be related to the *Ars Nova* complex (more specifically, to the treatises in Rome 307), was

stating that Vitry never used this small note value in any of his compositions (at least those that are known to modern scholarship). See Sweeney and Gilles, *De Musica mensurabili / De semibrevis caudatis*, 17.

¹⁹ Reaney, Gilles, and Maillard, *Ars Nova*, 5. See also Sarah Fuller's discussion of Vitry's possible teaching in "A Phantom Treatise of the Fourteenth Century?" 46-47.

²⁰ Reaney, Gilles, and Maillard state that the Collège de Navarre, where they believed Vitry might have taught, was founded in 1315, thus providing the document with a terminus post quem. They also give a general dating of between 1316 (their dating for the motets in the *Roman de Fauvel*) and 1330 (their dating of *Speculum Musicae* of Jacobus de Liège), though they narrow it down further to c. 1320. Reaney, Gilles, and Maillard, *Ars Nova*, 3-6.

For other opinions on the dating of *Ars Nova* to c. 1320, see also Ulrich Michels, 'Der Musiktraktat des Anonymus OP: ein frühes Theoretiker-Zeugnis der Ars Nova', *Archiv für Musikwissenschaft* 26 (1969): 49-62; Avril, Regalado, and Roesner, *Introduction to Le Roman de Fauvel*; and Margaret Bent and Andrew Wathey, "Vitry, Philippe de," *New Grove*, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/29535> (accessed August 8, 2012).

thus dated by them contemporaneously or shortly thereafter.²¹ The author states: “First, find someone who is ignorant of that which is called a minim, and that which is called a semiminim,” at which point he describes the shapes of each.²²

The treatise *De figuris* is more complicated. Portions of it are found in three manuscripts: Chicago 54.1, Siena L.V.30, and Washington LC J6. The scribe of the last, Johannes Franciscus Praeottonus de Papia, attributes both this treatise and another, *Tractatus*

²¹ Coussemaker appended this name to the treatise, and he calls the author Anonymous III; it bears the incipit “*Quoniam per ignoranciam artis musice multi*” in the Paris 15128 manuscript. In the interest of consistency, I will retain Coussemaker’s title. Gilles points out that it complements the Rome 307 ‘version’ of *Ars Nova* in that it treats certain subjects that the Vatican treatise leaves out. However, in the introduction to the critical edition of *Ars Nova*, the editors state that this treatise is not another source of *Ars Nova* but so highly reliant on it that it should be included in their edition. As has already been shown, neither it nor any of the other purported *Ars Nova* treatises can be securely linked to one another or to one single author or tradition, and so it will be treated here on its own merits. The *New Grove* entry on anonymous theoretical writings merely states that it dates from the early fourteenth century.

This date seems to be too early for two main reasons: first, the author cites Vitry, who here is described as the inventor of a new art, and he states that according to Vitry’s teachings, he will go on to discuss the various durations in musical notation. If Vitry had written an *Ars Nova* with which this anonymous author could have been familiar, it still would have taken some time for it to circulate and become a standard to cite. Given that now we know that Vitry did not write any such treatise, and that if anything some of the treatises discussed earlier might transmit some of his oral teachings, then it would have taken even longer for ‘his’ treatise to have circulated to the point where this anonymous author could cite him with such certainty and authority. The only possible exception to this scenario is if Anonymous III is not citing a Vitryan treatise but orally transmitted teachings that he has received directly from either Vitry himself or someone working closely with him. Secondly, and more importantly, the minim itself was only beginning to be graphically differentiated from the semibreve around the time of the *Roman de Fauvel*, which was completed around 1317-18. Given that this treatise assumes not only a consistently stemmed minim but also a signed semiminim, it seems unlikely that it was written as early as 1320, the date generally assigned to *Ars Nova* (see the above footnote). Still, it and the two other fourteenth-century treatises found together in Paris 15128 are all stated to be from the earlier part of the century; I would propose a slightly later date, perhaps contemporaneous with or slightly after Jacobus’s *Speculum Musicae*.

See Couss, CSM 8, and the original article by Gilles, entitled “L’Anonyme III de Coussemaker, ‘scriptores’ III,” *Musica Disciplina* 15 (1961): 27-38; C. Matthew Balensuela, “Anonymous theoretical writings,” *New Grove*, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/00969> (accessed August 8, 2012).

²² “*Primo posset querere aliquis ignorans que uocetur minima et que semiminima ...*”

de musica, to “Petri de Sancto Dionysio.”²³ Because the relationship between these two treatises is complicated, I investigate them both more thoroughly in Appendix A. The term semiminim is only found in the first section of *De figuris*; in the fourth section, the terms minor and minim appear to refer to this smaller note value.²⁴

The last of the aforementioned treatises has often been cited in scholarly literature for its vexation toward the *moderni*, or modern practitioners of music. Jacobus de Liège wrote his *Speculum Musicae*, a collection of seven books on musical theory, between 1323 and 1325. In the seventh book, Jacobus states that the semiminim can also be labeled as the semiminor. The passages surrounding this note value demonstrate Jacobus’s ire at the *moderni*; they not only place stems and even flags on the semibreves to rhythmically

²³ Coussemaker printed eight chapters selected from the Chicago version of *Tractatus* and *De figuris* as *De musica mensurabili* by his Anonymous VI. *De figuris* is presented separately in the critical edition by Ulrich Michels, cited above.

http://www.chmtl.indiana.edu/tml/14th/ANO6DEM_TEXT.html;

http://www.chmtl.indiana.edu/tml/14th/ANODEF_TEXT.html

²⁴ “*Semibrevis maioris prolationis valet tres minimas, et vocatur maior prolatio et cognoscitur sic; sive valet duas minimas et vocatur minor prolatio. Aliquando ponuntur quatuor semiminimae pro tribus minimis diversimode tamen figuratas, ut hic:*

Semibreves in major prolation are worth three minims, and it is called major prolation and is known thusly: · ♠♠♠ or they are worth two minims and such is called minor prolation: ♠♠♠♠ Some put four semiminims for three minims in whichever mode, as figured here.”

“*Partes autem prolationis sunt sex, scilicet maxima, longa, brevis, semibrevis, minor et minima ... Minor figuratur obtusa sursum proprietate signata, summitate proprietatis pro divisione <<duplicis>> proportionis dextrorsum inclinata, ut hic, et <<pro sesquialtera>> proportionem figuratur obtusa sursum proprietate signata summitate proprietatis sinistrorsum inclinata, ut hic:*

But the parts of prolation are six, namely maxima, longa, brevis, semibrevis, minor and minim ... The minor is figured with an obtuse sign above its propriety; the top of its propriety for the division into (double) proportion is inclined to the right, as shown here: ♠♠♠ and (for the sesquialtera) proportion it is figured with an obtuse sign above its propriety, with the top of its propriety inclined to the left, as shown here.”

http://www.chmtl.indiana.edu/tml/14th/ANODEF_TEXT.html

differentiate them (although the *antiqui* could deduce proper durations from musical context), they have the audacity to name a duration that is less than a minim, which is philosophically impossible. Therefore, Jacobus grumbles, the *antiqui* were better versed in the proper naming of note values, and hence in the correct and logical understanding of music theory.²⁵

Recent scholarship, most importantly by Dorit Tanay in her book *Noting Music, Marking Culture* and by Karen Desmond in her dissertation entitled “Behind the Mirror: Revealing the Contexts of Jacobus’s *Speculum Musicae*,” shows that this debate that Jacobus was having with his contemporary theorists (most notably Johannes de Muris, who had yet to discuss the semiminim) was unrelated to changes made to practical, sounding music.²⁶ Instead, Jacobus’s irritation stems from what he feels is ignorance, or at least an improper understanding of the philosophical tenets underlying the fundamental concepts of music. More specifically, it is an argument about terminology and its implications. The moderns accept the use of the duration they called a semiminim, and with it they freely subdivide the supposedly indivisible minim. But Jacobus protests against such a thing, not because smaller durations, faster tempi, or more ornate music are in and of themselves bad ideas, but because if a thing is to be called a ‘minim,’ then it must remain the minimum. It is logically

²⁵ “*Adhuc secundum dicta nomen minimitatis non videtur usquequaque rationabile cum pro minima duae ponantur semiminimae. Minimo autem non est dare minus. Ideo notarum antiqua nomina saltem aliqua videntur rationabiliora quam moderna.*”

And this name of miniminity does not seem to be rational insofar since it is possible to place two semiminims for a minim. But there ought not be less than the least. Thus the ancient names of notes given by the Ancients seem more rational than the Moderns.”

Trans. Desmond, “Behind the Mirror,” 416.

²⁶ Dorit Tanay, *Noting Music, Marking Culture: The Intellectual Context of Rhythmic Notation, 1250-1400*, MSD 46 (Holzgerlingen: American Institute of Musicology, 1999); Desmond, “Behind the Mirror.”

impossible for the minim to be subdivided or for note values smaller than it to be named and thus incorporated against reason into the mensural schema. If, therefore, smaller note values are desired, a change of terminology is not merely recommended but required.²⁷

Jacobus references a substitute term, the semiminor, but he does not discuss its origins. He does not put it forth as the label he prefers, so he might not have invented it himself; he merely uses it as though it were a clearly understood or previously acknowledged alternate. As I showed above, both Paris 7378A and Rome 307-II use the same term. But in those treatises, the term semiminor is applied to the minim so that ‘minim’ could thus be reserved for the semiminim, the smallest indivisible unit. This is not the way in which Jacobus means the term semiminor to be taken, for in his treatise it clearly refers to the

²⁷ Jacobus himself argued strongly that the semibreve, not the minim, should be the indivisible note value; again, his argument is not about the use of smaller note values, but about the naming of things. Therefore his arguments reflect dissatisfaction with both the minim and the semiminim with regard to their terminology.

In his study of the manuscript Ivrea 115, Karl Kügle mentions the presence of semiminims and other diverse types of graphemes, stating that “this diversity of notational symbols ... bears witness to the ongoing vitality of those notational innovations of the early fourteenth century that stand outside the immediate circle of ‘systematists’ surrounding [the Ars Nova treatises].” The systematists to which he refers are theorists such as Muris who made attempts to codify and explain the mensural system. Jacobus de Liège is cited as one of the many theorists who referenced the semiminim as an “established symbol.” However, David Maw misunderstands both Jacobus and Kügle in his recent article on meter in Machaut. He states that “it is important to bear in mind when assessing this comment [that tempo in Jacobus’s time was changing and the tactus was shifting to shorter note values] that Jacobus viewed the semiminim as integral to Ars nova notation. In this, however, he was at odds with the central composers and theorists working in this style, none of whom used it.” He cites Kügle’s study of Ivrea, but Kügle’s use of the word established in reference to the semiminim has now been changed to “integral,” which implies a completely different meaning. Jacobus was clearly aware of the semiminim’s existence and, if it is true that he thought of the semiminim as such an established note value, it is equally true that he hoped to overturn such faulty logic; he did not see the semiminim, or even the distinct minim, as at all necessary to the music of his time. Also, this chapter shows beyond the shadow of a doubt that theorists both contemporary with and following Jacobus were well aware of the existence of the semiminim.

Karl Kügle, *The Manuscript Ivrea, Biblioteca Capitolare 115: Studies in the Transmission and Composition of Ars Nova Polyphony* (Ottawa, Canada: Institute of Mediaeval Music, 1997), 16 fn 18; David Maw, “‘Trespasser Measure’: Meter in Machaut’s Polyphonic Songs,” *The Journal of Musicology* 21, no. 1 (January 1, 2004): 46–126; 48.

semiminim; still, the relabeling of note values as noted in Paris 7378A and Rome 307-II is very much in the spirit of his argument.

II.3: The Next Generation

The rest of the fourteenth century provides us with a list of more than thirty treatises that mention note values smaller than the minim.²⁸ Some of these subsequent theorists follow in Jacobus's footsteps, knowingly or not, in one of two ways: by rejecting the semiminim as a logical impossibility, or by renaming it (and sometimes also the minim) to avoid philosophical inconsistencies. But the rest of the theorists present this note value as a given, with no apparent qualms over either its existence or its name.

II.3.1: Rejecting the Semiminim

Some of those who snub the semiminim do so by citing the authority of accepted masters of music theory. For example, John of Tewkesbury, author of the mid-century

²⁸ Despite the presence of these treatises mentioning the semiminim, there were certainly plenty of contemporary treatises in circulation that did not discuss it. However, whether that was because the authors were unaware of the new development, or disagreed with its use, or were simply relying on or copying the teachings of earlier theorists who did not mention it themselves, cannot be discerned. There is not enough room in this chapter to present every treatise in the fourteenth century that did not discuss the semiminim. One example of a theorist who was clearly steeped in early fourteenth-century terminology and practice, yet made no mention of the semiminim, is Petrus frater dicta Palma Ociosa. He was a French Cistercian monk and theorist whose treatise *Compendium de discantu mensurabili* is dated 1336, a few years before Muris's *Libellus cantus mensurabilis*. He goes into great length to discuss the way longs, breves, semibreves, and minims interact in all combinations of mode, tempus, and prolation, yet while he does not ever declare the minim indivisible, as is common in many other treatises, he also presents it as a given that the minim is the smallest note value in use.

See Johannes Wolf, "Ein Beitrag zur Diskantlehre des 14. Jahrhunderts," *Sammelbände der Internationalen Musikgesellschaft* 15 (1913-14): 505-34; Christian Thomas Leitmeir, "Arguing with spirituality against Spirituality: a Cistercian apologia for mensural music by Petrus dictus Palma ociosa (1336)," *Archa Verbi* 4 (2007): 155-199.

English treatise *Quatuor Principalia*, states explicitly that Magister Franco had no need to use note values any smaller than the minim. While some of the ancient practitioners of music had not needed a unit even that small, the minim is now not only a commonly accepted duration but also the indivisible unit upon which all mensural music is built.²⁹ The minim's invention, incidentally, is credited here to Philippe de Vitry, though as mentioned previously, John of Tewkesbury says that those who ascribe the invention of the semiminim (here also called the *crochuta*) to him err in their opinion, since Vitry never used it in any of his compositions.³⁰ John of Tewkesbury clearly knows that the semiminim is currently in use,

²⁹ This is the fourth section of the treatise; the other three do not concern themselves with this subject matter. In Peter M. Lefferts' critical editions of the theoretical treatises of Robertus de Handlo and Johannes Hanboys, this source is labeled Version B. A concordant source of *Quatuor Principalia* is found in the manuscript London Cot. Tib. B.IX; the fourth section is copied on folios 204-204v. Lefferts refers to this as Version A. Sarah Fuller pointed out that this fourth section is a variant of a treatise printed by Coussemaker as *De musica antiqua et nova* by Anonymous I. While Fuller referred to this section as Anonymous I / QP, she did not refer to John of Tewkesbury at all.

See Luminita Florea Aluas, "The *Quatuor Principalia Musicae*: A Critical Edition and Translation, with Introduction and Commentary" (PhD diss., Indiana University, 1996); Fuller, "A Phantom Treatise of the Fourteenth Century?" 40 fn 61; Lefferts, *Robertus de Handlo / Johannes Hanboys*, 3.

³⁰ The TML edition of the portion discussed above from the London 4909 copy reads as follows:

"De minima vero Magister Franco mentionem in sua arte non facit sed tantum de longis et brevibus ac semibrevibus, Minima autem in Navarina inventa erat et a Philippa de Vitriaco qui fuit filios totius mundi Musicorum approbata et usitata qui autem dicunt praedictum Philippum crochutam sive semiminimam aut dragmam fecisse aut eis concessisse errant ut in nocetis suis manifeste apparet ..."

But Magister Franco never makes mention of the minim in his work, only the long, breve, and semibreve. The minim was invented, approved and used in Navarre by Phillippe de Vitry, who in all of the world was the flower of music. But those who say that the aforementioned Philippe made or conceded the use of the crochutam or semiminim, or the dragma, are wrong, as is made clear in his *nocetis* ... [emphasis mine]

However, the concordant source states "... errant, ut in *motetis* suis manifeste apparet ...," as does the version preserved in Couss 4:257. It is clear, then, that the author refers to Vitry's motets, but whether the misspelling arises from the original source or from TML is unclear to me at the present time.

http://www.chmtl.indiana.edu/tml/14th/QUAPRIA4_MLBL4909.html

but he neither describes its physical appearance nor its specific duration in a mensural context.

A later English colleague concurs with John of Tewkesbury's assessment of the semiminim situation, though he does not base his opinion on an authority figure. Thomas Walsingham's *Regule Magistri Thome Walsingham de figuris compositis et non compositis*, likely written in the 1380s, also differentiates between older and more recent mensural practice. Walsingham states that only recently was a sixth unit, called a *crocheta*, added to the traditional five: *larga*, *longa*, *brevis*, *semibrevis*, and *minima*. He is quite emphatic that the use of this new shorter duration is not done according to the proper rules of art, but according to anyone's whim and fancy.³¹

The anonymous Italian treatise *Musice compilatio*, dating to the late fourteenth century, gives a similar description: the semiminim is not one of the five known figures of mensurable music but an unartistic interloper.³² A contemporaneous late fourteenth-century Italian treatise written by Coussemaker's Anonymous V, *Ars cantus mensurabilis mensurata per modos iuris*, states flatly that it does no one any good to discuss the semiminim or any note

³¹ “*Set nunc addita est vltorius id est vltra minimam. scilicet non per artem set per placitum que dicitur Crocheta ...*

But now [something] has been added beyond that which is the minimum, but not by art but by pleasure [has this been done]; it is called the *crocheta* ...”

http://www.chmtl.indiana.edu/tml/14th/WALREGU_MLBL763.html

³² “... *non sunt de arte*.

... These are not artful.”

http://www.chmtl.indiana.edu/tml/14th/ANOMUSC_TEXT.html

values smaller than the minim, even though they are currently used, for the very term minim precludes any possibility of subdivision.³³

It is clear, then, that some speak out against the need for or use of the semiminim well into the late fourteenth century. Theorists in France, England, and Italy all point toward the primacy of Franconian theory as well as to the new developments attributed to Philippe de Vitry and Johannes de Muris, and agree with Jacobus that their modern colleagues are either unlearned or unmusical – or both. Despite their obvious scorn for these smaller note values, though, these authors still refer to them by name, frequently with no more explanation than that which was given to the already codified note values in mensural theory. This observation implies that these terms were not invented by the authors but were instead circulating in oral or written theory to such an extent that the authors could assume their readers would be familiar with them.

II.3.2: Renaming the Semiminim

Other theorists allow the semiminim into their hierarchy of mensural note values, as long as the terminology is altered to eliminate logical inconsistencies. This trend, as one may

³³ “*Sed vere, secundum artem, non solum semiminima non est danda, verum et minima imperfecta. Videamus primitus, si minima imperfecta non est danda, ergo nec semiminima tenet consequentia, quia de maiori ad minus distributive arguendo est bona consequentia. Assumptum probatur quia ultra minimum non datur, quod patet per quid nominis ipsius minimi.*”

But truly, according to art, not only should the semiminim not be given, but also the imperfect minim. As I showed earlier, if the imperfect minim is not given, therefore neither should the semiminim, because when arguing distributively from the greater to the smaller, there is good consequent. The assumption is proved because beyond the minimum nothing is given, which is shown through the very meaning of the name of minim.”

C. Matthew Balensuela, ed. and trans., *Ars cantus mensurabilis mensurata per modos iuris*, GLMT 10 (Lincoln: University of Nebraska Press, 1994).

recall, began not with Jacobus's discussion but with even earlier treatises: the authors of the treatises in Paris 7378A and Rome 307-II propose renaming the two smallest durations such that what was formerly the *minim* would be known as the *semiminor* and the *semiminim* as the *minim*. This reconciles the term *minim* with the concept of the minimum indivisible note value.

Two other theorists, both English, also suggest renaming both the *minim* and the *semiminim*. Johannes Hanboys, writing his *Summa* around 1375, builds upon the musical theory of his predecessors, namely Franco, Robertus de Brunham, Robertus de Handlo, and most importantly Johannes Torkesey, expanding the latter's six-tiered mensural system to an eightfold one. He acknowledges that it was common in English practice to refer to this smaller note value as a *crocheta*, a term to which he vehemently objects. Hanboys states:

"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 the *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 than itself ... Thus the names of the *minima* and *crocheta* must be changed."³⁴

Hanboys suggests three new terms: the *minim* is now called the *minor*, the *semiminim*/ *crocheta* the *semiminor*, and the smallest note value the *minim*, thus making him the first theorist on record to advocate the subdivision of the *semiminim*.

³⁴ "Nomina duarum figurarum scilicet *minime* et *crochete* volo mutare, quia melius est mutare nomen figure quam eam extra graduum suum ponere ... Que quidem *crocheta* minor est *minima*, quidem hoc sit viciosum 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 minorem primo ... Ideo mutanda sunt nomina scilicet *minime* et *crochete*."

Trans. Lefferts, *Robertus de Handlo* / *Johannes Hanboys*, 189-93.

Not all of his contemporaries were as ruthless or as rhythmically diverse, however. In fact, the second Englishman just mentioned is the only other theorist of any nationality who advocated the renaming of the minim as well as the semiminim. In his *Breviarium*, dated to shortly before 1372, Willelmus puts forth yet another set of alternate terms to alleviate the pressures of philosophical consistency. He states that there are a diversity of opinions about the proper names and usages of note values; the crocheta, for example, generates disapproval not because of its name but because once again, nothing can be smaller than that which is called the minim. He credits a theorist named Odington for coming up with a simple solution to the problem: “do not call this note the minim, but the minuta, for it allows for smaller things.” Willelmus himself agrees with this and adds that “at the time, it was said that the minim was divided, but now I call the crocheta the minim,” a statement with which he feels Johannes Torkesey and the other modern theorists agree. He also refers to this smaller, indivisible unit as the *simpla*.³⁵

Crocheta and simpla were common synonyms for the semiminim in fourteenth-century England. The semiminim is labeled a simpla in Johannes Torkesey’s treatise *Trianguli et scuti declaratio de proportionibus musice mensurabilis*, which dates to the 1340s. The late fourteenth-century theorist Thomas Walsingham refers to the semiminim as the crocheta but includes the term simpla in a list of chapter headings at the very end of his treatise: “De

³⁵ The Odington cited here is the author of the treatise *Summa de speculatione musice*; as explained in the first chapter, this theorist is Walter of Evesham. See Chapter I, fn 43.

“Respondeo quod Odington. non uocauit illam notam minimam. sed minutam quia posuit quod minor possit esse. Uel aliter responderetur quia tunc dicebatur minima illo tempore diuisa; sed nunc uoco crochetum minimam ...”

http://www.chmtl.indiana.edu/tml/14th/WILBREV_MOBB842.html

Largis Longis Brevibus Semibrevibus. Minimis. et Simplis.”³⁶ The anonymous *Regule Magistri Johannes de Muris* relies upon the theories of Muris (who is referred to as a *magister*), but is not securely datable beyond the second half of the fourteenth century.³⁷ This treatise also uses the term *simples*. Lastly, in the earlier citation from the mid-century *Quatuor principalia*, John of Tewkesbury refers to those who have credited Vitry with the invention of the “*crochetam sive semiminimam aut dragmam*.” In this case, it is clear that the terms *crocheta* and *semiminim* are synonyms.³⁸

It was not only the English who continued the debate over proper terminology. Another Italian treatise, the anonymous *De musica mensurabili* found also in Rome 307, says that the *semiminim* would be more appropriately labeled the *semiminimissima*.³⁹ The author

³⁶ http://www.chmtl.indiana.edu/tml/14th/WALREGU_MLBL763.html

³⁷ The manuscript in which it is found, London Lansd. 763, dates to the early fifteenth century, and all of its twenty treatises were written by the same scribe, John Wylde. The treatises are largely a retrospective of fourteenth-century theory, so dating this particular treatise more precisely is difficult to do. However, clearly it postdates at least Muris's earlier treatises, so it has a terminus post quem of 1321. Cecily Sweeney dates London 763 to 1430-50, but Gilbert Reaney believes that it probably dates even earlier, perhaps to the 1420s; therefore, a reasonable terminus ante quem is 1430. Given that it is preserved alongside the treatises mentioned here by Torkesey and Walsingham, though, it is likely that this treatise also dates to the mid- to late fourteenth century.

Cecily Sweeney, “John Wylde and the Musica Guidonis,” *Musica Disciplina* 29 (1975): 43-59; Gilbert Reaney, “The Anonymous Treatise ‘De origine et effectu musicae,’ an Early 15th Century Commonplace Book of Music Theory,” *Musica Disciplina* 37 (1983): 101-119.

³⁸ See this chapter fn 32. Lefferts cites the anonymous mid-century English treatise *Tractatus de figuris sive de notis* as containing references to the *crocheta*, but the online editions of the text on TML do not seem to contain either the word *simples* or *crocheta*. See Lefferts, *Robertus de Handlo / Johannes Hanboys*, 189 fn 13.

³⁹ “Nam Magister F<ranco> vocat semibreves illas quae, quantum ad prolationem, secundum Philippum posse<n>t vocari minimas; et sicut apparet in quatuor gradibus, semibrevis quae valet tertiam partem temporis, secundum Philippum, uno modo vocat eam brevissimam, quod non minus quam minimam denotatur, alio modo vocat eam parvam. Et sic constat quod considerata duplici significatione vocabuli cum aliis suprascriptis secundum quod habet se vel ad medium vel ad imperfectum, non tantum semiminima posset dici, sed semiminimissima, si grammatica pateretur; et agilitas vocis se tantum extenderet quod dictam semiminimam subdividere posset, quia quando diu aliquid remanet indivisibile proportionabiliter secundum mensuram ipsius cum adiunctione dicti adiecti semi, congrue potest sibi nomen imponi respective vel significative; nec propter hoc est contra definitionem Philosophi positum, ubi dicit: quod non est dare minimum minimo.

cites Franco, a “Philip,” and “The Philosopher” as authority figures, but only the last specifically decries the use of the semiminim as an illogicality. It is unclear what his new term ought to mean or what its origins might be. In her critical edition of the treatise, Cecily Sweeney states:

“The fourth rank of semibreve is the semiminima, which ought to be called the semiminimissima according to our author. He is of the opinion that the multiplicity of terms signifying semibreve and semiminim, semi– meaning either half or imperfect, reveals that names were affixed to practices already in use and had little meaning in themselves, thus justifying the use of the term semiminima, when Aristotle (the ‘philosopher’) would say: quod non est dare minimam minima.”⁴⁰

In this statement, she implies that the term semiminimissima is a newly invented word purposefully exaggerated in an Italian style in order to scorn the smallness of the note value in question. Its hyperbole may also imply a sense of dismissal or even disdain for the

For Magister Franco calls semibreves those which with regard to prolation according to Philip can be called minims, and as is apparent in the four grades, semibreves are those worth a third part of the tempus, according to Philip, who in one way calls it brevissimam, which is not less than the denoted minim, but in another way calls it parvam. And so it is evident that considering the double meanings of words with others written above, inasmuch as it has itself or to the middle or to the imperfect, not only could it be called a semiminima, but a semiminimissima, if grammar would allow it, and the agility of the voice so far extends itself that it could be subdivided into that called a semiminim, because when for a long time something remains indivisible proportionally according to its mensura, with the addition of the adjective semi-, it fittingly can be imposed on its name respectively or significatively; not because of this is contrary to the definition given by the Philosopher, who says: because nothing is less than the minimum.”

http://www.chmtl.indiana.edu/tml/14th/ANODEM_TEXT.html

Cousse-maker, misreading the name of a later scribe in the collection of treatises, Theodono de Caprio, ascribed this work to a ‘Theodoricus de Campo.’ In scholarly literature, one finds references to the author under both names, infrequently Teodono de Caprio, Pseudo-Theodoricus, Anonymous dictus Theodoricus, and recently simply under Anonymous. In the critical edition, Sweeney felt that because the treatise shares many elements with the anonymous *Quatuor principalia* that perhaps they could be dated within a few years of each other; however, at the time, she believed that the English treatise was dated as late as 1380. See Sweeney, *De Musica mensurabili*, 9.

⁴⁰ Sweeney and Gilles, *De Musica mensurabili / De semibrevis caudatis*, 23.

semantical nature of these arguments over terminology, which had little, if anything, to do with the use of these note values in practical music.

These theorists, for whom the philosophical ramifications of naming note values is a cause for concern, still portray the semiminim as a mensural duration that was currently in practical use, and most of them choose to discuss its shape and duration despite their terminological reservations. The term semiminim is not always clarified, as one would expect for a newly invented word. Instead, the note value called the semiminim is often presented in a straightforward manner, similar to the other parts of the mensural hierarchy. The exception to this pattern is found when alternate terms are presented in addition to semiminim; then, the authors tend to give greater insight into the dilemma of proper naming. Again, it appears that at least several of these terms must have been in circulation to the point where the authors felt their readers did not need definitions for them.

II.3.3: Accepting the Semiminim

In the fourteenth century, more than twenty treatises of varying provenances have survived in which the authors described the semiminim as a legitimate duration. The inclusion of the semiminim could be attributed to an ignorance of the Nominalist debates about the term, or perhaps a sense of apathy toward what might have seemed to be semantic nit picking. As Luminita Aluas points out in her discussion of nomenclature in the *Quatuor Principalia*, however, there is a distinction to be made between the different types of what she calls polysemantic terms. While on the one hand, the term minima was the name of a particular note value, it was also one of several

“adjectival qualifiers ... employed to establish the position of figures within a given gradus and with respect to each other. Thus the term ‘maior’ is applied to ternary entities and is taken to mean ‘larger’; ‘minor’ applies to everything binary and expresses the concept of ‘lesser’; finally, ‘minima,’ rather than referring to the value or figure itself, is taken to mean ‘minimal.’”⁴¹

Perhaps these authors view the term *minim* not as an absolute, indivisible entity, but as a minimal note value without the same logical and terminological baggage; the term *semiminim*, then, might not have caused the same concern.

In France, Johannes de Muris might eventually have become aware of the *semiminim* so contested by his contemporaries, though whether he advocated its use is unclear. In two of his early treatises, the aforementioned *Notitia artis musicae* and *Compendium musicae practicae*, Muris makes no mention of anything smaller in value than a *minim*. But the later *Libellus cantus mensurabilis secundum Johannes de Muris* (an incredibly influential treatise purportedly authored by Muris) does mention the *semiminim*, though only in two small instances.⁴² The

⁴¹ Aluas, “The *Quatuor Principalia Musicae*,” 134.

⁴² The entry for Muris in *New Grove* points out that while the work is transmitted in an astonishing forty-seven sources, thirty-nine of which are Italian and dated well past Muris’s death in 1344 – in fact, well into the fifteenth century. This for many scholars has been cause for concern about definitely attributing the treatise to Muris, but Daniel Katz has shown in his dissertation that it is reasonable to assume Muris’s authorship. The treatise dates to c. 1340.

Christian Berkold demonstrated in his 1999 edition that there are two main stemmatic traditions, or recensions, for the treatise. The major recension (Recensio A) was more widely copied, coming out of the tradition of central and southern Europe and being particularly influential in Italy; despite its larger sphere of circulation and influence, Edward Roesner points out in his review of Berkold’s edition that it “is likely to be the farther removed from whatever *Urgestalt* the text may have had.” The minor recension (Recensio B) was copied less frequently but was more commonly circulated in northwestern Europe – France and particularly England. This latter recension also directly impacted the expanded version found in the *Libellus*’s closest relation, the third treatise in the Berkeley manuscript. While both Recensios refer to the *semiminim* rest, only Recensio B contains the reference to the *semiminim* as used in diminution, perhaps marking that practice as reflective of northwestern European theory.

Christian Berkold, *Ars Practica Mensurabilis Cantus Secundum Iohannem De Muris: Die Recensio Maior Des Sogenannten ‘Libellus Practice Cantus Mensurabilis’*. München: Verlag der Bayerischen Akademie der Wissenschaften: in Kommission bei der C.H. Beck’schen Verlagsbuchhandlung München, 1999; Gushee,

first is not a description of the semiminim at all, but of the semiminim *pausa*; this may be the earliest description of a rest corresponding to the semiminim, although no other mensural context for it is given.⁴³ The second instance only states that in cases of diminution, the next smallest duration replaces the one preceding it, and thus the semiminim is sung in place of the minim. The semiminim therefore appears to be an accepted part of the mensural schema in this treatise, but in what way remains unclear. At the very least, Muris uses the term semiminim without preamble or further definition, even though he did not define the note value to which the term applied.⁴⁴

“Muris, Johannes de”; Daniel Seth Katz, “The earliest sources for the *Libellus cantus mensurabilis secundum Johannem de Muris*” (PhD diss., Duke University, 1989).; Edward H. Roesner, “Review: *Ars Practica Mensurabilis Cantus Secundum Iohannem De Muris: Die Recensio Maior Des Sogenannten ‘Libellus Practice Cantus Mensurabilis’* by Iohannes De Muris; Christian Berkold,” *Speculum* 78, no. 2 (April 1, 2003): 536–537.

⁴³ This observation about the semiminim rest depends on the dating of the third section of the *Ars discantus*, which also references the rest. This portion could date as early as 1325, because of its relationship with Anonymous III, but since it is not more securely datable, it could also have been written after the *Libellus*. Unless further study reveals a more accurate and earlier dating for this section of the *Ars discantus*, the *Libellus* therefore is the earliest datable reference we have to the semiminim rest.

⁴⁴ This opinion is partially shared by Ulrich Michels, who does not consider Muris to have discussed the semiminim at all in his theory: “*Auch die selbstverständliche Behandlung der Semiminima in der IAM [‘in arte motetorum,’ Ars Discantus III] läßt sich nicht mit der Lehre des Johannes de Muris vereinbaren, der von der Semiminima zwar sicherlich gewußt hat, sie aber nicht in seine Theorie aufnahm.*”

Also, the obvious treatment of the semiminim in the IAM [“in arte motetorum,” *Ars Discantus III*] does not agree with the teachings of Johannes de Muris, who surely knew of the semiminim but did not, however, make note of it in his theory.”

Michels is correct insofar as Muris did not clarify what he believed a semiminim to be, but the term itself is certainly used in *Libellus*, and as stated above, from that treatise we know that the semiminim had a corresponding rest and was used in instances of diminution.

Ulrich Michels, *Die Musiktraktate Des Johannes De Muris: Quellenkritik Und Besprechungen* (Wiesbaden: Franz Steiner Verlag, 1970), 45.

This and the other works by Muris were incredibly influential on theorists well into the late fifteenth century. A related treatise, labeled *Ars discantus* by Gerbert and Coussemaker, relies heavily enough on both ‘Vitryan’ works and the theories of Muris that they believed the treatise to have been written by Muris himself.⁴⁵ Ulrich Michels’s study of the treatises of Muris sheds more light on this particular work.⁴⁶ Michels clarifies that the *Ars discantus* is not one unified treatise, but a composite of eleven smaller tracts, the third and ninth of which discuss the semiminim. He terms the third section IAM, an abbreviation for its incipit, *In arte motetorum*; because of its similarities to Anonymous III and to the works he believed comprised *Ars Nova*, as well as to some of Muris’s theories, he dates this treatise to the first half of the fourteenth century. In it, the anonymous author discusses both the semiminim and its rest. Michels also dates the ninth section of *Ars discantus*, bearing the incipit *Partes prolationes quot sunt*, to the early fourteenth century due to its similarity to Muris’s *Compendium*; it also makes mention of the semiminim, though not as one of the five accepted units of mensural value.

The collection of five largely anonymous treatises now labeled the Berkeley Manuscript, dated in part to 1375, references the semiminim in the second and third works. The second describes the semiminim, but the third treatise is an expanded version of *Libellus*

⁴⁵ Couss 3:68-113. There is plenty of scholarly discourse surrounding the myriad of misattributions and other editorial issues perpetrated by Gerbert and Coussemaker, so there is no need here to further belabor the point. In the body of this dissertation, though, I will refer to their attributions in order to help distinguish treatises from one another and for ease of reference between this document and other academic research.

⁴⁶ Michels, *Die Musiktraktate Des Johannes De Muris*.

cantus mensurabilis, so only the semiminim's rest is mentioned.⁴⁷ Another work that relies on the *Libellus* is found on folios 99-104v of the Seville 5.2.25 manuscript; thought to be by one Johannes Pipudi, it mentions *seminas*, a term that could possibly be a miscopying of the term semiminimas.⁴⁸ In addition to these, the late fourteenth-century anonymous treatise *De semibrevis caudatis* also uses the term semiminim.

The treatise *Ars musice* by the Dutch scholar Johannes Boen is found in two manuscripts: London 23220 and Venice 3434.⁴⁹ Written close to 1350, it too relies on the teaching of Muris. Boen gives the four main mensural values: long, breve, semibreve, and minim, but then waxes philosophical, describing how it might be possible to talk of longer and longer, or shorter and shorter notes ("*de semiminimis et adhuc minucioribus*"), ad infinitum. The semiminim as a discrete mensural unit is not described.⁵⁰

Two relevant treatises were originally copied in the lost manuscript Strasbourg C.22, but fortunately Coussemaker was able to transcribe them before it was destroyed by fire. While the date of 1411 was inscribed on one folio, the music ranges from 1310 to 1450, making these treatises not more closely datable than the late fourteenth century. The anonymous *Liber musicalium* contains a fairly cursory discussion of the semiminim, presenting

⁴⁷ In his dissertation, Daniel Katz thought the third Berkeley treatise was close enough to the *Libellus* tradition to count it as a source for that treatise. See Oliver B. Ellsworth, ed. and trans., *The Berkeley Manuscript*, GLMT 2 (Lincoln: University of Nebraska Press, 1984); Katz, "The earliest sources for the *Libellus*."

⁴⁸ For more information on this treatise and its author, Johannes Pipudi, I direct the reader to Appendix C.

⁴⁹ Not to be confused by the treatise *Musica* by the same theorist. See the critical edition by F. Alberto Gallo, *Johannis Boen. Ars (musicae)*, CSM 19 ([Rome]: American Institute of Musicology, 1972).

⁵⁰ Gordon A. Anderson and Anna Maria Busse Berger. "Boen, Johannes." In *Grove Music Online. Oxford Music Online*, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/03379> (accessed March 3, 2012).

only the term and its accompanying grapheme with no other explanation.⁵¹ The other, *De minimis notulis* (the author of which Coussemaker called Anonymous X), presents a more complicated picture. This treatise specifically discusses an array of smaller note values, one of which is called the semiminim and is applied to the next smallest note value below the minim. Another term, the *minima semiminimarum*, is also applied to another duration smaller than the minim. I will detail this treatise more closely in Chapters III and IV.

Four other treatises with possible Austro-Germanic origins, some with distinct similarities to the anonymous *De semibrevis caudatis*, also mention smaller note values; unlike their French and English counterparts, they are consistent on the choice of semiminim as the appropriate term for them. The anonymous *Compendium totius artis motetorum* may be the earliest.⁵² Like so many of these treatises, it begins with a description of each duration in mensural music. The author presents his hierarchy of mensural durations, beginning with the longa and proceeding through each smaller denomination, but his list includes note values not heretofore seen. He includes the semiminim after the minim, but after the semiminim he adds the *minima addita* and the *fusella*. While Hanboys included other terms to specify a note value smaller than the semiminim, such is not the case here. Rather, the *minimae additae* and *fusellae* are not subdivisions of the semiminim but proportional figures that I will discuss further in later chapters.

⁵¹ This treatise was originally attributed by Coussemaker to Philippe de Vitry, yet it does not appear to have been considered part of the *Ars Nova* complex in scholarly literature, nor is it mentioned in either Fuller's article or the critical edition and translation by Gilbert Reaney, André Gilles, and Jean Maillard. Coussemaker's copy of the entirety of Strasbourg 222 is now known as Brussels 56.286.

⁵² Johannes Wolf, "Ein anonymer Musiktraktat aus der ersten Zeit der 'Ars Nova,'" *Kirchenmusikalisches Jahrbuch* 21 (1908): 34-38; see Chapter III, fn 32 for a reconsideration of this treatise's date.

Similarly, the Austrian treatise *Tractatulus de cantu mensurali seu figurativo musice artis*, which dates to the last third of the century, begins with a list of currently known mensural values as well as discussions of mode, tempus, and prolation.⁵³ The author states that in the time of Johannes de Muris, there were only five accepted durations (the maxima, long, breve, semibreve, and minim).⁵⁴ The moderns, though, have a multitude of note values about which the author will speak; one of these is the semiminim.⁵⁵ The late fourteenth-century *Tractatus de Musica* uses the term semiminim, as does the Silesian *De musica mensurata*.⁵⁶

No treatise of Italian provenance names a note value smaller than the minim prior to the 1370s. Instead, the early and mid-fourteenth century discussions about smaller note

⁵³ The manuscript, Melk 950, is believed to have originated in the monastery at Melk, and has been dated to the 1350s-60s. See F. Alberto Gallo, ed., *Anonymus: Tractatulus de cantu mensurali seu figurativo musice artis* (MS. Melk, Stiftsbibliothek 950), CSM 16 ([Rome]: American Institute of Musicology, 1971).

⁵⁴ This statement of course raises several questions: Was Muris eventually familiar with the semiminim as a functional smaller note value, as some versions of the *Libellus cantus mensurabilis* seems to imply? If so, does this treatise thus predate *Libellus*, reflecting an earlier Murisian tradition? The author uses the phrase “according to Johannes de Muris,” but that could be in reference to any of Muris’s earlier treatises, not necessarily to *Libellus*. The scholarly literature on the treatise dates it tentatively to the mid-fourteenth century, which thus places it contemporaneous with or shortly after *Libellus*, making it possible for the author to have known of it. Therefore, another option is that the anonymous author was either unaware of Muris’s descriptions of the semiminim, or he felt that Muris’s statements with regard to the semiminim were not thorough enough to declare that it had been fully incorporated into the mensural system.

⁵⁵ “Notandum ulterius, quod secundum Johannem de Muris quinque sunt species prolacionum sive nomina notarum formaliter ab invicem distincte, videlicet maxima, longa, brevis, semibrevis et minima. Sed secundum modernos nunc reperiuntur in cantu mensurali 14 species notarum, videlicet longissima, duplex longa que etiam maxima dicitur, longa, brevis, semibrevis, minima, semiminima, fusiel, semifusiel, brevis plicata, cardinalis seu voluntaria, oblonga, vacua, semivacua; de singulis iam consequenter statim dicetur.

It should now be known, that according to Johannes de Muris there are five species of prolation which in name and in form are distinct: namely, the maxima, long, breve, semibreve, and minim. But according to the moderni, they now have invented in measured song fourteen species of notes, namely the longissima, duplex longa which is also called maxima, long, breve, semibreve, minim, semiminim, fusiel, semifusiel, plicated breve, cardinalis or voluntary, oblong, void, semivoid; of each of these consequently I will now speak immediately.”

http://www.chmtl.indiana.edu/tml/14th/ANOTRA_TEXT.html

⁵⁶ http://www.chmtl.indiana.edu/tml/14th/ANOBRI_TEXT.html

values follow in the same vein as Marchetto of Padua and the anonymous glosser found in *Rubrice breves*, as I described earlier. Both Marchetto and the other author allow for the possibility of note values that are shorter than the minims created by the Italian divisiones, though these durations are neither named nor given any more concrete description. The author of the second part of *De diversis manieribus*, called Anonymous VIIb, also describes note values smaller than the minim.⁵⁷ In laying out the four divisions of notation, he states:

“It has been said that there are two prolations, namely, major and minor. These two prolations can be divided into four; for the first prolation is when the natural long is worth three breves and the breve three semibreves and the semibreve three minims; *and if three minims can be divided into four parts, they are not equal ones.*

This prolation is said to be major in mode and of perfect tempus.

The second prolation is when the natural breve is worth three semibreves and the semibreve two minims; *and if there are six minims, they can be divided into twelve parts, but not equal ones*, as in ‘Philomena.’

The third prolation is when the natural breve is worth two semibreves and semibreve three minims; *these can be divided into four parts, but not equally.* Then it is called tempus imperfectum and modus perfectus.

The fourth prolation is when the natural breve is worth two semibreves, and the semibreve two minims which are placed equally; and this is called tempus imperfectum, prolation minor, imperfect modus; and thus all is made clear. [emphasis mine]”⁵⁸

⁵⁷ When Coussemaker printed this treatise, he labeled its author Anonymous VII, but Gilbert Reaney and Sarah Fuller both point out that the last folio probably belongs to a separate treatise; to that end, Fuller labels the authors Anonymous VIIa and Anonymous VIIb. This treatise has been dated to the 1330s by Reaney and Gallo due to the reference the author makes to Philippe de Vitry; given the earlier discussion about the authorship of the purported *Ars Nova* treatises and Vitry’s own unknown role in notational pedagogy, a slightly later date would also be acceptable.

Fuller, “A Phantom Treatise?”; Gilbert Reaney, *Anonymous: De valore notularum tam veteris quam novae artis*; *Anonymous: Compendium Musicae Mensurabilis Tam Veteris Quam Novae Artis*; *Anonymous: De diversis manierebus in musica*: Ms. Paris, Bibl. Nat., lat. 15128, CSM 30 ([s.l.]: Hänssler Verlag, 1982).

⁵⁸ “*Dicit predictus quod due sunt prolationes, scilicet major et minor. Iste due prolationes possunt dividi in quatuor; nam prima prolatio est, quando naturalis longa valet tres breves et brevis tres semibreves et semibrevis tres minimas; et si tres minime dividi possunt in quatuor partes, sed non equales.*

In three of the four divisions, then, minims can be divided into smaller units, though these remain undistinguished by name.

Tractatus figurarum, written in the 1370s, is the first Italian treatise to use the term semiminim to describe a note value smaller than the minim. It is found in no less than fourteen extant sources and is attributed to three different authors: Philippus or Philippotus

Ista prolatio dicitur esse major de modo et de tempore perfecto.

Secunda prolatio dicitur quando brevis naturalis valet tres semibreves et semibrevis duas minimas; et si sunt sex minime que dividi possunt in duodecim partes, sed non equales, ut in "Philomena".

Tertia prolatio est quando brevis naturalis valet duas semibreves et semibrevis tres minimas; que possunt dividi per quatuor partes, sed non equales. Tunc dici potest quod sit tempus imperfectum et modus perfectus.

Quarta prolatio est quando brevis naturalis valet duas semibreves, et semibrevis duas minimas que sunt equales proferende; et dicitur esse tempus imperfectum minoris prolationis modi imperfecti; et hoc totum patet."

http://www.chmtl.indiana.edu/tml/14th/ANO7DED_TEXT.html

The 'someone' to whom this author attributes this mensural schematic is Philippe de Vitry, but as Sarah Fuller points out, the system that this author describes is not at all related to any discussion presented in any of the *Ars Nova* treatises; she links the system more closely to Muris's *Compendium*, though that treatise never mentions note values smaller than the minim. Fuller, "A Phantom Treatise of the Fourteenth Century?" 36-37.

The 'Philomena' that the author references may in fact be the late fourteenth-century motet labeled by Johannes Wolf *Exultet mea vena / quodlibet ex Phylomena*, which was an *unicum* originally found on folio 29b of the lost manuscript Strasbourg 222. Phylomena here is not part of the name of the motet, but likely the nickname of its composer, possibly the 'Jugis Philomena' mentioned in the text of the musicians' motet *Apollinis / Zodiacum*, found in the manuscripts Barcelona 853 (Barc A), Barcelona 971 (Barc C), Tarragona ss 2, Trémoille, Ivrea, Padua 658, and Leiden 2515. Unfortunately, only the melodic incipit of *Exultet mea vena* was copied into the thematic index compiled from Charles Van den Borren's copy, and it contains nothing smaller than a minim, so it is impossible to determine if the rest of the work might have used smaller note values that could either definitively link this piece to this treatise or that could clarify the vague statements found within.

Elizabeth Eva Leach, *Sung Birds: Music, Nature, and Poetry in the Later Middle Ages* (Ithaca, NY: Cornell University Press, 2007), 107; Charles van den Borren and Charles Edmond Henri de Coussemaker, *Le Manuscrit Musical M.222 C.22 De La Bibliothèque De Strasbourg (XVe Siècle) Brulé En 1870, Et Reconstitué D'après Une Copie Partielle d'Edmond De Coussemaker* (Anvers: E. Secelle, 1987), 75-76.

de Caserta, Phillipotus Andreas, and Egidius de Murino.⁵⁹ In addition to the five note shapes of common mensural practice (duplex longa, longa, breve, semibreve, and minim), the author lists the semiminim as the fundamental unit of music, for no music is made without it.⁶⁰ Also found on folios 93-94v of the Seville 5.2.25 manuscript is a commentary on *Tractatus figurarum*; no author or title is given, but F. Alberto Gallo entitled it *Tractatulus de figuris et temporibus*.⁶¹ In it, the author cites “magister Philippotus de Caserta” as the inventor of various proportional note shapes which he will then list, one of which is the semiminim. Strikingly, the author applies the term semiminim here to two sets of note values that differ both in shape and in duration; one is called French and the other Italian. These treatises will be explored in greater detail in Chapter V.

⁵⁹ In his critical edition, Philip E. Schreur speculates that there might have been as many as fifteen lost sources for the treatise, given the stemmatic relationship that he has compiled between the extant sources. The treatise is also known as *Tractatus de diversis figuris*. In the fourteen sources, it is ascribed to Philippus de Caserta in Faenza 117, to Philippotum de Caserta in Seville 5.2.25, to Phillipotus Andreas in Chicago 54.1, and also to a Egidius de Murino, in London 4909, Rome 5321, Siena L.V.30, and Wasington LC J6. While Wulf Arlt has determined stemmatically that Murino cannot be the author, nothing is known of Phillipotus Andreas, and while Philippus de Caserta is a plausible choice, the treatise’s description of certain notational figures does not match the notation used in his own extant compositions, thus casting doubt on the attribution to him as well.

Gilbert Reaney, “Caserta, Philippus de,” *New Grove*, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/43682> (accessed March 3, 2012); Wulf Arlt, “Der Tractatus Figurarum: ein Beitrag zur Musiklehre der ‘ars subtilior,’” *Schweizer Beiträge zur Musikwissenschaft*, I (1972): 35–53; Philip E. Schreur, ed., *Tractatus figurarum / Treatise on Noteshapes* (Lincoln, NE: University of Nebraska Press, 1989).

⁶⁰ “*Et primo volo dicere de semiminima quia sine ipsa factum est nichil in musica.*”

And first I wish to speak of the semiminim, because without it nothing in music is made.”

http://www.chmtl.indiana.edu/tml/14th/TRAFIG_TEXT.html

⁶¹ Inc. “*Sciendum est quod quatuor sunt tempora discantus ...*”
Exp. “*... secunda similiter et tertia est brevis. Et hec sufficient.*”

Schreur, *Tractatus figurarum*, 50; F. Alberto Gallo, ed., *Mensurabilis Musicae Tractatuli: Antiquae Musicae Italicae Scriptores*, 1 (Bologna: Università degli Studi de Bologna, Istituto di Studi Musicali e Teatrali - Sez. Musicologia, 1966): 78-85.

The author of *Ars cantus mensurabilis mensurata per modos iuris* was clearly conflicted about the very existence of these small note values.⁶² He gives the minim pride of place as the smallest indivisible unit, as has been seen in many treatises thus far, yet credits an otherwise unknown composer, Frater Nicholas de Aversa (apparently a member of the Celestine Order), with using two semiminims in place of a minim.

Two later fourteenth-century treatises also use the term semiminim; both are found in the manuscript Florence Redi 71 and are written in a Tuscan dialect, as opposed to the Latin used in all other aforementioned treatises. The anonymous *Notitia del valore delle note del canto misurato* (hereafter abbreviated *Notitia del valore*) is, in the words of Armen Carapetyan,⁶³ “a short elementary compilation of the principles of mensuralist notation” largely based on *Libellus cantus mensurabilis* as well as on what Carapetyan thought was the Vitryan *Ars Nova*.⁶⁴ It begins with an explication of the primary note values, one of which is the semiminim; the author also gives corresponding rests. The other treatise is *L’arte del biscanto misurato secondo el*

⁶² Balensuela, *Ars cantus mensurabilis mensurata per modos iuris*, 76-78.

⁶³ Armen Carapetyan, ed., *Anonimi: Notitia del valore delle note del canto misurato* (Rome: American Institute of Musicology, 1957), 12.

⁶⁴ In a recent article, Michael Long calls attention to an inscription in *Notitia* which reads “a uso de s[uo]r Laudomina;” the treatise belonged therefore at some point to a Florentine sister, perhaps a member of a *studio* where many well-off women were educated. Long mentions the possibility that perhaps the treatise was written specifically for this sister’s use, though he cautions against making any firm claims to the work’s origins. Armen Carapetyan shares this opinion in his article on the treatise.

Armen Carapetyan, “A Fourteenth-Century Florentine Treatise in the Vernacular,” *Musica Disciplina* 4, fasc. 1 (1950): 81-92; Michael Long, “Singing Through the Looking Glass: Child’s Play and Learning in Medieval Italy,” *Journal of the American Musicological Society* 61 no. 2 (2008): 298-99.

maestro Iacopo da Bologna.⁶⁵ As has been seen before with *Ars Nova* and Philippe de Vitry, the multiple named authors of *Tractatus figurarum*, and the debates over the *Libellus cantus mensurabilis* of Johannes de Muris, authorial ascriptions are not always correct; in this case, general opinion is that Jacopo da Bologna might at least have influenced this work through his theoretical teachings, if he was not the author himself. He too uses the term semiminim to refer to smaller note values.

II.4: Conclusions

During the fourteenth century, a variety of opinions existed on what this new, shorter note value ought properly to be called. From Marchetto through Jacobus de Liège, the earliest discussions of the semiminim already reflected the inherent conflict between practice and theory, between the use of a note value smaller than a minim and the logical incongruity of the language used to describe it. Of the thirty-five treatises hitherto mentioned, three discuss note values smaller than a minim but do not call them by a specific name. Twenty-seven treatises of varying provenances use the term semiminim, six of which offer at least one alternative. The remaining five discuss the concept of the semiminim but offer different names; all are English and use the terms *crocheta*, *simpla*, *semiminor*, or *minim*.

From these facts and figures, I make a few observations. First, while many treatises used the term semiminim, the origins of the word are unclear. Some attributed the

⁶⁵ Pier Paolo Scattolin, ed., “L’arte del biscanto misurato secondo el maestro Iacopo da Bologna,” in *Mensurabilis Musicae Tractatuli Antiquae musicae italicae scriptores* 2, edited by P.P. Scattolin, 9-60 (Bologna: Università degli Studi de Bologna, Istituto di Studi Musicali e Teatrali - Sez. Musicologia, 1975).

semiminim's invention to Philippe de Vitry, but such an assertion can certainly not be justified, especially given the current state of knowledge surrounding his authorship of the *Ars Nova* complex of treatises.⁶⁶ None of the treatises puts forth another explanation for the invention of the term, though, so its origins remain unknown. However, the fact that most of the earliest treatises to mention the term are of French provenance suggests that the term, if not its referent, was first used in France.

It is important to note, though, that these treatises often refer to the semiminim as something that is *already occurring* in practical music, so it is distinctly possible that both the unit and its name were created by practicing musicians in order to describe the shorter durations created by vocal or instrumental ornamentation of a melodic line.⁶⁷

⁶⁶ As Peter Lefferts points out, this attribution is second-hand, as we only know of it through John of Tewkesbury's refutation of such an attribution in the *Quatuor Principalia*.

Lefferts, *Robertus de Handlo / Johannes Hanboys*, 49 fn. 126; Fuller, "A Phantom Treatise of the Fourteenth Century?" 40-41.

⁶⁷ For example, the anonymous author of *De musica mensurabili* states: "*Nonnulli asserunt promere semiminimas dimidias minimas in instrumentis sive in levissimis vocibus ...*"

Some claim that semiminims, which are half of minims, are produced by instruments or the lightest of voices ..."

Also, Anne Stone discusses several treatises that mention the practice of highly ornamenting or rhythmically varying a melodic line in a complicated fashion; even though some of the theorists are not specific as to the rhythms created or the note values being used, it is clear that they are referring to practices that were not easy to notate using the fourteenth-century systems that were available to them, and likely included syncopations, different combinations of mensurations, and smaller note values. See also the suggestions made by Jostein Gundersen with regard to the theoretical discussions of diminution.

http://www.chmtl.indiana.edu/tml/14th/ANODEM_TEXT.html; Jostein Gundersen, "Reflection on Diminutions in the Polyphonic Music of Trecento" (2009)

<http://www.currentes.com/tekster/Gundersen_DiminutionsTrecento_090529.pdf>; Anne Stone, "Glimpses of the Unwritten Tradition in Some 'Ars Subtilior' Works," *Musica Disciplina* 50 (January 1, 1996): 59-93.

Second, the word *semiminim* was not a codified part of mensural terminology in the fourteenth century. Not everyone who mentioned the term did so in a favorable light, nor did everyone who discussed smaller note values choose it to describe them. Yet the term was clearly the most frequently used, even if pejoratively. The primary dilemma was philosophical; as shown above, Jacobus de Liège believed that the use of the self-contradicting term *semiminim*, among other wrongs, demonstrated that the *moderni* did not fully understand the logic behind the terms used in mensural notation. Therefore, he elaborated on the consistency and primacy of the theory of the *antiqui*, although he allowed for the potential renaming of mensural note values.

Until the recent research of Tanay and Desmond, scholars frequently viewed Jacobus as a conservative reactionist who disagreed with the new practical music, but we now understand his arguments as reflective of the particular philosophical and mathematical viewpoints explained earlier. Yet the contemporary and later treatises that also discussed the proper naming of mensural note values have not all been reexamined in the same light. It seems that the same philosophical conundrums that plagued Jacobus were of concern to a number of other theorists both in France and elsewhere; thus they suggested alternate terms as replacements for the troublesome *semiminim*. Rancor over this illogical term was not relegated merely to Jacobus's time, but is evident throughout the entire fourteenth century.

With regard to the alternate terms proposed as replacements for the term *semiminim*, I summarize as follows. First, no two treatises compared the same sets of terms, with one exception. The two treatises formerly thought to be portions of *Ars Nova*, Paris 7378A and Rome 307-II, both suggest that the *minim* be renamed the *semiminor* so that the

semiminim could be called minim. In place of the semiminim, Jacobus offers the semiminor, John of Tewkesbury the crocheta, and the anonymous author of the Vatican *De musica mensurabili* the semiminimissima; Hanboys chooses the semiminor instead of the crocheta, and Willelmus prefers minim to both crocheta and simpla. Yet these are not merely synonymous terms. Despite their different choices, each theorist's preference was a manifestation of the conclusions they drew about the need for logical terminology in music.

In the discussion directly preceding the introduction of the term semiminim, Rome 307-II and Paris 7378A lay out the types of semibreves found in mensural notation: the maior, which is worth six minims; the semimaior, which is worth four or five minims; the semibrevis recta, worth three; and the minor, worth two minims. The minim itself is a single unit, and the semiminim is half of the minim. But since the minim was itself half of a minor, the authors introduce the term semiminor as a grammatically accurate alternate, thus replacing the troublesome term semiminim with minim.⁶⁸

⁶⁸ Rome 307-II: “*Sciendum quod secundum diversos istarum semibreuium valores diversa sortiuntur nomina unde semibrevis que sex valet minimas maior nuncupatur Semibrevis vero que quinque uel quatuor semimaior nuncupatur a semis quod est imperfecta imperfectum. Illa vero que tres valet minimas recta et uera semibrevis vocatur licet omnia corpora obliqua largo modo loquendo id est de semibreuibz semibreues vocantur. Illa vero que duas valet minimas minor vocatur ut dictum est prius. Que vero solam minima appellatur Que vero minime medietatem semiminima nominatur Minime tamen et semiminime ad gradum salvandum in quo posita fuit Minima alia nomina imponi possent ita quod minima vocetur semiminor et semiminima minima nominetur.*”

It should be noted that according to their different values, these semibreves receive different names. And so the semibreve which is worth six minims is called maior. However, the semibreve which is worth five or four minims is called semimaior, from semis- which is imperfect. However, that which is worth three minims is called the semibrevis recta and true, although all oblique bodies in a broader sense are called semibreves. But that worth two minims is called minor, as has been said before. What is by itself is called minim. That which is half of a minim is called semiminim. Minimae and semiminimae, in order to preserve the level at which the minima is placed, can be given other names, so that the minima is called the semiminor and the semiminima is called the minima.”

Paris 7378A: “*Minime et semiminime ad gradum superatum solvendum nominantur, sicut et alie semibreves inposita habentes nomina: alia nomina imponi possunt, ita quod minima vocetur semiminor et semiminima minima.*”

Jacobus de Liège, however, had a different conception of the types of semibreves. As I alluded earlier, he believed that the semibreve should be the indivisible unit, not the minim. As a result, the terminology he used to refer to the semibreve reflected its relationship with the larger breve, not with the smaller minim. For Jacobus, a semibrevis maior was that which was worth half of a breve, while a semibrevis minor was worth one-third of a breve.⁶⁹ He states that the moderni, though, now arrange their mensural note values according to four grades, the fourth of which describes the semibrevis perfecta, semibrevis imperfecta, and

Minimae and semiminimae are named in order to be released from the superlative degree; just like other semibreves having been given names, they can be given other names, so that the minima is called the semiminor and the semiminima is called the minima.”

Partial trans. Lefferts, *Robertus de Handlo* / *Jobannes Hanboys*, 47 fn 120.

⁶⁹ “*Semibrevis, secundum Antiquos, est notula quadrangularem habens formam obtusi anguli ad modum losengae absque omni tractu, sic. Distinguitur autem, secundum Antiquos, in maiorem semibreve et in minorem. Maior semibrevis continet in se duas partes perfectae vel rectae brevis. Minor vero semibrevis continet partem tertiam perfectae vel rectae brevis. Sicque maior semibrevis valet duas minores semibreves. Hae autem, licet inter se in valore distinctae sint, conveniunt tamen in forma vel figura, illa scilicet quae posita est. Verum est quod Moderni semibreves aliter inter se distinguunt, aliter nominant et aliquas caudant, ut dicetur. Item maiorem semibreve in forma semibrevis non ponunt sed formam sibi dant brevis vocantque ipsam brevem imperfectam. Notandum, igitur quod, etsi secundum Antiquos tantum sint septem notulae simplices ut duplex longa, longa perfecta, longa imperfecta, brevis perfecta et brevis altera, semibrevis maior et semibrevis minor, illis tamen non respondent nisi quattuor distinctae figurae, quia longa perfecta et longa imperfecta in figura conveniunt, similiter brevis recta et brevis altera, consimiliter semibrevis maior et minor.*”

The semibreve, according to the Ancients, is a quadrangular note which is formed of obtuse angles in the manner of a losenge without any tails, as here: ♦. However, they are distinguished, according to the Ancients, as major semibreves and as minors. The major semibreve comprises two perfect parts of the brevis recta. The minor semibreve, though, comprises three perfect parts of the brevis recta. Each major semibreve is worth two minor semibreves. Now these, though they are distinct from one another in value, still retain the same shape, which can be known from what has been shown. It is true that according to the Moderns, semibreves can be made distinct from one another through the use of different names or stems, as I will explain. Also, they do not use the figure of a semibreve for the major semibreve, but instead they give the form of a breve, which they call an imperfect breve. It should be noted, therefore, that according to the Ancients there are only seven simple notes: duplex long, perfect long, imperfect long, perfect breve, altered breve, major semibreve, and minor semibreve; still they do not correspond to more than four distinct shapes. The perfect and imperfect longs share one figure, similarly the brevis recta and the altered breve, and the major semibreve and the minor semibreve.”

semibrevis minima; shortly thereafter, another fourth gradus by another author describes the same three semibreves as maior or parva, minor, and minima. Given his disagreement with the new types of terminology used by the moderni, it is possible that his term semiminor reflects a subdivision of his smallest semibrevis minor.

Earlier I discussed the term semiminimissima found in the Vatican treatise *De musica mensurabili*, which may reflect a hint of bemusement or exasperation on the part of the author with regard to the myriad names abounding in theory at the time. In contrast with these other alternate terms, the term crochuta/crochata/crocheta proposed by John of Tewkesbury is chosen not because of its grammatical or logical implications but because it reflects the actual physical grapheme of the note value. Crocheta stems from crotchet or crook, meaning hooked; the term was already in use in English and French well before the fourteenth century, and from it we get both the term crochet, a textile art using a hooked needle, and the architectural term crotchet, referring to hook-shaped ornaments on a building's façade. The English preference for that term – which is still prevalent today for what in American parlance is called the quarter note – clearly stems from a familiarity with the written version of the note, a hooked or flagged figure which I will explore further in Chapter IV, though this observation should not imply that they were unfamiliar with other terms for the semiminim. Yet while John of Tewkesbury preferred the crochuta, the slightly later theorist Johannes Hanboys believed that this term (or any other) was inappropriate unless the name for the minim was also changed; hence he renamed the minim the minor and therefore preferred semiminor instead of semiminim or crochuta.

The other most frequently used term in England was *simpla*, which on one hand meant simplest or smallest, but on the other hand corresponded to *simplex*, meaning one-fold as opposed to *duplex* or two-fold, therefore implying on two different levels that its referent was the smallest note value. While Willelmus mentioned both the *simpla* and the *crocheta*, he preferred to retain the term *minim* for the smallest note value, relying on Walter of Evesham's suggestion to rename the *minim* the *minuta* to allow for further subdivision without logical confusion.

These terms demonstrate both national tendencies and international lines of communication. While the term *semiminim* is found in treatises across Europe, the *simpla* and the various spellings of *crocheta* are only found in English discourse. England was certainly an eager importer of theory, as is evidenced by the number of English copies of continental treatises and the myriad references to and citations of continental theorists. Yet despite the attempts to find more precise and more appropriate terminology for the *semiminim* in continental theory, the terms *crocheta* and *simpla* are never found, implying that either continental theorists as a whole felt that these alternate terms were unappealing substitutes or, more likely, that they were unaware of them.⁷⁰

The term *semiminor*, first encountered as an alternate term for the *semiminim* in Jacobus's *Speculum Musicae*, is also found in the later *Summa* of Johannes Hanboys. Hanboys borrowed from and expanded upon English theoretical predecessors, most importantly Robertus de Handlo; Peter Lefferts has aptly shown a number of connections in phrasing

⁷⁰ Johannes Boen, for example, studied at Oxford at some point in the early fourteenth century, yet his treatises do not make any reference either to the *simpla* or the *crocheta*, which might have already been known and used there at the time.

and substance, if not direct quotation, between Handlo, Hanboys, and *Speculum Musicae*.

While Lefferts seems to connect the relevant passages in Hanboys more to the two former *Ars Nova* treatises which use the term semiminor to refer to the minim, we may also wish to consider the notion that perhaps Hanboys borrowed not just the term but its meaning from Jacobus.⁷¹

The former *Ars Nova* treatises in question, Rome 307-II and Paris 7378A, retain the term minim for their smallest note value, the semiminim. Hanboys does the same thing but expands his mensural hierarchy downward, such that the *Ars Nova* semiminor and minim become his minor and semiminor, and he reserves the minim for an even smaller note value that these other treatises do not discuss. Therefore, the connection made by Lefferts between Hanboys, Rome 307-II, and Paris 7378A may be between the naming of the two smallest note values found in each, regardless of the fact that they do not have the same duration.⁷²

In conclusion, I have shown that the desire for more specific and logically consistent musical terminology was present not just in the earliest discussions of the semiminim, but to varying degrees throughout the entire century. While the semiminim was by far the most commonly used term on the continent, it was not consistently agreed upon, and the English clearly preferred different labels. Table 1 below summarizes these findings. As I will demonstrate in the upcoming chapters, part of the dilemma in incorporating this smaller note value into the mensural hierarchy was the lack of consensus on the referent to which

⁷¹ Lefferts, *Robertus de Handlo / Johannes Hanboys*, 47 fn 120.

⁷² With regard to the alternate terms presented in *Tractatus de Musica* of Petrus de Sancto Dionysio and the accompanying *De figuris*, I once again direct the reader to Appendix A.

these different terms were applied. I will discuss the multitude of options for the duration of the semiminim, which was closely tied to the differing opinions on its philosophical substance, in Chapter III.

Table 1: Terminology for Small Note Values⁷³

<i>Author</i>	<i>Treatise</i>	<i>Terminology</i>			
		<i>Minim</i>	<i>Semiminim</i>	<i>Smaller</i>	<i>Other</i>
Marchetto of Padua	<i>Pomerium</i>		Unnamed		
Anonymous	<i>Rubrice Breves</i>		Unnamed		
Anonymous	<i>[Ars Nova]</i> <i>Cum de mensurabili musica</i>		Semiminim		
Anonymous	<i>[Ars Nova]</i> <i>Sex minime possunt poni</i>	Semiminor	Minim Semiminim		
Anonymous	<i>[Ars Nova]</i> <i>Sex sunt species principales</i>	Semiminor	Minim Semiminim		
Anonymous III	<i>Compendiolum artis veteris ac novae</i>		Semiminim		
Jacobus de Liège	<i>Speculum Musicae</i>		Semiminim Semiminor		
Anonymous	<i>Ars discantus IX</i> <i>Partes prolationes quot sunt</i>		Semiminim		
Anonymous	<i>Ars discantus III</i> <i>In arte motetorum</i>		Semiminim		
Anonymous VIIb	<i>De diversis manieribus II</i>		Unnamed		
Johannes Torkesey	<i>Declaratio trianguli et scuti</i>		Simpla		
Anonymous	<i>Regule Magistri Johannes de Muris</i>		Simpla		
Johannes de Muris (?)	<i>Libellus cantus mensurabilis</i>		Semiminim		
Anonymous	<i>Compendium totius artis motetorum</i>		Semiminim		Minimis Additis
John of Tewkesbury	<i>Quatuor Principalia</i>		Semiminim Crocheta		
Johannes Boen	<i>Ars musice</i>		Semiminim		
Anonymous	<i>Tractatulus de cantu mensurali seu figurative musice artis</i>		Semiminim		
Willelmus	<i>Breviarum</i>	Minuta Minim	Minim Crocheta Simpla		
Anonymous	<i>Tractatus de musica</i>		Semiminim		
Philipoctus de Caserta?	<i>Tractatus figurarum</i>		Semiminim		Imperfect Minim
Anonymous	<i>Tractatulus de figuris et temporibus</i>		Semiminim		

⁷³ The treatises in this chart are listed in approximate chronological order. I have chosen to include Coussemaeker's numbering of anonymous authors when their 'names' are routinely used in scholarly literature. If more than one term is given in the *Semiminim* column, then the author used them interchangeably; items in bold font were preferred above the others. Those few treatises that also renamed the minim or offered a term for a note value smaller than the semiminim have had their chosen terms included in the *Minim* and *Smaller* columns.

Johannes Pipudi	<i>De arte cantus</i>		Seminas (Semiminimas?)		Additae
Goscalcus?	<i>Berkeley II</i>		Semiminim		Additas
Goscalcus?	<i>Berkeley III</i>		Semiminim		
Johannes Hanboys	<i>Summa</i>	Minor	Semiminor Crocheta	Minim	
Anonymous V	<i>Ars cantus mensurabilis mensurata per modos iuris</i>		Semiminim		Imperfect Minim
Thomas Walsingham	<i>Regule Magistri Thome Walsingham</i>		Crocheta Simpla		
Anonymous X	<i>De minimis notulis</i>		Semiminim Minime semiminimarum		
Anonymous	<i>De semibrevibus candatis</i>		Semiminim		
Anonymous	<i>Notitia del valore</i>		Semiminim		
Jacopo da Bologna?	<i>L'arte biscanto misurato</i>		Semiminim		
Anonymous	<i>Liber musicalium</i>		Semiminim		
Anonymous	<i>Musice compilatio</i>		Semiminim		
Anonymous	<i>De musica mensurabili</i>		Semiminim Semiminimissima		
Anonymous	<i>De musica mensurata</i>		Semiminim		

CHAPTER III

The Semiminim: Issues of Duration and Substance

“Musica mensurata est quilibet cantus tempore mensuratus, cuius figure sunt omnes limitate nomine, figura, et quantitatis essentia, quibus mensurate artamur cantare cantus qui sunt talibus notulis situati, quam quidem quantitatem augere non possumus nec diminuire secundum formas et ipsarum nomina figurarum.

Measured music is any melody that is measured in time; its figures are all differentiated in name, shape, and quantity. We are constrained to sing music written with such notes mensurally; we may not lengthen or shorten the durations indicated by their shapes and their corresponding names.”

✎ Marchetto of Padua, *Lucidarium*¹

For the fourteenth-century theorists discussed in Chapter II, decisions about proper terminology were based on the links between names and substances. Not only was the name given for a certain thing required to be clear and logical, it was also to reflect the thing’s inherent being or essence. In this chapter, I will show that theorists’ conceptions of the substance of the semiminim affected both their choices of terminology and their understanding of its possible rhythms and relationships to the other note values in mensural notation. This chapter builds on the work of Dorit Tanay, Gilles Rico, and Karen Desmond, where readers will find more thorough treatments of salient fourteenth-century philosophical

¹ Jan W. Herlinger, *The Lucidarium of Marchetto of Padua* (Chicago: University of Chicago Press, 1985), 102-103.

lines of thought. In the interest of clarity, a short summary of the philosophies influential to mensural theory is warranted here.²

III.1: Aristotle, Augustine, and the Nominalists

Prior to the early fourteenth century, one of the prime influences on the organization of mensural notation was Aristotle, whose classification of living things directly impacted theoretical categorizations of various aspects of music. Aristotle's hierarchy arranged living creatures according to their perfection, with plants being the lowest and man the highest; when it was later adapted by Christian theology, it became the Great Chain of Being or *scala naturae*, which was expanded to incorporate angelic beings and God above man. Music theorists used variants on this schematic to explain the different genres or notions of music (vocal, instrumental, and heavenly; monophony and polyphony; discant, copula, and organum; simple and composite; and so forth) and mensural durations, such that perfect note values were greater than imperfect ones, and so forth.³

Aristotle did not demand distinct and different names for each of his organized elements. Rather, he described in the opening of the *Categories* the principle of equivocal

² Desmond, "Behind the Mirror"; Joseph Dyer, "Speculative 'Musica' and the Medieval University of Paris," *Music & Letters* 90, no. 2 (May 1, 2009): 177–204; Lawrence Gushee, "Questions of Genre in medieval Treatises on Music," in *Gattungen der Musik in Einzeldarstellungen. Gedenkschrift Leo Schrade*, ed. Wulf Arlt, 365–433 (Munich: Francke, 1973); Gilles Rico, "Music in the Arts Faculty of Paris in the Thirteenth and Early Fourteenth Centuries" (PhD diss., University of Oxford, 2005); Tanay, "Johan de Meurs' Musical Theory and the Mathematics of the Fourteenth Century," *Tractrix* 5 (1993): 17–43; Tanay, *Noting Music, Marking Culture*; Tanay, "The Transition from the Ars Antiqua to the Ars Nova," *Musica Disciplina* 46 (1992): 79–104.

³ See Gushee, "Questions of Genre."

names, or terms that can refer to multiple things at the same time.⁴ As Jeremy Yudkin demonstrates, Aristotelian logic, terminology, deductive reasoning, and style of communication permeated the treatises of Johannes de Garlandia, Magister Lambertus, and their other Parisian colleagues, most importantly Franco.⁵

Aristotle was also a resource for those seeking to understand what things in music were measurable. The fourteenth century witnessed a great preoccupation with defining and measuring time, including things such as music that occurred and moved in time.⁶ For Aristotle, time was not mathematically quantifiable since it was immeasurable and indivisible. His theories were, to that end, not able to address the creation of different species of rhythmic durations.

Augustinian theory, however, allowed for the quantification of time, since Augustine considered time to be finite and therefore divisible. The tension between Aristotelian and

⁴ Rico, "Music in the Arts Faculty," 287.

⁵ Jeremy Yudkin, "The Influence of Aristotle on French University Music Texts," in *Music Theory and Its Sources: Antiquity and the Middle Ages*, ed. André Barbera, 173-89 (Notre Dame, Ind.: University of Notre Dame Press, 1990).

⁶ With regard to new conceptions of time, the fourteenth century witnessed a shift from variable hours to concrete time units, wherein the day was divided into twenty-four hours of fixed length regardless of season. There was an increase in the use of mechanical clocks, in particular in public spaces; Gerhard Dohrn-van Rossum points out that at least for the first two-thirds of the century, public clocks and equal hours are seen almost exclusively in Italy and both might have been invented there. Also, even into the fifteenth century, clocks were at times categorized alongside musical instruments, both for their bells or chimes and perhaps also for their association with the movement of time. A miniature from the Valencia copy of the *Roman de la Rose* (ca. 1420) clearly depicts a chamber clock hanging on a wall filled with lutes, harps, percussion, and a variety of wind instruments. Equally important to recognize is that the concept of time was intimately bound up with the study of astronomy and astrology; it was part of the *quadrivium*, along with music, geometry, and mathematics, and as such a number of the theorists and composers whose works are discussed in this dissertation, such as Johannes de Muris, John of Tewkesbury, Prosdocimo de Beldemandis, John Dunstaple, and Giorgio Anselmi, were also well versed in those very subjects which played such a crucial role in the new understanding of time.

Gerhard Dohrn-van Rossum, *History of the Hour: Clocks and Modern Temporal Orders* (Chicago: University of Chicago Press, 1996), in particular 92-93, 134.

Augustinian theories played out in mensural notation in the pre-Franconian era. The long and the breve, the two fundamental units of mensural notation, were both *qualitative*, in that they could be perfect or imperfect, and *quantitative*, in that the long was comprised of breves. The terms were also equivocal names, as the ‘long’ or the ‘breve’ could refer to multiple note lengths. Therefore, as Gilles Rico has pointed out, Franco of Cologne might have been directly inspired by Augustine in his definitions of time and measure, but by Aristotle in his connections of note shapes and names to mensural durations.⁷

By the early fourteenth century, Augustinian and Aristotelian theories had arrived at an uncomfortable truce; note values such as the long, breve, and semibreve could be considered distinct from one another, measurable, and mathematically quantifiable, but could still be subject to qualitative thinking in that each could have a number of different essences (perfect, imperfect, or altered). The treatment of mensural notation in Johannes de Muris’s treatises, therefore, relies heavily on Aristotle with regard to the quality of note values, but in Tanay’s opinion is also “revolutionarily anti-Aristotelian” with regard to quantity, since Muris believes time to be continuous and thus divisible into measurable parts.⁸

⁷ Rico, “Music in the Arts Faculty,” 281ff.

⁸ In *Notitia*, Muris states: “*Quod autem tempus possit dividi in quotlibet partes aequales, patet ex hiis. Omne continuum divisibile est in quotlibet partes eiusdem proportionis, sicut in duas vel tres vel quatuor et cetera. Tempus est de genere continuorum, ergo potest dividi in quotlibet partes aequales.*”

But that time can be divided into any number of equal parts, it is clear from this. Every continuum is divisible into any number of parts of a proportion, as into two or three or four, et cetera. Time is of the genus of continuums, therefore it can be divided into any number of equal parts.”

Tanay, *Noting Music, Marking Culture*, 57; Rico, “Music in the Arts Faculty,” 186-7, 211; see also Tanay, “The Transition from the Ars Antiqua to the Ars Nova.”

It is this tension in Muris's work that Jacobus de Liège criticizes the most because, given Muris's continued use of the system of perfection and imperfection, the terminology used to label these duration types does not differentiate between all of their possible manifestations. For example, an imperfect breve is worth two semibreves, but so is an altered semibreve. Jacobus feels that it is folly to describe one length of musical time, in this case that worth two semibreves, by more than one name. Similarly, the Aristotelian concept of equivocal names, whereby these note values could be called 'breve' or 'long' despite also being perfect, imperfect, imperfected or altered, is one with which Jacobus takes umbrage. Once again, the argument he has with Muris and the other *moderni* is about the use of proper, logical, and *unambiguous* language.

This quest for specific terminology was not contained to the theory of music, but took place in a multitude of different scholastic and theological arenas. In essence, there was a conflict between two schools of thought with regard to the connection between names and the named. The neo-Platonic tradition, which greatly influenced Augustine, argued that names were symbols of pre-existing concepts or Forms: this is a chair, that is a chair; they may not resemble each other to any great degree, but both are recognizable as a chair because of their degree of similarity to a Chair, a Form existing outside of the physical world that all other chairs resemble. But the later Nominalist tradition, which developed out of the neo-Platonic tradition, argued against these universals. Instead, the Nominalists, most particularly William of Ockham, stated that there is no such thing as a Form that exists in the universe but rather a multitude of forms that exist in the physical world. Supernatural

references and imprecision or ambiguity in terminology thus ought to be excluded at all costs, so that all language referred only to concrete and specific things.⁹

We can view the arguments against the term *semiminim* and the proposals of alternate terms, which were explored in the preceding chapter, as an outgrowth of Nominalist philosophy as it played out in music theory. Yet the desire for unambiguous language was not as simple as deciding upon a single label for each mensural duration. The proper terms for note values had to reflect what, in quality and quantity, each one was. Certain terms such as *long* and *breve* had already been used with such frequency that, despite the aspect of relativity implied by their names (longer than what? shorter than what?), the terms became codified. As the *minim* began to be used, its name reflected the fact that it was at that time the shortest duration in existence. But as the concept of time changed from something infinite to something measurable, C. Matthew Balensuela points out that “musicians did experiment with the infinitely small; the division of the *gradus* system into units smaller than a *minima* and the rhythmic complexity of the *ars subtilior* can be seen as musical investigations of the infinitely small and the division of a continuum.”¹⁰ In other words, the *semiminim* arrived at a point when the idea of dividing time into smaller and smaller units was a novelty, but the theoretical language in place to describe these new units reflected an older concept of time. The plethora of opinions about the proper term for the *semiminim* thus arose precisely because the questions of quality and quantity had not yet been answered for this note value.

⁹ Tanay, *Noting Music, Marking Culture*, 148.

¹⁰ Balensuela, *Ars cantus mensurabilis mensurata per modos iuris*, 44.

III.2: Semi-, Semus, Semis

The semiminim was in all cases considered to be smaller than the minim, but opinions diverged as to how the new unit related to the rest of the mensural durations. In the extant theoretical treatises, theorists grappled with the following questions. With regard to substance, was the semiminim a type of minim, or was it a separate, discrete unit? If the semiminim was an aspect of minim-ness, then what was its unique quality and how did it relate to the minim proper? But if the semiminim was a discrete and separately measurable unit, then how was its relationship to the other mensural note durations constructed? Was it a subdivision of the minim that needed to be separately and clearly labeled and defined? In the French *Ars Nova*, the principles of *modus*, *tempus*, and *prolation* governed each note value's relationship with one another. Should these principles be extended down one more level and apply to the relationship between the minim and the semiminim? Or instead, as its name implied, was the 'semi-' minim always worth half a minim regardless of its mensural context? Perhaps neither of these options was correct and the presence of the semiminim inspired a new system of proportional relationships. In Italian theory, did the semiminim necessitate an even smaller subset of the Italian *divisiones*, or was it incorporated into previously existing schematics?

Part of the dilemma in determining the answers to these questions was that not just the quality and quantity of the semiminim needed clarifying, but also those of the minim. If the minim were indivisible, as the previous section explored, then for many theorists smaller note values would be impermissible, at least without terminological adjustment. Some of

these theorists found that one solution to this paradox was not to rename note values but to revise the definition of the word semiminim.

In modern definitions, the semiminim is a note value worth half a minim, regardless of the minim's respective quantity or quality. By logical implication, if the semiminim is in use, then the minim can no longer be considered the minimum duration in mensural music. But to some fourteenth-century theorists, this is not the case; they exploit a philosophical loophole in terminology that allows both for an indivisible minim and for smaller note values. In other words, for some, the prefix '*semi-*' does not stem from the root '*semi-*', meaning half, but from the root '*semus*' or '*semis*', meaning imperfect or incomplete. The former implies a divisible minim, but the latter does not. This crucial distinction allows theorists to manipulate these smaller note values while still considering the minim to be indivisible.

The distinction between these two prefixes is first found in theoretical treatises with regard to the properties of the semitone.¹¹ Sarah Fuller observes that “the phenomenon of the semitone might have posed a pedagogical problem for a medieval theorist. Two core problems had to be faced: one of numerical ratio, the other of nomenclature.”¹² The numerical problem has to do with the ratios of tones produced by the division of the monochord string: the single tone, which is the difference between the ratios of the perfect

¹¹ Elizabeth Eva Leach and Sarah Fuller have both given accounts of these discussions: Leach, “Gendering the Semitone, Sexing the Leading Tone: Fourteenth-Century Music Theory and the Directed Progression,” *Music Theory Spectrum* 28 no. 1 (April 1, 2006): 1-21; Fuller, “Concerning Gendered Discourse in Medieval Music Theory: Was the Semitone ‘Gendered Feminine?’” *Music Theory Spectrum* 33 no. 1 (April 1, 2011): 65-89. The latter is a response to the former.

¹² Fuller, *Concerning Gendered Discourse*, 65b.

fifth and the perfect fourth, has the ratio of 9:8. To create a semitone by cutting this tone in two would not result in two equal halves, but one slightly larger and one slightly smaller part.¹³ Therefore, the term semitone also instigates a discussion about proper terminology.

Fuller points out that in treatises from Boethius to the fifteenth century, many theorists simply choose to explain that the term semitone should not be taken literally; instead of strictly meaning half a tone, the term should imply an incomplete or lesser tone instead.¹⁴ Unlike what we have seen in the debates surrounding the term semiminim, none of these treatises apparently desire to propose an alternate term for the semitone. Instead, they choose to explain why the semitone was still a viable term, even though at first glance its implied meaning is inaccurate. Chapter II demonstrated that with regard to rhythmic notation, the same disclaimer is never made.

The application of this discussion about prefixes to rhythmic durations might have occurred first in the pseudo-Vitryan *Ars Nova* treatises. However, the author of the portion in Rome 307-II mentions the prefix not with regard to the semiminim, but the semibreve:

“It should be noted that according to their different values, these semibreves receive different names. And so the semibreve which is worth six minims is called maior. *However, the semibreve which is worth five or four minims is called semimaior, from semis which is imperfect.* However, that which is worth three minims is called the semibrevis recta and true, although all oblique bodies in a broader sense are called semibreves. But that worth two minims is called minor, as has been said before. What is worth one is called minim. That which is half of a minim is called semiminim. Minimae and semiminimae, in order to preserve the level at which the minima is placed, can be

¹³ Conversely, one could create a more complicated proportion for the semitone by taking the difference between a major third and perfect fourth, creating the ratio of 256:243, which was not quite equal to half a tone. See Fuller, *Concerning Gendered Discourse*, 66a.

¹⁴ Fuller, *Concerning Gendered Discourse*, 66-67.

given other names, so that the minima is called the semiminor and the semiminima is called the minima. [emphasis mine]”¹⁵

The prefix semi- thus clarifies the different qualities and quantities of the semibreve in this excerpt. A major semibreve could contain six minims, a recta semibreve was worth three, and a minor semibreve two. But the semimajor semibreve is not worth half of the major, as semi- might imply, but is instead worth either four or five minims depending on mensural context. Semi- here imparts the aforementioned sense of incompleteness, not half.

Interestingly, the author does not translate this clarification of prefix to the semiminim, which is introduced immediately after. Instead, he clearly states that the semiminim is worth half of the minim. He does offer the substitute term semiminor for the minim, which could be worth either one half or one third of a semibreve; therefore, by implication but not by direct statement, the author uses multiple terms for which the prefix semi- can mean either half or incomplete.

Fourteenth-century treatises that do apply the discussion of the prefix semi- to the semiminim do so in a variety of conflicting ways. For example, in his *Summa*, Johannes Hanboys states:

“Now the minim remains in its grade as before, but its name is changed, and it is called the minor. And that which is called the minor is less than the semibreve. So the crocheta formally remains as before in its own grade, but its name is changed,

¹⁵ “*Sciendum quod secundum diuersos istarum semibreuium ualores diuersa sortiuntur nomina Vnde semibreuis que sex ualet minimas maior nuncupatur Semibreuis uero que quinque uel quatuor semimaior nuncupatur a semis quod est imperfecta imperfectum. Illa uero que tres ualet minimas recta et uera semibreuis uocatur licet omnia corpora obliqua largo modo loquendo id est de semibreuibz semibreues uocantur. Illa uero que duas ualet minimas minor uocatur ut dictum est prius. Que uero solam minima appellatur Que uero minime medietatem semiminima nominatur Minime tamen et semiminime ad gradum saluandum in quo posita fuit Minima alia nomina imponi possent ita quod minima uocetur semiminor et semiminima minima nominetur.*”

http://www.chmtl.indiana.edu/tml/14th/VITANV_MBAVB307.html; partial trans. Lefferts, *Robertus de Handlo / Johannes Hanboys*, 47 fn 120.

and it is called semiminor. *And it is called semiminor from semis, which is imperfect, because the minor is imperfected by it. [emphasis mine]*”¹⁶

The observation that the minim (minor) can be imperfected by the semiminim (semiminor) implies several things. First, the minim is subdividable (made clear in its being renamed the minor); second, if it can be imperfected, it must be subdividable into three parts; third, the semiminor must be worth a third of the minor. Elsewhere in the treatise, Hanboys explains that prolation affects the relationship between the minor and the semiminor such that a minor could be worth either two or three smaller units. In *Summa*, then, the prefix semi- meaning imperfect can refer to either quality of semiminor.

But the anonymous author of the Italian treatise *De musica mensurabili* applies the same argument to the semiminim to a different end. He states:

“Some claim to produce semiminims that are half of minims in instrumental music or in the most capricious of voices, which to me I see as being irrational in number. *And those [note values] are designated semiminims, which is derived not from ‘semis,’ which is half, but from ‘semus,’ which is imperfect, so that four equal semiminims can be produced in the time of one perfect semibreve, which is also called three equal minims.* And these things called minims can be altered or augmented, but they cannot be imperfected, unless by numbering four in place of three ... And if it is said that [the minim] can be imperfected by the semiminim, though the minim is worth two semiminims, this is not a good opinion, for no note is imperfected by two notes similar in their form, but by a third part of their value only, and so this should be avoided because the minim and the semiminim share one body and one figuration. Assuming that semiminims are divided by placing hooks on their stems, yet in division the minim is that from which it had its origin; but because of the agility of the voices in prolation, they have invented and named semiminims with respect to the different prolations and major divisions, *and the semiminim is so called not from semis which is half but from semus which is*

¹⁶ “*Nam minima manente in suo gradu ut prius, mutato nomine, minor vocatur. Et vocatur minor eo quod minor est semibrevis. Sic crocheta formaliter manente ut prius in suo gradu, nomine mutato, semiminor vocatur. Et dicitur semiminor a semis, quod est imperfectum, eo quod minorem imperfecit.*”

imperfect. However, to the simple minim all divisions can be reduced to perfection, each in its own number ... [emphasis mine]”¹⁷

Here the term semiminim is used in two different ways. In the first portion of the quote, the author says that the prefix semi- implies an imperfect value. As a result, four equal semiminims replace three minims or a perfect semibreve, because minims cannot be imperfected (or, by extent, subdivided) except by this specific proportion. However, later in the treatise, the author says that “some others” have used the term semiminim for units apparently worth half of a minim. The author does not agree with this subdivision, or at least does not agree with those who say that a binary value can be imperfected.

Whereas in Hanboys the semiminim is a discrete unit with specific quantities and qualities, here the semiminim is a proportional unit, four of which are used to create *sesquitercia* in place of three minims. The semiminim cannot be used outside of this specific ratio, and therefore cannot be used as a single independent figure but only in these groups of four. This interpretation of semi- as imperfect thus allows the minim to remain indivisible but still permits the usage of smaller note values within certain contexts.

¹⁷ “Nonnulli asserunt promere semiminimas dimidias minimas in instrumentis siue in leuissimis uocibus quod mihi uidetur inrationabile in numero Et si semiminime dicantur non a semis quod est dimidium sed a semus quod est imperfectus deriuentur, verum potius promere quatuor semiminimas aequales pro semibreui perfecta in motu, quam tres minimae dicantur. Si quatuor, quaelibet parum est festinantior, et referuntur ad binarium numerum, videlicet ad duas semibreves imperfectas aequaliter prolatas, et tantum prolixiores sicut tres et duae tenerent eundem motum. Et etiam dictae minimae recipiunt augmentum alterationis; sed non possunt imperfecti, nisi numerando quaternario numero pro ternario ... Et si dicitur quod imperficiatur a semiminima, quia minima valet duas semiminimas, non est bona opinio ratio, quia nulla nota imperficitur a duabus notis similibus suis formulis sed a tertia parte sui valoris tantum, et sic evitandum est quia minima et semiminima unum corpus, unam figurationem habent. Posito quod semiminima sit aliquantulum divisa in capite ad modum hami, tamen minima est in divisione unde habet originem suum; sed propter agilitatem vocis prolationes inventae fuerunt et nuncupantur semiminimae respective ad differentiam prolationum et divisionum maiorum, et dicitur semiminima non a semis quod sit dimidium, sed a semus quod est imperfectum. Tamen per simplicem minimam omnes divisiones reducuntur ad perfectionem, quaelibet in numero suo.”

Lastly, the treatise *De musica mensurata* presents the prefix in a much more restrictive way. Rather than claiming that semi- meant imperfect or incomplete, as the other theorists had done with regard to the semitone, semibreve, and semiminim, the author states that the prefix always means half:

“[The term] *semibreve* is named from *semis*, which is half, and *breve*. The minim is named minim because it is the smallest material of concern, namely prolation. The *semiminim* is named from *semis*, which is half, and *minim*. Another semibreve is called an altered semibreve, [since] it is duplicated. The Greek or Hebrew *fusi* likewise is that which is a Latin *fusa* and is therefore called *fusi*, because it has the disposition of a *fusa*. The *semifusielis* is named from *semis*, which is half, and *fusi*, as though half a *fusi*. The *semifusiel* semi is named, as though half a *fusi* and is called semi twice for this reason, because the first semi is shown with one hook, but the second semi is shown with two hooks. When then do the *semifusielis* and the *semifusielis* semi have hooks? The reason is, because they are equipollent with semiminims, but they diversify prolations and [are used] in mixed song. [emphasis mine]”¹⁸

The semibreve is thus always half of a breve and the semiminim half of a minim. Among the new note values here described (which I will discuss further in Chapter V), the *semifusiel* and the *semifusiel semi*, here equated to a semiminim in different prolations, are both half of a *fusi*. The cautionary language surrounding the semitone in tonal theory is borrowed, perhaps by the author of this treatise or by one of his unknown predecessors, in order to demonstrate binary divisions of note values in early fourteenth-century notation.

For Hanboys, understanding the semiminim as an incomplete minim allowed him to apply the term to two different durations governed by the concepts of perfection and

¹⁸ “*Semibrevis dicitur a semis, quod est dimidium, et brevis. Minima dicitur ideo minima, quia minimam materiam concernit, scilicet prolationem. Semiminima dicitur a semis, quod est dimidium et minima. Semibrevis altera dicitur, quasi semibrevis alterata, id est duplicata. Fusiis graece vel hebraice idem est quod fusa latine et dicitur ideo fusiis, quia habet dispositionem fusae. Semifusiis dicitur a semis, quod est dimidium et fusiis, quasi dimidium fusiis. Semifusiis semi dicitur, quasi dimidium fusiis et dicitur bis semi ea de causa, quia primum semi designat unum uncum, sed bis semi designat duos uncus. Quare autem semifusiis et semifusiis semi habent uncus, ratio est, quia aequipollent semiminimis, sed diversificant prolationem utque in cantibus mixtis.*”

imperfection. *De musica mensurata*, however, used the prefix to firmly define the semiminim as a binary division of the minim. In both cases, the semiminim was a discrete, independent note value that was a subdivision of the minim. But for the anonymous *De musica mensurabili*, the author interpreted the prefix semi- to use groups of proportional smaller note values to replace an indivisible minim. As I will now show, these two definitions – the semiminim as a subdivision and the semiminim as a proportion – developed out of different theoretical backgrounds and found favor in different geographical areas.

III.2.1: The Discrete Semiminim

Theorists sharing the opinions of Hanboys and the anonymous *De musica mensurata* consider the note value to be an active participant in mensural notation: it could perfect the minim and imperfect other note values, it is used as an individual unit, and in some circumstances its relationship to the minim is governed by perfection or prolation. The discrete semiminim is a subdivision of the minim, and the language used to describe this relationship specifically relates individual quantities: this note is *divided* or *subdivided* (*dividitur*, *subdividitur*, *medietatem*) into these others, some of these are *worth* (*valet*, *valent*) one of those, two of these *add up to* (*computantur*) one of those, one of these *contains* (*continet*) a certain number of those, and so forth.

All of the earliest treatises to both name the unit and describe its duration also share this opinion. The Rome 307-II and Paris 7378A portions of the *Ars Nova* complex, the former *Ars Nova* associate *Cum de mensurabili musica* in London 21455, and *Compendiolum artis veteris ac novae* were all likely written by the mid-1320s and share probable French origin. Each

defines the unit they call semiminim as the note value worth half a minim, regardless of its mensural context.

As mensural theory developed through the mid-fourteenth century, though, it was frequently proposed in some areas that the relationship between the minim and the semiminim should be decided by the gradus system, organized according to the concepts of perfection and imperfection or tempus and prolation. The first such definitions of the semiminim clearly reflect attempts by theorists to rationalize this new type of mensural organization. For example, the ninth portion of the treatise referred to by Coussemaker as *Ars discantus*, which he attributed to Johannes de Muris, mentions the semiminim only once:

“There are two kinds of imperfect notes: directly imperfect and remotely imperfect. Direct imperfection is as the long is by the breve, the breve by the semibreve, the semibreve by the minim, the minim by the semiminim, and in general all whole units by a third of their parts.”¹⁹

The author of the treatise is referring to the system of perfection and imperfection; imperfection is defined as losing one-third of the whole, while perfecting an imperfect note through the use of a punctus adds one-half of the imperfect note’s value. The semiminim is only mentioned here because of its ability to imperfect the minim, just as the minim can imperfect the semibreve, the semibreve the breve, and so forth. While the semiminim is not specifically defined, it must follow that the semiminim is worth a third part of the minim. Tempus and prolation are not mentioned here, but this author clearly thinks of the

¹⁹ “*Duplex est imperfectum, mediatum et immediatum. Immediatum ut longa per brevem, brevis per semibreve, semibrevis per minimam, minima per semiminimam, et generaliter omne totum per tertiam sui partem.*”

semiminim as a discrete and independent unit with a specific relationship, in this case 3:1, with the minim.

The contemporaneous *Declaratio trianguli et scuti* also presents a minim that is subdivided into three equal semiminims, called simplas. The text does not describe the durations of any mensural note values; instead, Johannes Torkesey instructs his readers on how to determine the lengths of note values in relationship to others, all of which are hierarchically arranged on a shield (the *scuti* in the title). As Appendix B shows, the indivisible simpla is the unit by which all other units are measured. The next largest note value, the minim, is worth either two or three simplas. Torkesey does not mention the system of tempus and prolation that was in use in the areas following Murisian practice, but instead refers to note values as either perfect or imperfect; the minim worth three simplas is perfect, that worth two simplas imperfect.

Three later English treatises, drawing heavily on Torkesey's theory, also describe a minim that can contain either two or three equal smaller note values. In his *Breviarum*, written at some point prior to 1372, the theorist Willelmus relates the same basic organizational principles, in that perfect notes are subdivided into three and imperfect ones into two. Willelmus expands upon Torkesey's shield by adding a new largest note, the *largissima*, but the overall structure is the same: the minim, here called the minuta, can be divided into either two or three simplas.

Johannes Hanboys also describes perfect and imperfect note values in great detail. *Summa* is filled with dozens of examples of different types of imperfection, all of which imply ternary note values since to imperfect is to lose the third part of one's whole value.

But whereas Willelmus only generally referred to the binary subdivision of imperfect note values, Hanboys specifically describes how certain imperfect note values, including the semiminor, can be divided into two equal parts. The minim, called minor, could thus be divided into either two or three equal semiminors, each of which could also be subdivided into two or three equal minims.²⁰

Recensio B of the *Libellus cantus mensurabilis* does not specifically define the duration of the semiminim, but its discussion of diminution implies that the minim is subdividable into either two or three equal parts.²¹ Diminution in this treatise is said to occur most often in motet tenors when a larger note is replaced by the next smallest: the long by the breve, the breve by the semibreve, the semibreve by the minim, and the minim by the semiminim. Muris presents three rules about the ways this replacement can occur. In imperfect mode, regardless of tempus, or in perfect mode and imperfect tempus, all notes are diminished by half. But if both mode and tempus are perfect, then diminution is made to one third.²² Given that the semiminim can replace the minim, it is therefore possible that, depending on the

²⁰ See Appendix B.

²¹ For more on diminution, see Chapter V.

²² “*Sequitur de diminutione, que sepe in tenoribus motetorum ponitur. Circa quam notandum est primo, quod pro maxime diminutione ponitur longa, pro longa brevis, pro brevi semibrevis, pro semibrevis minima, pro minima semiminima. Secundo nota, quod quando tenor est de modo imperfecto, sive fuerit de tempore perfecto vel imperfecto, diminutio fit directe per medietatem notarum et pausarum. Tertio nota, quod quando tenor est de modo perfecto et tempore imperfecto, diminutio etiam fit per medietatem, sicuti pro longa valente tres breves ponitur brevis valens tres semibreves. Quarto nota, quod quando tenor est de modo perfecto et tempore perfecto, diminutio fit per tertium et non per medium. Et hec de diminutione dicta sufficiant.*”

http://www.chmtl.indiana.edu/tml/14th/MURARSPB_TEXT.html

For further clarification on diminution to one third, see the seminal article by Anna Maria Busse Berger: “The Myth of Diminutio Per Tertiam Partem,” *The Journal of Musicology* 8, no. 3 (July 1, 1990): 398-426.

mensural context, the minim could be divided either into two or three semiminims.

However, motet tenors generally were comprised of note values larger than the minim, and Muris only mentions mode and tempus, not prolation, so it is possible that he did not have any sort of subdivision of the minim in mind when he laid out these rules for diminution.

There is one other treatise that specifically describes both a binary and ternary subdivision of the minim: the anonymous *Tractatulus de cantu mensurali seu figurativo musice artis*, dating from the last third of the fourteenth century and found in the Austrian town of Melk. Unlike the preceding treatises, the concepts of tempus and prolation specifically govern the relationships between note values here. The author states:

“The minim is formed as such: ♫

And in major prolation it is worth three semiminims, but in minor prolation it is worth two semiminims.

The semiminim is formed as such: ♪

but according to the moderns, as such: ♪

And in all prolations, modes, and tempore, two make one minim.

The fusiel is formed as such: ♪

And just as a minim in minor prolation is worth two semiminims, so the fusiel in major prolation is that which is worth three semiminims.

The semifusiel is formed as such: ♪

Therefore it is shown, as has been made clear from the preceding, that the largissima and the duplex long (are comprised of) simple longs, simple longs of breves, breves of semibreves, semibreves of minims, minims of semiminims, and two semiminims in major prolation, mode, and tempus make one minim.”²³

²³ “Minima sic formatur:

Hec in prolacione maiori valet tres semiminimas, in prolacione vero minori valet duas semiminimas.

Semiminima sic formatur:

vel secundum modernos sic:

Et in omni prolacione, modo et tempore due faciunt unam minimam.

Fusiel vero sic formatur:

Hec sicut se habet minima in minori prolacione, videlicet quod valet duas semiminimas, sic se habet fusiel in maiori prolacione, id est quod valet tres semiminimas.

Semifusiel sic formatur:

According to this author's traditional practice, prolation determines whether the minim was worth two or three semiminims. But in his description of modern style, one minim is always worth two semiminims, regardless of mode, tempus, or prolation. This stands in direct contrast with the other treatises, all English, that refer to note values as either perfect or imperfect and thus binarily or ternarily divisible.

What is interesting about this author's statement is that he calls the always-binary minim a modern creation. However, as I have already shown, all of the early descriptions of a semiminim with a specific duration define it as equal to half a minim. In fact, from those earliest references through the end of the fourteenth century, numerous treatises depict the semiminim as a binary subdivision of the minim regardless of prolation.

The anonymous *Regule Magistri Johannes de Muris* might be the earliest English treatise to mention the semiminim, here called the simpla; given its reliance on the works of Muris, it might have been written as early as 1321, but its contents date it more plausibly to the 1340s or later. Like Hanboys, the author describes hierarchies of perfect and imperfect note values, but here, regardless of whether the minim is a subdivision of a perfect or imperfect note, it can only be subdivided itself into two simplas.²⁴

Resolvitur igitur, ut ex precedentibus iam patet, largissima atque duplex longa in longas simplices, simplex longa in breves, brevis in semibreves, semibrevis in minimas, minima in semiminimas, et due semiminime in maiori prolatione modo et tempore faciunt unam minimam."

http://www.chmtl.indiana.edu/tml/14th/ANOTRA_TEXT.html

²⁴ "*Semibrevis perfecta est que continet in se tres minimas vel sex simplas ... Semibrevis imperfecta est que continet in se duas minimas vel quatuor simplas ...*"

http://www.chmtl.indiana.edu/tml/14th/MURREG_MLBLL763.html

The author of *In arte motetorum*, the third section of the aforementioned *Ars discantus*, states repeatedly and emphatically that the minim can only ever be divided into two equal semiminims regardless of prolation. In fact, he begins specifically by describing the two prolations found in mensural music:

“In the art of motets or discant, there are two prolations, namely perfect and imperfect, major and minor; perfect major prolation in all figures is numbered by three figures, except the minim, for example: the duplex longa is worth three longs, nine tempora or twenty-eight semibreves. A long is worth three breves, which is three tempora, or nine semibreves or twenty-seven minims. The breve [is worth] three semibreves, which is one tempus, or nine minims or eighteen semiminims. The semibreve [is worth] three minims, which is the third part of tempus, or six semiminims, and the minim cannot be subdivided except into two semiminims.”²⁵

The author specifies twice that the minim cannot be subdivided into three parts in any situation; regardless of mensuration, it can only ever contain two equal semiminims.

Three other late fourteenth-century French treatises also refer to a binary minim. The second treatise in the Berkeley manuscript states that two semiminims are equal to one minim, as does the contemporary *De semibrevis caudatis*. Lastly, in Chapter II I mentioned that the anonymous *De minimis notulis* uses the term *minime semiminimarum* for the note value worth half a minim.

Several Italian treatises contain similar references. The first Italian treatise to use the term semiminim, and in fact to give any name to this smaller duration, is the later fourteenth-century *Tractatus figurarum*, which might have been written by composer

²⁵ “*In arte motetorum sive discantium sunt due prolationes, scilicet perfecta et imperfecta, major et minor; perfecta prolatio majoris in omnibus figuris numeratur per tres figuras, preter in minima, verbi gratia: duplex longa valet tres longas, novem tempora vel XXVIII semibreves. Longa, tres breves, id est tria tempora, vel IX semibreves vel XXVII minims. Brevis, tres semibreves, id est unum tempus, vel IX minims vel XVIII semiminims. Semibrevis tres minims, id est tertiam partem temporis, vel sex semiminims, et minima non valet nisi duas semiminims.*”

Philippotus de Caserta. In this treatise, the author considers the semiminim to be the foundation of mensural music: “and first I wish to speak of the semiminim, without which nothing in music would be made ... and two of these are worth one minim.”²⁶ Its accompanying gloss, *Tractatulus de figuris et temporibus*, describes several note values that have a duple relationship with the minim. In the French style, eight unnamed units can be placed for one breve of imperfect tempus and minor prolation, worth four minims; in the Italian style, two void minims can be placed for one minim in all mensurations, and eight of another unnamed note value can be used in the place of four minims. *De arte cantus*, authored by Johannes Pipudi and found twice in the Seville 5.2.25 manuscript, states that two seminas are placed for one minim. Lastly, the anonymous *Ars cantus mensurabilis per modos iuris* also reports that four semiminims can be placed in the time of two minims.

The statement in the anonymous *Tractatulus de cantu mensurali seu figurativo musice artis* that an always-binary minim is a more modern tradition is therefore questionable, if other extant theoretical literature is taken into account. That the semiminim could be equal to half a minim, or that two semiminims could replace one minim, was apparently known in France from the semiminim’s inception, in England from the 1340s if not earlier, and in Italy toward the 1370s. But the Melk author also opines that the application of prolation to the relationship between the minim and the semiminim was an older, though perhaps still practiced, tradition; it certainly was part of English practice throughout the fourteenth

²⁶ “*Et primo volo dicere de semiminima quia sine ipsa factum est nichil in musica ... et due istarum valent unam minimam.*”

century. Regardless of the accuracy of this author's chronology, the semiminim is clearly defined as a discrete, independent, individual note value.

This idea of a discrete semiminim apparently developed out of Murisian theory in two specific ways. The extension of the gradus system downward to include both a binary and ternary minim was exceedingly common in England but also found some favor in some central European sources and possibly also in Recensio B of the *Libellus*, the only one of the potentially Murisian treatises to mention this new unit. But in all other French and central European treatises, the semiminim was a binary subdivision of the minim. Those Italian treatises to which I referred in this section mention the semiminim in a duple relationship with the minim, but these were considered to be proportional relationships. The proportional semiminim was, as I will show in the next section, an exclusively Italian phenomenon.

III.2.2: The Proportional Semiminim

The proportional semiminim could only be used in groups to replace one or more larger note values according to predetermined rules; a passive role that denied the semiminim any agency in mensural notation. As such, the language used in these descriptions often describes one group being *placed* (*ponuntur*) for or used in the time of another note value or group, as expressed in *De musica mensurabili*.

This conception of the semiminim developed later in the fourteenth century, growing out of the earlier Italian notational system as described by Marchetto and the anonymous *Rubricae breves*; both mention the possibility of note values smaller than a minim,

yet as I showed in Chapter II, neither treatise names them or provides their readers with a well-defined mensural context. The second half of the anonymous treatise *De diversis manieribus*, which dates to the 1330s, offers only slightly more information. The author lists four different prolations (here referring to types of mensural organization and not to the subdivision of the semibreve as found in Murisian theory); in all but one, smaller unnamed units are mentioned.²⁷ In major or minor mode and perfect tempus, three minims could be divided into four unequal parts, but in major mode and imperfect tempus, six minims could be divided into twelve unequal ones.

The division of groups of minims into smaller note values in this passage is internally inconsistent. The first and third prolation substitute four unequal, unnamed units for three minims; in typical Italian style, the first two would be the shortest, replacing one minim, and the remaining two would be minims. Yet the second prolation clearly asks for twelve unequal smaller units in place of six minims. Either the author is incorrect and the twelve are equally placed such that two replace one minim, or each minim is actually ternary and the smaller units comprise two-thirds and one-third of a minim respectively. This latter division, however, is not found anywhere in the largely binary Italian mensural system. In fact, the author does not present these rhythms as subdivisions of individual note values at all. Rather, his description is of *groups* of note values, here minims, being replaced by *groups* of smaller note values, in the manner of proportional relationships.

In all fourteenth-century discussions of proportional note values, the units involved are always equally placed. The duple relationship implied in the *De diversis manieribus*, as well

²⁷ See this document, pages 81-82 for the full quotation;
http://www.chmtl.indiana.edu/tml/14th/ANO7DED_TEXT.html

as the sesquitertia (4:3) and *sesquialtera* (3:2) proportions, are frequently described. The discussion of duple relationships is complicated because the concept of a duple proportion must be clearly distinguished from the idea of a binary subdivision. A note value that is subdivided in half creates two smaller note values that then can be used independently and individually; for example, a *punctus additionis* could be applied to a minim which is then followed by a single semiminim. But a duple proportion means that the two units that replace the larger one are only permissible as a group and can only be used in this restricted context. The early treatises *Cum de mensurabili musica* and *Compendiolum artis veteris ac novae*, for example, are considered above to discuss a discrete semiminim because they clearly reference it as a subdivision of the minim. Yet the authors also state that the semiminim can never be used unequally (“*non possunt poni impares*”), which implies that it was not yet able to act independently and individually, but only as a group of two that replaces the minim.²⁸ These two presentations of the semiminim could also thus be considered proto-proportional since they treat the semiminim in groups of two.

Later treatises are clearer as to whether they refer to a subdivision or to a proportion. *Tractatulus de figuris et temporibus* explicitly states that in the Italian style, groups of four semiminims replace three minims. Another Italian note value, likely also considered a semiminim, is in a duple relationship with the minim, eight being used in the place of four:

*“Et de istis semiminimis valent tres pro duabus minimis:
Et de istis valent octo pro quatuor:*

²⁸ http://www.chmtl.indiana.edu/tml/14th/ANOMM_MLBI.2145.html;
http://www.chmtl.indiana.edu/tml/14th/ANO3COMP_MPBN1512.html

And of these semiminims, they are worth three for two minims: ♪

And of these, they are worth eight for four: ♪²⁹

In both cases, it is apparent that the author is speaking of proportional relationships, given that groups of one note value are replacing groups of another note value.

The author also lists note values in the French style. Each of the four French mensurations is described according to its hierarchy of breves, semibreves, and minims. The author then discusses the possibilities for augmentation, or dividing the breve into other proportional relationships outside the boundaries of normal mensuration. Despite describing French practices, the Italian author still couches these augmented relationships in terms of proportions and not subdivisions. The *minima vacua*, or voided minim, is described as the note value that creates myriad proportional relationships with the normal blackened minim. In all four French mensurations it can create a duple relationship, but in imperfect tempus and perfect prolation it can also be used in sesquitercia or triple proportions; in imperfect tempus and imperfect prolation it can create sesquialtera or *dupla sesquiquarta* (here called *duplasesquiquarta*, 9:4); and in perfect tempus and imperfect prolation it can also be used in sesquialtera. Another unnamed note value also creates a duple relationship with the minim in imperfect tempus and imperfect prolation, but the description of this note value is such that eight of them are placed for one tempus. In all cases, it appears that this author describes relationships between breves or minims and a variety of smaller note values as proportions.

Ars cantus mensurabilis mensurata per modos iuris was mentioned above for describing a duple relationship between minims and semiminims; the composer Nicholas de Aversa

²⁹ http://www.chmtl.indiana.edu/tml/14th/ANOFIT_TEXT.html

used four semiminims in place of two minims, yet this description is of a duple proportion, not a subdivided minim.³⁰ The same applies to Pipudi's treatise, which states that the two seminas are placed (*ponunt*) for one minim. *Notitia del valore* allowed the semiminim to be used in a duple or sesquialtera proportion with the minim, while *L'arte biscanto misurato* adds the sesquitertia proportion to these two. *De musica mensurabili* specifies both duple and sesquitertia proportions. *Musice compilatio* mentions duple, sesquitertia, and sesquialtera proportions, and the last is presented as both three in the time of two and six in the time of four. Here, the author goes so far as to specify which of the divisiones each proportion is suited to: duple and sesquialtera are used in quaternaria, sesquialtera in modo perfecto minori, and sesquitertia in senaria imperfecta.

A few non-Italian treatises mention similar proportional notation, but it is important to note again that in these cases, different terminology is employed. These treatises define the semiminim as a discrete unit and select other labels for proportional units. *Compendium totius artis motetorum* refers to the minimis additis as that which creates the sesquitertia proportion with the minim, while the second portion of the Berkeley manuscript calls these note values additae.

In his 1908 article, Johannes Wolf proposed that the *Compendium totius artis motetorum* should be dated to c. 1340; this date remains fixed in scholarly literature, in part because RISM dates its sole manuscript source, Erfurt Ca.8° 94, to c. 1350. While these dates are appropriate for a discussion of semiminims and other note values mentioned in the treatise,

³⁰ "Ponit etiam dictus Frater Nicholaus de Aversa, Ordinis Celestinorum, semiminimas, quarum quatuor ponit pro duabus ..."

the sesquitertia minimis additis listed here is not found in any other theoretical source for several decades yet. The first source to mention sesquitertia proportions aside from the *Compendium* is the *Tractatus figurarum*, dating to the 1370s. Additae or additas are not named until the 1370s either; they are found in the second Berkeley treatise and Johannes Pipudi's *De arte cantus*. I can therefore tentatively propose redating both the *Compendium totius artis motetorum* and the third section of the manuscript Erfurt Ca.8° 94 closer to c. 1370.³¹

III.3: Anomalies

Thus far, I have demonstrated that the following basic conventions held throughout the fourteenth century with regard to the duration and substance of the semiminim. First, as highlighted in the earlier discussion about the meaning of the prefix semi-, the semiminim was either thought to be a discrete, individual, active note value or a passive proportional figure used only in groups. If proportional, the semiminim groups could be in duple, sesquitertia, or sesquialtera proportion with the minim; this is an exclusively Italian phenomenon. But if discrete, the semiminim could either be always worth half a minim or it could be either one half or one third of a minim. Non-Italian theorists used one of these two definitions and if they mentioned other proportional units were mentioned, these were always given different names.

There are five treatises that contain discussions of the semiminim in breach of this overarching pattern. The French treatise *De minimis notulis* follows the pattern for non-Italian

³¹ I would like to thank Anna Zayaruznaya, Jason Stoessel, and other members of the 'Ars Nova' discussion group on Facebook for conversations on this treatise earlier this year.

treatises insofar as it uses two different terms for the unit it describes as proportional and the unit it describes as being worth half a minim. The author chooses the term *minime semiminimarum* to describe the latter subdivision and retains the term *semiminim* to describe the sesquitertia proportion, therefore apparently breaking the pattern. Yet the presentation of these two terms is anything but straightforward. The author states:

“... it should be noted that there are certain notes called *semiminims*; and these are similar to minims in form, except that they have a tail above them [like a flag] reacting in the manner of wind, like here: ♯ and for the most part, *these are placed in major prolation, and so four of them are worth one semibreve*.

Thirdly, it should be noted that there are still others invented similar to the already-mentioned *semiminims* in form, but that add stems found on both the upper part and the lower; and these are called by some *minime semiminimarum*, that is the aforesaid, like these: ♯ and these are also frequently placed in major prolation, so that six are counted for one semibreve, and two are worth one minim, four for two, and six for three, which makes a semibreve in this prolation. [emphasis mine]”³²

Here, the *semiminim* is clearly used in groups of four in sesquitertia proportion with the minim, but the *minima semiminimarum* is worth half a minim, though described in groups replacing minims or semibreves. Immediately after this description, the author confuses his terminology. In a puzzling attempt to explain how to maintain mensural structure while using smaller note values, he now uses the term *semiminim* in the same way he just used the term *minima semiminimarum*:

³² “Secundo notandum quod quedam notule nuncupantur *semiminime*; et he sunt similes minimis in forma, nisi quod habent caudam a supra reverberatam ad modum venti, ut hic, et plerumque ponuntur in prolatione majori; et tunc quatuor earumdem notularum valebunt unicam semibreve.

Tertio notandum quod adhuc alie inveniuntur *semiminime* similes jam dictis in forma, hoc addito quod caudate sunt tam a superiori parte quam inferiori; et he a quibusdam nuncupantur *minime semiminimarum*, scilicet antedictarum, ut sunt he, et iste etiam sepius ponuntur in majori prolatione, et harum sex pro una semibreve reputantur; due vero unam valent minimam; quatuor duas; sex tres, que faciunt semibreve in hac prolatione.”

“It should be noted that frequently two of these notes are found alone; then it must be that one or two minims must precede or follow the two, or that one minim precedes and another follows, as here, or it must be that if only one minim precedes or follows, then again two other *semiminims* are found, as here. And so all of these at the same time are calculated to equal the value of one semibreve, as has been shown. [emphasis mine]”³³

Later in the treatise, he again refers to the semiminim as being equal to half a minim:

“... and also it is clear that such a song is considered subtle when all of the individual notes, with no exception, are *cut in half*, so that when a long is placed, there a breve is sung ... and *where a minim, the semiminim must be sung* ... And such a style of singing is called by musicians ‘diminutio’ *because each note is diminished by half of its individual value* ... [emphasis mine]”³⁴

Lastly, the author once again mentions the minima semiminimarum, but here it seems that he has now reversed his earlier definitions and this note value is now the one that creates a sesquitercia proportion with the minim:

“And it should be noted that if in song such a diminution is found of the [note which has] stems above and below, then the *minima semiminimarum* is to be sung for it, which is mentioned above, for if this is as follows: ♪ then let us sing the following: ♪ in diminution. [emphasis mine]”³⁵

³³ “*Et notandum quod sepe talium notularum due reperiuntur sole; tunc oportet quod vel minima una precedat vel post cedat vel due, vel quod una minimarum precedat et altera post cedat, ut sic: vel sic: vel sic: vel sic: vel oportet si tantum una minima precedit vel sequitur, quod iterato alie semiminime due replicentur, ut sic. Et his simul computatis surgit valor unius semibrevis, ut patet considerari.*”


http://www.chmtl.indiana.edu/tml/15th/ANO10DEM_TEXT.html

³⁴ “... *sed patet ut talis cantus subtilius consideretur dimidiando singulas notulas nulla excepta, sic videlicet ut ubi ponatur longa, ibi cantetur brevis; ubi vero ponitur brevis, cantanda est semibrevis; ubi autem semibrevis, notetur minima, et ubi minima, ibi oportet cantari semiminima. Hoc idem intelligendum de colligatis primis, mediis et ultimis. Et talis modus cantandi a musicis vocatur diminutio eo quod unaqueque notularum pro medietate diminuitur a suo debito valore ...*”

http://www.chmtl.indiana.edu/tml/15th/ANO10DEM_TEXT.html

³⁵ “*Et est notandum si in cantu tali diminutio reperiatur sursum et deorsum virgulata, talis cantari debet pro minima semiminimarum de quibus supra dictum est, ut si fuerit talis, cantetur pro tali, per diminutionem.*”

http://www.chmtl.indiana.edu/tml/15th/ANO10DEM_TEXT.html

The note value shaped as  is not named by this author, but two are to be placed for a semibreve in major prolation, thus creating a *subsesquialtera* proportion, or two in the time of three, with the minim.³⁶ When this note is diminished, or cut in half, it is replaced with the *minima semiminimarum*, meaning that four of these are used for three minims.

It is apparent that this author's use of the terms *semiminim* and *minime semiminimarum* is not at all uniform. At first his definitions deviate from the aforementioned schema, yet when he exchanges the two terms later in the treatise, they actually match the pattern exactly. Also, despite his occasional reference to these small note values as proportions, he also declares them to be subdivisions of the minim. Given the internal inconsistency of these two definitions, then, it would be remiss to point to this treatise as a definite anomaly, but it can be viewed as evidence of potential Italian influence upon French theory.

The second treatise found in the Berkeley manuscript describes the *semiminim* in a duple relationship with the minim, as I mentioned earlier. The author relates this information by stating that “two [*semiminims*] are *placed* for one minim [emphasis mine].” The verb used here by this author, *ponuntur*, is in all other cases found either only in Italian manuscripts or found in non-Italian manuscripts to refer only to proportional relationships. Yet here, a group of two *semiminims* is placed (*ponuntur*) for one minim, just as slightly earlier in the treatise four *additae* are placed (*ponuntur*) for three minims in *sesquitercia*

³⁶ This note value is often referred to in fourteenth-century treatises, beginning as early as the *Ars Nova* complex; it is labeled *dragma* or *tragma* as well as *fusiel*, *fusa*, *fusée*, *fuselle*, or *fuscee*; it will be discussed further in Chapter V.

proportion.³⁷ Unlike *De minimis notulis*, this author never declares the semiminim to be a subdivision of the minim. Is it possible that this treatise is subtly referencing Italian practice?

Little in Oliver Ellsworth's critical edition concretely links the first three related treatises in the Berkeley manuscript to French authorship, nor does he make any claim of provenance; in fact, the *New Grove* entry for this manuscript³⁸ refers to it as French, yet redirects the reader to a more thorough description of the treatises that specifies no provenance.³⁹ The only evidence that implies French authorship is a spurious later attribution to one "Goscalcus *francigenus*" and the fact that the second and third treatises rely heavily on works (possibly) by Muris.⁴⁰ Yet the attribution to Goscalcus is not found in the earliest contemporaneous transmission of the treatises, and the *Libellus* was widely dispersed to and read by theorists across Europe. Klaus-Jürgen Sachs proposed that the author Goscalcus might be identified with the composer Goscalch, known for the composition *En nul estat* in the Chantilly codex, since both the treatise and the ballade make use of the same rare mensuration signs.⁴¹ The papal chapel at Avignon was patron to many of the composers

³⁷ "Preterea licet proporcionabiliter omnis cantus posset dictis 5 figuris figurari, seu notulis notari, eas colorando diversimode et intellectualiter dividendo; tamen inventi sunt infrascripti modi figurarum: quarum 4 communiter ponuntur pro tribus minimis, et vocantur addite ...
Item inventi sunt hii modi figurarum: vel isti: quarum due ponuntur pro una minima, et sunt a musicis semiminime appellate.

http://www.chmtl.indiana.edu/tml/14th/BERMAN_TEXT.html

³⁸ "Berkeley Manuscript," *New Grove*,
<http://www.oxfordmusiconline.com/subscriber/article/grove/music/53344> (accessed March 3, 2012).

³⁹ Balensuela, "Anonymous theoretical writings."

⁴⁰ Ellsworth, *The Berkeley Manuscript*, 13-15.

⁴¹ Klaus-Jürgen Sachs, *Der Contrapunctus im 14. [i. E. Vierzehnten] und 15. Jahrhundert: Untersuchungen zum Terminus, Z. Lehre U. zu D. Quellen.* (Wiesbaden: Steiner, 1974), 184.

represented in the Chantilly codex, and the confluence of French and Italian styles there could have influenced theoretical discourse. If Goscalculus and Goscalch were the same person, and if he worked in Avignon, then his description of the semiminim as proportional may reflect a Frenchman's absorption of Italian practice or possibly even Italian descent. Given the tenuousness of these suppositions, though, this treatise must temporarily at least be viewed as anomalous; I will discuss it further in Chapters IV and V.

There are three Italian treatises that also appear to deviate from the pattern. The anonymous *Ars cantus mensurabilis mensurata per modos iuris* describes semiminims having been used in groups of four to replace two minims, implying a duple proportion. The author also describes using figures called imperfect minims to create the sesquitertia proportion with the minim. In typical Italian terminology, the term semiminim is applied to all proportional figures, regardless of duration, but in the manner of non-Italian treatises, this author puts forth a different term for the sesquitertia proportion.

Yet both of the author's descriptions of small note values are very clearly not his own. The semiminim was reported to have been used in this manner by the otherwise unknown composer Nicholaus de Aversa; the author is simply reporting this fact, not offering a definition for or recommendation of the semiminim. In the case of the imperfect minims, the author states:

“It is therefore asked: Why are red semibreves tailed on both sides? I say that they are semibreves of imperfect minor. When four minimae are placed for three, they are composed of imperfect minimae; likewise, these are composed of imperfect minimae, and there is therefore no difference in value. Just as the minimae in imperfect tempus of minor prolation reduplicated are placed four for three, so also

these are placed three for two. The variety only attends to prolation because either one or the other is a matter of pronunciation.”⁴²

Imperfect minims, therefore, are those that can be placed in a sesquitertia proportion to the minim. But immediately afterward, the author makes it abundantly clear that he disagrees with the use of both the semiminim and the imperfect minim:

“But in truth, according to art, not only is the semiminima not given, neither is the imperfect minima. If the imperfect minima must not be given, as we saw earlier, the consequent also holds for the semiminima, because when arguing distributively from the greater to the lesser, there is good consequent. The assumption is proven because nothing is given beyond the least, as shown by anything with the name ‘least.’”⁴³

It is apparent, then, that this author is relating notational practices that others are using and with which he does not agree.

The composer Frater Nicholaus de Aversa, cited for his use of the semiminim, was apparently a member of the Celestine Order, a Benedictine branch known to follow Pope Clement V.⁴⁴ It is likely that he was an Italian composer, given that Aversa is the name of a small town just north of Naples, although C. Matthew Balensuela points out in his critical edition that the descriptions of his compositions align them with the more complicated works of the Flemish composer Johannes Ciconia and with Philippoctus da Caserta, who may have worked in papal Avignon. Nicholaus’s use of the semiminim in a duple relationship to the minim is thus similar to the way both Italians and non-Italians use this note value, but the anonymous author’s *description* of his use of semiminims, “placing four for two,” matches the typical Italian approach to the term. Using a separate term for

⁴² Trans. Balensuela, *Ars cantus mensurabilis mensurata per modos iuris*, 249.

⁴³ Ibid., 251.

⁴⁴ Ibid., 63.

proportional units is something otherwise typically found only in non-Italian treatises, but as Balensuela points out, the author relied very heavily on the work of Johannes de Muris and specifically states in the *probemium* of the treatise that his intent is to clarify French mensural notation for those Italians who have misunderstood it. Therefore, his choice of the term imperfect minim may actually reflect French practice, thus still aligning with the aforementioned pattern in terminology.

The treatise *Tractatus figurarum* clearly specifies that two semiminims are always worth one minim, yet the language used, “*et due istarum valent unam minimam*,” could be interpreted as either a binary subdivision of the minim or as two semiminims in duple proportion to one minim.⁴⁵ In another part of the treatise, though, the author states that “a smaller body is divided into two parts and is the smaller prolation that can be made—that is, into two semiminimae when this is applied to the smaller value, that is, what is worth a minima ...”⁴⁶ This description, of a minim that is subdivided into two equal smaller units called semiminims, is much more akin to non-Italian theory. Like *Ars cantus mensurabilis mensurata per modos iuris*, this author also refers to imperfect minims as the units creating the sesquitertia proportion with the minim.

In the critical edition, Philip Schreur discusses the provenance of the author; while he agrees that the attributions to Philippus de Caserta and Egidius de Murino are spotty at

⁴⁵ http://www.chmtl.indiana.edu/tml/14th/TRAFIG_TEXT.html

This language is the same as what is used in *Tractatus de figuris et temporibus*, the gloss on this treatise discussed earlier. However, in that treatise, despite the use of the verb “*valent*,” it is clear that the author is referring to proportional relationships given that groups of note values replace another group of different note values.

⁴⁶ Trans. Schreur, *Tractatus figurarum*, 79.

best, he believes the author to have been Italian specifically because he places such importance on the semiminim, a note value that Schreur believes was largely ignored by the French but was a large part of the Italian tradition.⁴⁷ I will investigate this treatise further in Chapter V, but for now I will state that the mere presence of the semiminim, either as a term or as a concept, is not enough to firmly situate this treatise within the Italian theoretical tradition. The data presented thus far has clearly shown that the semiminim was a concept known to non-Italians. Also, the author of *Tractatus figurarum* was clearly intimately familiar with French mensural notation; this treatise also relies heavily on Muris and cites a number of French compositions, and the language the author uses to describe both the semiminim and proportional units is much more closely aligned with that found in non-Italian treatises. Either this author was “an Italian trained in the French style in the third quarter of the fourteenth century,” as Schreur claims, or he may in fact be of French origin after all.⁴⁸

Lastly, the treatise by Johannes Pipudi is anomalous, but in ways that are more difficult to unpack. The author states that two seminas are placed (*ponunt*) for one minim, a more Italianate description. But he uses the term additas for the note values creating the sesquitertia relationship, which is similar to non-Italian theory. The treatise is found in the Italian-Spanish manuscript Seville 5.2.25, but that does not mean that all treatises therein are of that provenance; the presence of works by Muris is enough to immediately override that notion. Yet while the *Libellus* and other works believed to be related to Muris were widely circulated across Europe, this is the only known mention of Pipudi and the only extant

⁴⁷ Schreur, *Tractatus figurarum*, 7-9.

⁴⁸ Ibid., 9.

source for his works. It seems more likely that such treatises would have originated locally and preserved in a source of nearby provenance, marking Pipudi and his works as Italian or possibly Spanish. Still, in the second of his two treatises, Pipudi is named by the scribe, who called him “*canonicus Sancti Desiderii Avinionensis*,” or canon of the church of Saint Didier in Avignon.

An apparently hitherto unnoticed second copy of this treatise appears just a few folios later in the same manuscript. Labeled in RISM as *Pro introduccione cognicionis habende de valoribus* ..., it provides in some instances a clearer copy of the text, though the two copies are not entirely identical. While this second copy refers to the sesquitertia unit as *additas*, it gives no name for the semiminims or *seminas*. I discuss this treatise in depth in Appendix C, but for now I say that it is likely that Pipudi was an Italian working in Avignon and, like *Arcantus mensurabili mensurata per modos iuris*, this treatise reflects both a typically Italian approach for the relationships between note values and a more French-influenced approach to their names.

III.4: Conclusions

The pattern of linking certain terms to specific conceptions of substance and duration is a firm one. The dichotomy in opinions has been shown to fall quite distinctly along national lines. The Italian theoretical tradition conceptualized the semiminim not as an individual unit but as a proportional figure to be used in groups that replace larger note values. While similar proportions were described in non-Italian treatises, the term semiminim (or a synonym such as *simples* or *crocheta*) was not applied to those figures, because in those

theoretical traditions it was defined as a discrete, individual note value worth a pre-determined fraction of a divisible minim. The choice of terminology in these treatises thus reflects the theoretical understanding of the philosophical substance of the semiminim, as was highlighted in the discussion of the meaning of the prefix semi-. As for the few anomalies in the treatises mentioned above, they are not so much instances of a broken pattern as they are evidence of the exchange of theoretical conventions. Italian theory absorbed French theory continuously throughout the fourteenth-century, as I will show in greater detail in Chapters V and VI. The Italian treatises that made use of French concepts were specifically geared toward the presentation of Murisian theory to an Italian audience, and as such began to adopt French language. As for the two anomalous French treatises, their irregularities may reflect the beginnings of the exportation of the new Franco-Italian theory into the rest of western Europe. Table 2 below summarizes the information found in this chapter.

There is one more facet pertaining to the semiminim that has yet to be discussed: its physical shape, or grapheme. As I will demonstrate in Chapter IV, the graphemes prescribed or described in these theoretical treatises fall along the same national and traditional boundaries already outlined through terminology, substance, and duration.

Table 2: Duration and Substance of Small Note Values⁴⁹

<i>Author</i>	<i>Treatise</i>	<i>Terminology</i>	<i>Substance</i>	<i>Relationship to the Minim</i>
Marchetto of Padua	<i>Pomerium</i>	Unnamed	Proportion?	Unclear
Anonymous	<i>Rubrice Breves</i>	Unnamed	Proportion?	—
Anonymous	[<i>Ars Nova</i>] <i>Cum de mensurabili musica</i>	Semiminim	Discrete (Proto-proportion)	2:1
Anonymous	[<i>Ars Nova</i>] <i>Sex minime possunt poni</i>	Minim Semiminim	Discrete	2:1
Anonymous	[<i>Ars Nova</i>] <i>Sex sunt species principals</i>	Minim Semiminim	Discrete	2:1
Anonymous III	<i>Compendiolum artis veteris ac novae</i>	Semiminim	Discrete (Proto-proportion)	2:1
Jacobus de Liège	<i>Speculum Musicae</i>	Semiminim Semiminor	—	—
Anonymous	<i>Ars discantus IX</i> <i>Partes prolationes quot sunt</i>	Semiminim	Discrete	3:1
Anonymous	<i>Ars discantus III</i> <i>In arte motetorum</i>	Semiminim	Discrete	2:1
Anonymous VIIb	<i>De diversis manieribus II</i>	Unnamed	Proportion	[2:1?]
Johannes Torkesey	<i>Declaratio trianguli et scuti</i>	Simpla	Discrete	2:1 or 3:1
Anonymous	<i>Regule Magistri Johannes de Muris</i>	Simpla	Discrete	2:1
Johannes de Muris (?)	<i>Libellus cantus mensurabilis</i>	Semiminim	Discrete	2:1 or 3:1?
John of Tewkesbury	<i>Quatuor Principalia</i>	Semiminim Crocheta	—	—
Johannes Boen	<i>Ars musice</i>	Semiminim	—	—
Anonymous	<i>Tractatulus de cantu mensurali seu figurative musice artis</i>	Semiminim	Discrete	2:1 (modern) 2:1 or 3:1 (traditional)
Willelmus	<i>Breviarum</i>	Minim Crocheta Simpla	Discrete	2:1 or 3:1
Anonymous	<i>Compendium totius artis motetorum</i>	Semiminim Minimis additis	Discrete Proportion	2:1 4:3
Philipoctus de Caserta?	<i>Tractatus figurarum</i>	Semiminim Imperfect Minim	Discrete Proportion	2:1 4:3
Anonymous	<i>Tractatulus de figuris et temporibus</i>	Semiminim (Italian)	Proportion	3:2, 8:4

⁴⁹ Again, this table is arranged in approximate chronological order. Terms chosen for semiminim-units and other small note values are aligned with their given durations and substances.

		Unnamed (French)	Proportion	8: B in C (2:1)
Johannes Pipudi	<i>De arte cantus</i>	Seminas (Semiminimas?)	Proportion	2:1
		Additas	Proportion	4:3
Goscalcus?	<i>Berkeley II</i>	Semiminim	Discrete	2:1
		Additas	Proportion	4:3
Goscalcus?	<i>Berkeley III</i>	Semiminim	—	—
Johannes Hanboys	<i>Summa</i>	Semiminor Crocheta	Discrete	2:1 or 3:1
Anonymous V	<i>Ars cantus mensurabilis mensurata per modos iuris</i>	Semiminim	Proportion	2:1
		Imperfect Minim	Proportion	3:2 or 4:3
Thomas Walsingham	<i>Regule Magistri Thome Walsingham</i>	Crocheta Simpla	—	—
Anonymous X	<i>De minimis notulis</i>	Semiminim	Proportion or Discrete	4:3 or 2:1
		Minime semiminimarum	Discrete or Proportion	2:1 or 4:3
Anonymous	<i>De semibrevis caudatis</i>	Semiminim	Discrete	2:1
Anonymous	<i>Notitia del valore</i>	Semiminim	Proportion	2:1 or 3:2
Jacopo da Bologna?	<i>L'arte biscanto misurato</i>	Semiminim	Proportion	2:1, 3:2, 4:3
Anonymous	<i>Liber musicalium</i>	Semiminim	—	—
Anonymous	<i>Musice compilatio</i>	Semiminim	Proportion	2:1, 3:2, 6:4, 4:3
Anonymous	<i>De musica mensurabili</i>	Semiminim Semiminimissima	Proportion	2:1 or 4:3
Anonymous	<i>De musica mensurata</i>	Semiminim	Discrete	2:1

CHAPTER IV

The Semiminim: Issues of Graphic Representation

“Restat quoque, quibus figuris, signis, notulis, quae dicta sunt, convenienter debeant designari quibusque sermonibus vel vocibus appellari, cum modo tempore nostro super hoc cotidie nostri doctores musicae ad invicem convixantur.

There remains by what figures, signs or notes those aforementioned things ought to be properly indicated and by what terms or words they ought to be referred to, since in our times our teachers of music rail daily against one another over this matter ...”

✎ Johannes de Muris, *Notitia artis musicae*¹

The grapheme – the written shape of a note value – is the most difficult aspect of the semiminim to explain; as an extra-textual element in the otherwise text-only medium of a treatise, it is much more affected, or even completely altered, by scribal agency. Both the words of the text and the graphemes used in written music are symbolic, relating meaning to the reader through principles of language and mensural notation. Just as words can have different regional spellings (the American color as opposed to the British colour, for example), and just as letters can have multiple shapes but still be recognizable (a, A, and a are all representative of the letter [a]), graphemes are subject to the preferences and individualities of each scribal hand.

¹ Michels, CSM 17, 74-75.

But there is one major difference between the way in which a scribe might shape, ornament, or inject individual preference into the writing of words and into the writing of musical graphemes. With written language, we have generally accepted systems of spelling and grammar with limits of acceptable variance by which we can determine whether words are correct, misspelled, or nonsensical. We can mark differences in individual styles of handwriting, in which flourishes or alterations to letter shape are still recognizable as specific items in a given language. Most of the graphemes at use in the fourteenth century were standardized to the point where we can assess regional and individual preferences, as I showed in Chapter I. But with the newer graphemes for the small note values in question, we do not have the same system of checks and balances by which to judge any scribe on his accuracy.

There was no single notational system, no one correct grapheme, against which we can measure the plethora of note shapes transmitted in the extant theoretical literature. We cannot, therefore, look at a grapheme that appears less frequently than others and automatically assume that its scribe was mistaken, uneducated, or attempting to invent something new. Instead, we are left to take every copy of every treatise at face value, acknowledging that it is possible that each grapheme or variant presented might have been a legitimate option, at least for that scribe.

My focus on the scribe, as opposed to the theorist or author of a given treatise, underpins my methodological approaches in this chapter. Each of the treatises pertinent to this study is copied in anywhere from one manuscript to dozens of manuscripts, but the relationship between treatise and source, or author and scribe, is not always a close one. We

know of no definite instance in which a treatise written by a particular author was also written *down* by that author. Also, the proximity of these treatises to any of their source manuscripts, with regard to both point of origin and time of origin, varies widely: the treatises explored in this chapter date from c. 1315 to c. 1400, yet their manuscript sources were copied between 1315 and 1525. Many of these sources have no precise date, but can only be placed generally within a particular century, making detailed chronological relationships difficult to ascertain. While some treatises were apparently copied only locally, other treatises had much wider circles of influence and were copied both locally and much further abroad. Regardless of proximity, but especially when treatises are copied over long periods of time or in different geographical areas, we are forced to deal with the possibility of scribal interference or intercession; the relationship between author/theorist and scribal hand therefore varies widely and must be assessed on a case-by-case basis.

Clearly, this relationship exists for all aspects of the text, not just the grapheme. But as Giuliano Di Bacco has so succinctly stated,

“Scholars are well aware of the fact that even ‘professional’ scribes ... were not bound to carbon-copy all the paratextual elements from their exemplars but rather prioritized the specific requirements of the newly conceived volumes ... Even more freedom is indeed to be expected from non-professionals producing individual books, perhaps for their own use ... In sum, paratextual elements, such as headings, division and numbering of chapters, and obviously colophons, always exhibit a higher degree of variability than the texts themselves.”²

Scribal presence or interference was not a significant aspect of Chapters II and III, because regardless of geographical or chronological proximity, the texts of treatises were often less

² Giuliano Di Bacco, “Original and Borrowed, Authorship and Authority. Remarks on the Circulation of Philipoctus de Caserta’s Theoretical Legacy,” in *A Late Medieval Songbook and Its Context: New Perspectives on the Chantilly Codex (Bibliothèque Du Château De Chantilly, Ms. 564)*, edited by Yolanda Plumley and Anne Stone, 327-64 (Turnhout: Brepols, 2009), 334.

variable, more consistently (if not always perfectly) copied; musical examples and graphemes were not so sacrosanct. Some scribes, at least, felt free to update these elements of their treatises in ways to which they did not subject the text. These emendations may reflect stemmatic issues, perhaps relying on a no longer extant exemplar, or they may be indicative of a movement toward more contemporary or local practices with which a scribe was more familiar. In the citation above, Di Bacco continues by mentioning “examples where scribes [felt] free to add their own voice, at least as editors.”³ Regardless of motive or intentionality, these scribes cannot necessarily be considered mute conduits but must be considered to be active participants in and editors of mensural theory. The discussion of grapheme in this chapter must therefore take into account scribal reliability, motive, and musical knowledge, as well as stemmatic or filial relationships between the treatises and the manuscripts that contain them.

But to what end? Is it possible to tell whether the grapheme preserved in a given copy of a treatise is that intended by the theorist? Can we tell, in every case, whether the written grapheme was altered or updated by the scribe? Most importantly, why does this information matter? As Margaret Bent has so succinctly put it:

“only when we have informed ourselves as fully as possible about the specific initiatives that contemporary scribes exercised upon their material can we begin to relate the style of the music they copied to the intentions of its composers ... Music carries within its written transmission substantial possibilities for scribal interpretation, change, and indeed ‘criticism’; we may be dependent upon the same document both for unique knowledge of a particular piece of music and, at the same time, for knowledge of its contemporary reception.”⁴

³ Di Bacco, “Original and Borrowed,” 334.

⁴ Margaret Bent, “A Contemporary Perception of Early Fifteenth-Century Style; Bologna Q15 as a Document of Scribal Editorial Initiative,” *Musica Disciplina* 41, 1380-1430: An International Style? (1987): 183.

Although in this chapter I discuss the particulars of mensural theory, and not the musical compositions to which Bent refers, the spirit of her statement rings true. Yet I believe that we can never be entirely sure that any written document clearly relays authorial intent to the reader, a fact that is surely compounded in this study by scribal interference and the vast amount of time that has passed between authorship of treatises, their subsequent copying into manuscripts, and our modern readership. The goal in this chapter is therefore not to prove or disprove that a particular grapheme is original or ‘authentic’ to a theorist or treatise, but to understand the potential motives behind the use of each grapheme.

The prior two chapters were largely organized according to the chronology and provenances of treatises, an approach that worked well for textual data. But this chapter investigates treatises as they were copied into their manuscript sources, and since those so widely vary by dating and provenance, the same approach is less fruitful. The treatises themselves actually provide a more appropriate entrée into the interpretation of note shapes: twelve treatises textually describe the shape for the semiminim.

I begin by comparing these descriptions with the graphemes copied into the manuscript sources for each treatise. This approach demonstrates that when the treatises are copied into manuscripts of the same provenance, the graphemes preserved more or less match the textual descriptions, but when the treatise was copied abroad, many times the graphemes were altered to reflect local or current preference. By identifying the altered note shapes, I begin to determine what these regional options were and when they might first have been used; these graphemes thus act as a control group for the investigation of the rest of the graphemes copied throughout the fourteenth century.

For the rest of the sources that lack textual descriptions, I compare their graphemes to this control group, beginning with manuscripts and treatises that share provenance and then branching out to those copied in different locations, compiling evidence of chronological and regional preference. My investigation of these sources reveal that local predilections in semiminim graphemes follow the patterns established in the prior two chapters, and that instances of clear scribal influence elucidate ideas of acceptable regional practice over the course of two centuries.

IV.1: Semiminims with Textual Descriptions

Twelve treatises contain both a textual description of the appropriate note shape for the semiminim and an accompanying grapheme. Seven are copied only into manuscripts that share their provenance. An additional two are copied into multiple manuscripts, some of which share provenance and others that do not. The last three are found only in manuscripts of foreign provenance. A closer look at these allows me to locate particular graphemes within certain geographical spheres and periods of use.

IV.1.1: Those of Shared Provenance

The anonymous *Compendiolum artis veteris ac novae* is the earliest and the only French example; it dates to the late 1320s or 1330s and is copied into only one manuscript source, Paris 15128. The description in *Compendiolum* reads: “and the recta minima stemmed twice on

its upper part is called a semiminim.”⁵ Figure 16 below shows the grapheme from Paris 15128; its two upward stems match the textual description exactly. The manuscript cannot be more closely dated than to the fourteenth century, yet it is possible that it was copied soon after *Compendiolum* was written; if so, that places this unique grapheme in circulation in France, possibly Paris, in the first third of the fourteenth century.

Figure 16: *Compendiolum artis veteris ac novae*, Semiminim Grapheme



Three English treatises and manuscripts transmit graphemes for the simpla or crocheta that match their textual descriptions. First is the anonymous *Regule Magistri Johannes de Muris*, which is copied in the early fifteenth-century manuscript London Lansdowne 763. It depicts the simpla in the following terms: “It should be noted that the simpla is figured in the following way. It is a minim which has at the highest point of its stem part of a circle, as here:”⁶ Figure 17 shows a familiar shape, a minim with a right-facing flag or semicircle attached to the top of its stem.

⁵ “*Et minima recte bis caudata a parte superiori vocatur semiminima.*”

http://www.chmtl.indiana.edu/tml/14th/ANO3COMP_MPBN1512.html

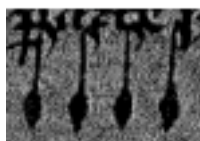
⁶ “*Notandum est quod Simpla est huiusmodi figura. Vel Minima habens in suppremo acumine tractuli partem cuiusdam circuli ut hic.*”

http://www.chmtl.indiana.edu/tml/14th/MURREG_MLBLL763.html

Figure 17: *Regule Magistri Johannes de Muris*, London Lansd. 763, Simpla Grapheme



Figure 18: *Regule Magistri Thome Walsingham*, London Lansd. 763, Crocheta Grapheme



The third of the English treatises is the *Breviarum* by one Willelmus, copied into the mid-fourteenth century manuscript Oxford 842. In it, he describes his minim or crocheta as follows: “The seventh rule: the minim or crocheta is a figure similar to the minuta [minim], and is an indivisible note with an upper stem that is bent back.”⁷

Figure 19: Willelmus, *Breviarum*, Oxford 842, Minima/Crocheta Graphemes



In the triangular diagram common to many English manuscripts, the manuscript provides the above graphemes for the minim or crocheta and its corresponding rest. Once again, the

⁷ “Septima regula. minima. seu crocheta. est figura similis minute. et indiuisibilis nota cum replicacione tractus superioris ut hic:

http://www.chmtl.indiana.edu/tml/14th/WILBREV_MOBB842.html; see also Appendix B for the entire triangular chart in which the example was written.

note shape is compared to that of the *minuta*, but instead of a hook or a semicircle being added to the stem, Willelmus describes the *semiminim* as having a stem that is bent or turned back on itself.

The graphemes in all three English manuscripts match each other almost exactly; all use the black stemmed rhomb from the *minim* or *minuta* and add a right-facing semicircle to its topmost point. From the dating of both the treatises and the manuscripts, I surmise that this grapheme was in use in England from as early as c. 1340, the earliest date of the *Regule Magistri Johannes de Muris*, through 1450, the date of the manuscript London Lansd. 763.

The next two examples are Italian. The anonymous *De musica mensurabili*, formerly attributed to Theodoricus de Campo, dates to the later fourteenth century; it is found in the manuscript Rome 307, which is dated to between 1390 and 1435. It describes the *semiminim* as follows:

“Such small notes are signified in a variety of ways, because certain things are those said to appropriate propriety, like *minims*; but insufficient propriety is bent back in the manner of hooks, as here: ♠

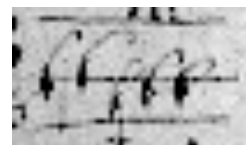
Others signify the so-called propriety by making them round, as here: ♠”⁸

Figure 20: *De musica mensurabili*, Rome 307, Semiminim Graphemes

a.



b.



⁸“*Tales notulae diversimode signantur, quia quaedam sunt quae dictas appropriant de proprietate, ut minimas; sed proprietatis parum est recurvanda ad modum hami, ut hic: Alii quidam signant dictam proprietatem de circulare, ut hic:*”

The first description applies to the graphemes in Figure 20a, which are akin to those found in the English treatises mentioned above and which are similarly described as a minim with its stem bent back. The second grapheme, however, is unusual, looking like the first grapheme tilted to the right. The accompanying text is not particularly clear about the specifics of the shape for the grapheme, only stating that they are made round; perhaps this refers to the curving of the stem to the right.

The other Italian treatise, *Ars cantus mensurabilis mensurata per modos iuris*, reports that the semiminim ought to be distinguished from other similar note values: “Semiminimae, when placed in song, ought to be figured just as they were laid out above with respect to the difference of the imperfect minimae, or they ought to be figured as hollow black notes or with tails as such, turned back.”⁹ The author offers no grapheme alongside this description; he states specifically that he is not in favor of either the imperfect minim or the semiminim, so the lack of grapheme may be due to a desire to avoid helping to further codify these units. Yet he reports that the previously mentioned composer Nicholaus de Aversa used four of these semiminims in place of two minims, and in several examples throughout in the treatise, he shows note values that are in a duple relationship with the minim.

Two manuscripts provide us with these examples. Figure 21a shows the graphemes from the early fifteenth-century manuscript Florence 734, which is the earliest source for the treatise. Figure 21b shows the graphemes from the manuscript Florence Plut.29.48, which is

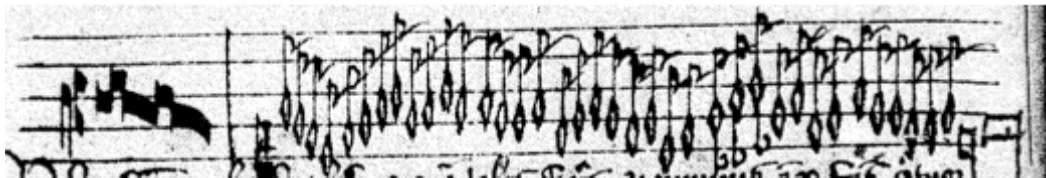
⁹ “*Semiminime, vero quando in cantu, ponuntur sic debent figurari sicut supra iacent ad differentiam minimarum imperfectarum, vel debent figurari nigre vacue vel cum caudis sic et retortis.*”

Trans. Balensuela, *Ars cantus mensurabili mensurata per modos iuris*, 250-251.

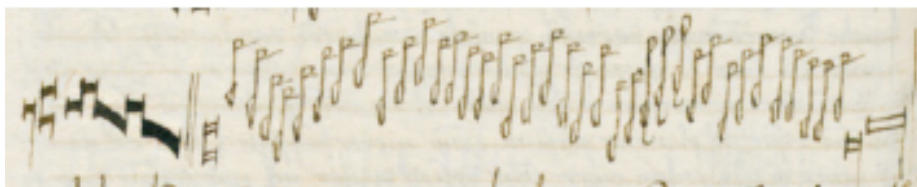
only datable to before 1471.¹⁰ The two examples are very similar to one another; the only minor distinction between the duple units is that the stem of the Florence 734 grapheme extends beyond the top of the hook while the other's stem does not. In the critical edition, C. Matthew Balensuela stated that he thought the author's above description for a semiminim would be drawn as \diamond , yet this grapheme is not found in either source. However, if the term "*retortis*" in this description is translated as "turned aside," rather than Balensuela's suggestion of "turned back," then the graphemes in these two sources are quite similar to what the author described.

Figure 21: *Ars cantus mensurabili mensurata per modos iuris*, Semiminim Graphemes



a. Florence 734



b. Florence Plut.29.48



¹⁰ There are two other Italian manuscript sources for this treatise: Paris 7369, which dates to 1471, and Norcia 1260, which consists of a single folio used as a covering for another manuscript and which is thought perhaps to be the earliest surviving portion of the treatise. Paris 7369 does not contain any musical examples, so there are no graphemes to discuss. As of the present moment, I have been unable to look at the latter manuscript first-hand. C. Matthew Balensuela does not specify any variations in semiminim grapheme between the manuscripts in his critical edition, but he was unaware of the Norcia fragment.

Since nothing else about Nicholaus of Aversa is known, it is of course impossible to speculate about whether he knew or used these specific graphemes. Still, despite the author's rejection of the semiminim as a legitimate note value, he (or the scribe) was familiar enough with their physical shape and typical usage to record them here; the scribes of the two manuscripts provided graphemes that appear to match the textual descriptions, even though they differ slightly from each other. That places these two graphemes,  and , in Italian practice during the late fourteenth and fifteenth centuries, when the treatise and its manuscript copies were written.

Lastly, one central European source provides a textual description for the semiminim's rest. P. Altman Kellner and Charles Brewer have dated the Silesian *De musica mensurata*, copied in the manuscripts Munich 24809 and Kremsmünster 312, to c. 1400.¹¹ The rest for the semiminim is depicted as a minim rest with a hook:

“[Lines] drawn above designate minims, and below semibreves. Then those drawn above are of two kinds, namely hooked and not hooked. Hooks designate semiminims and no hooks [designate] minims, as was shown above and will be shown below.”¹²

Neither Kellner nor Brewer provides a facsimile of the rest, nor have I been able to view Kremsmünster 312 personally. But Munich 24809 is digitized online; its rest graphemes are

¹¹ Charles Brewer, “The Introduction of the Ars Nova into East Central Europe: a Study of Late Medieval Polish Sources” (PhD diss., City University of New York, 1984); P. Altman Kellner, “Ein Mensuraltraktat aus der Zeit um 1400,” *Anzeiger der Oesterreichischen Akademie der Wissenschaften, philosophisch-historische Klasse* 94 (1957): 73-85.

¹² “*Sursum tractae designant minimas, deorsum autem semibreves. Sursum autem tractae sunt duplices, scilicet uncatae et non uncatae. Uncatae designant semiminimas et non uncatae minimas, ut patuit prius et patebit infra.*”

shown below.¹³ The later Polish manuscript Warsaw 61, dating to 1467, also contains a similarly worded section that might be related to *De musica mensurata*; its rests are also shown in Figure 23. It is unclear what is meant by ‘hook;’ Munich 24809 shows a curved right-facing flag, while the Warsaw source transmits a more angled line.

Figure 22: *De musica mensurata*, Munich 24809, fol. 142v, Grapheme for the Semiminim Rest

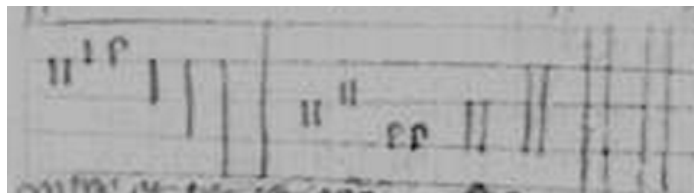
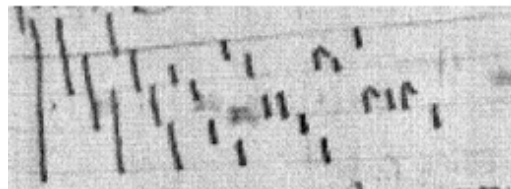


Figure 23: Warsaw 61, fol. 281, portion related to *De musica mensurata*



These seven treatises show us primarily that a wide variety of graphemes were possible for semiminim units, regardless of whether these units shared terminology or rhythmic durations. The only French source contains a unique grapheme not found in any other source, either theoretical or practical, while the one central European treatise offers two differing shapes for a ‘hooked’ rest. The English sources were all consistent with one another, but we find no less than four different note shapes in the Italian manuscripts. Since these note shapes largely matched their textual descriptions, I can surmise that at least for

¹³ <http://daten.digitale-sammlungen.de/~db/0001/bsb00011605/images/>

the scribes responsible for copying these treatises, and likely also for the theorists or authors who provided the descriptions, these graphemes were all viable options for semiminims.

An examination of the descriptions and graphemes for the semiminim in manuscripts of varying provenance further contributes to our knowledge of acceptable regional preferences. As I will show, scribes copying treatises from different locations often updated or altered graphemes to reflect more familiar practices.

IV.1.2: Those of Varying Provenance

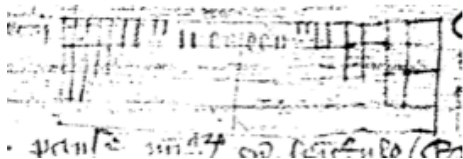
Two treatises are found in sources both close to home and farther abroad. The widely copied *Libellus cantus mensurabilis* attributed to Johannes de Muris and the third of the five treatises from the Berkeley manuscript both describe the shape of the semiminim's rest. As stated in Chapter II, the *Libellus* dates to c. 1340, and various portions, reworkings, and translations of it are found in over fifty sources across western and central Europe. Both the major and minor recensios of this treatise give the following description for the semiminim rest: "... and the semiminim pause [rest] is made like the minim rest with a semicircle."¹⁴

I have not had access to every copy of the *Libellus*, but in the following examples, a striking pattern emerges: graphemes matching this description are found in manuscripts of all provenances, but graphemes that vary from this description are only found in manuscripts of Italian origin.

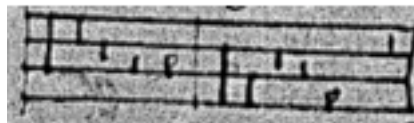
¹⁴ "... et pause semiminime fit sicut pause minime cum semicirculo."

Figure 24: *Libellus cantus mensurabilis*, Graphemes for the Semiminim Rest

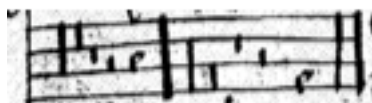
a. London 23220 (French), fol. 14



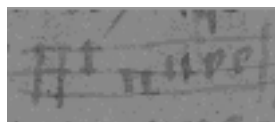
b. London 10336 (English), fol. 17



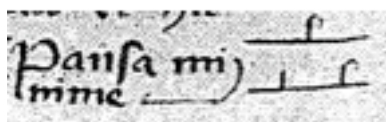
c. London Lambeth 466 (English), fol. 8v



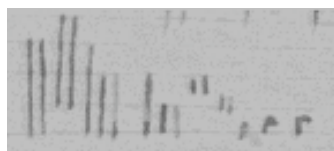
d. Cambridge 410-II (English), fol. 5v



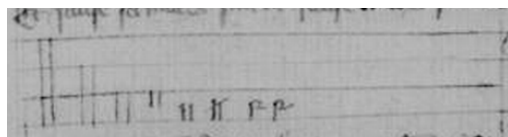
e. Porto 714 (Portuguese)



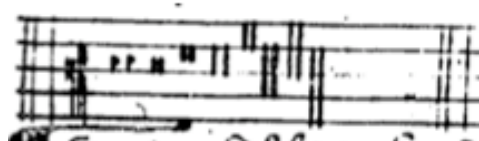
f. Prague XI.E.9 (Austro-German)



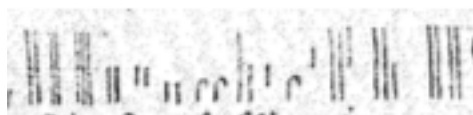
g. Munich 24809, fol. 140 (South German-Italian)



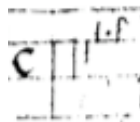
h. Pisa 606 (Italian), fol. 29



i. Washington LC J6 (Italian), fol. 45v



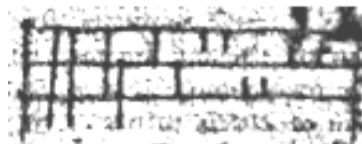
j. Chicago 54.1 (Italian), fol. 48v



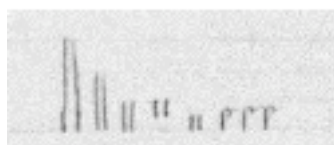
k. Naples D 12 (Italian), fol. 45



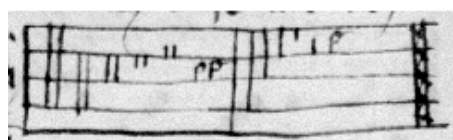
l. Brussels 785 (Italian), fol. 8



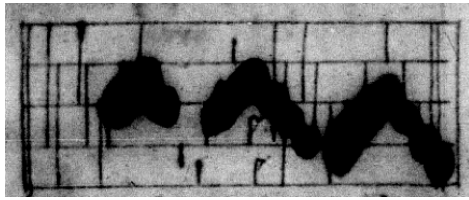
m. Seville 5.2.25 (Italian), fol. 86v



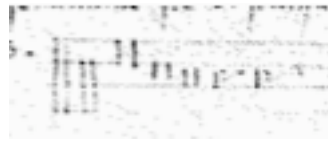
n. Seville 5.2.25 (Italian), fol. 88v



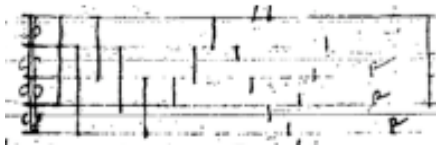
o. Rome 5321 (Italian), fol. 5v



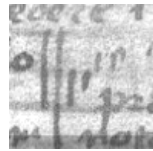
p. Catania D 39 (Italian), fol. 121



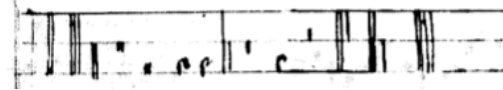
q. Siena L.V.30 (Italian), f. 40v



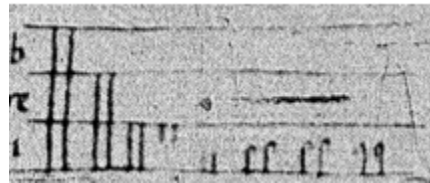
r. Faenza 117 (Italian)



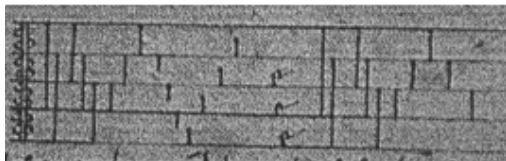
s. Einsiedeln 689 (Italian)



t. Florence Redi 71 (Italian)



u. Florence 806 (Italian)



v. Brussels 4149 (Italian)



In all of the non-Italian examples except one, the semiminim rest is a line that ascends halfway into a space on the staff and loops around to the right, matching the description above that the rest should be a minim rest with a semicircle attached to it. The Italian sources, however, show a greater variety of hooks or flags. Several use the same grapheme found in the non-Italian examples, but many add an upward flourish so that the hook looks like the numeral 2, like the semiminim grapheme in the Italian *Ars cantus mensurabilis mensurata per modos iuris* (Figure 21). This flourished grapheme is also found in the manuscript Munich 24809, which according to RISM is from southern Germany; given the

proximity of south Germany c. 1400 to the Duchy of Milan and other northern Italian territories, this source might have been copied in Italy or in a very Italian-influenced south German locale. The last two sources show two graphemes for the semiminim rest, one with a right-facing hook and the other its mirror image. The description for the semiminim rest in the *Libellus* does not specify the direction of the hook, yet the vast majority of the examples place it on the right side. The unique left-facing flags will be discussed further in the section on Italian sources.

The third Berkeley treatise is a reworking of the *Libellus* (so much so that it was counted by Daniel Katz as one of the earliest sources for that treatise); it too only describes the semiminim rest: “Semiminima rests are made like minima rests with a semicircle added above.”¹⁵

The two sources for this treatise are of different provenances: Catania D 39 is a fifteenth-century Italian manuscript, while the Berkeley manuscript purportedly shares French origin with the treatises it contains. Like the Italian sources for the *Libellus*, Catania D 39 adds the unforeseen flourish to the grapheme’s flag in a deviation from the textual description. But the Berkeley manuscript, unlike the other French sources for the *Libellus*, uses a grapheme that does not quite match the textual requirements: the rest is angled, like those shown above in the two central European treatises, not flagged like the text describes.

In Chapter III I mentioned that the second Berkeley treatise appears to be anomalous, since it discusses the duration and substance of the semiminim with more

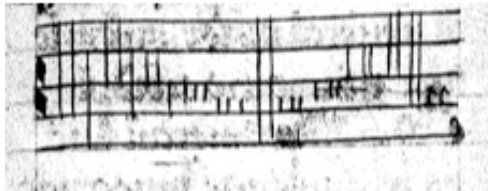
¹⁵ “*Pause semiminimarum fiunt sicut pause minimarum, addita superius quadam semicirculacione ...*”

http://www.chmtl.indiana.edu/tml/14th/BERMAN_TEXT.html; trans. Ellsworth, 179.

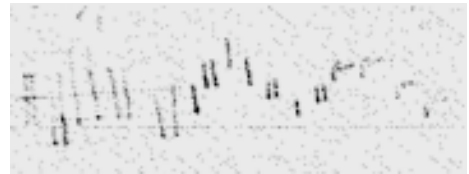
Italianate language. To this point, the other French treatises have contained graphemes matching their textual descriptions; this grapheme thus appears to be yet another anomalous feature, one that implies possible central European influence. I will discuss this particular grapheme later in this chapter.

Figure 25: Berkeley III, Graphemes for the Semiminim Rest



a. Berkeley Manuscript, fol. 178



b. Catania D 39, fol. 121



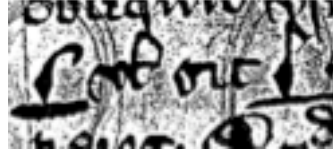
IV.1.3: Those of Different Provenance

Three treatises containing textual descriptions of the semiminim are found only in manuscripts of foreign origin. The earliest is *Cum de mensurabili musica*, formerly of the Vitryan *Ars Nova* and thus of French origin. It is found only in one English manuscript, London 21455, which postdates the treatise by some seventy-five years. If this treatise can still be dated to c. 1320, it may contain the earliest verbal description of the shape of the semiminim. It reports that “the semiminim is that which has a line ascending diagonally toward the right side, as here:  or as here:  and they cannot be placed unequally.”¹⁶

¹⁶ “*Semiminima est que habet tractum ascendentem in obliquum uersus dextram partem sic uel sic et non possunt poni in pares.*”

http://www.chmtl.indiana.edu/tml/14th/ANOMM_MLBL2145.html

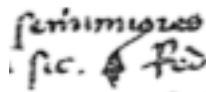
Figure 26: *Cum de mensurabili musica*, London 21455, Semiminim Graphemes



The description and graphemes partially match: the first leans toward the right, although it curves at the top of its stem in a way that is not explicitly mentioned in the description. The second has an upright stem with a right-facing flag, which is presumably the diagonal line from the text. The latter grapheme is one we have seen already in the three aforementioned English treatises as well as the Italian *De musica mensurabili*; its presence in this treatise hints that the grapheme might also have been known in France, though the fact that London 21455 is English further underscores the use of this grapheme there throughout the fourteenth century.

Jacobus's *Speculum Musicae*, though displaying vexation toward the semiminim, still includes a textual description and grapheme for the troublesome unit: "truly when semiminims or semiminors are placed, they indirectly have tails above, which reflect toward the right side."¹⁷

Figure 27: *Speculum musicae*, Paris 7207, Semiminim/Semiminor Grapheme



¹⁷ "Qui vero ponunt semiminimas vel semiminores, indirecte superius caudant ipsas reflectendo caudam versus partem dexteram sic."

The treatise is found in three different manuscripts: Paris 7207, Paris 7207A, and Florence Plut.29.16, but neither the Florence manuscript, which is of French provenance, nor the Italian Paris 7207A contain the section of the *Speculum musicae* that discusses the semiminim. Figure 27 shows the grapheme from Paris 7207, which is of Italian provenance and which dates to over a century after the early fourteenth-century *Speculum*. Despite the distance in both provenance and chronology, the description in the treatise matches this grapheme; I speculate that this may be due to its uniqueness, since this note shape is found in no other treatise nor is it used in the repositories of performing music. Perhaps the scribe of Paris 7207 was aware of the implications of the text and chose not to update it to a more contemporary option out of a desire to preserve a historical curiosity.

The third and last treatise in this category is the anonymous late fourteenth-century French *De minimis notulis*. It textually describes both of the confusing terms mentioned in Chapters II and III: semiminim and minime semiminimarum:

“Secondly, it should be observed that certain notes have been called *semiminims*; and these are similar to minims in form, except that they have a upward stem that rebounds in the way of the wind ...

Thirdly, it should be observed that as yet other [notes] are invented, similar in form to the already named semiminims; to these are added stems to the same degree above the upper part and the lower; and these by some people are called *minime semiminimarum*, as was said before ... [emphasis mine]”¹⁸

¹⁸ “Secundo notandum quod quedam notule nuncupantur semiminime; et he sunt similes minimis in forma, nisi quod habent caudam a supra reverberatam ad modum venti, ut hic:
Tertio notandum quod adhuc alie inveniuntur semiminime similes jam dictis in forma, hoc addito quod caudate sunt tam a superiori parte quam inferiori; et he a quibusdam nuncupantur minime semiminimarum, scilicet antedictarum, ut sunt he:”

Figure 28: *De Minimis Notulis*, Strasbourg C.22/Cousse-maker, Graphemes for the Semiminim and Minime Semiminimarum

a. semiminim:



b. minime semiminimarum:





Unfortunately, this treatise was originally copied in the now lost manuscript Strasbourg C.22, portions of which were transcribed by Cousse-maker before it was destroyed by fire.


Cousse-maker's printed graphemes are reproduced in Figure 28, but there are no concordances for this treatise that we can use to crosscheck them. While the graphemes appear to match their descriptions, and the shape of the semiminim proper was commonly used throughout Europe, I cannot know whether Cousse-maker accurately preserved the shapes notated in the treatise or whether he too might have indulged in the temptation to update graphemes to more familiar symbols. They therefore cannot add to the pattern I am establishing in this chapter, although the text suggests that they would be in agreement.

In this section, I have shown that a total of six visually distinct graphemes for the semiminim, and three for the semiminim rest, were copied throughout the fourteenth and fifteenth centuries. Those that matched their textual descriptions were found across Europe, whereas those that were altered were only found in manuscripts of different provenance. Scribes of these treatises took it upon themselves to revise manuscripts, exchanging foreign graphemes for more familiar ones. To this point, the route by which theoretical knowledge travelled was from France outward, especially toward Italy, so the altered graphemes are largely found in central European and Italian manuscripts. However, chronological

proximity also plays a role, since it is possible that one Italian scribe actually preserved, rather than erased, one grapheme because it was a historical oddity.

The unique graphemes mentioned in this section are cause for speculation. The early fourteenth-century French  recorded in Paris 15128 might have been an early attempt on behalf of the theorist to construct a logical written form for the new note value. Since the addition of a stem to a semibreve reduces its duration to that of a minim, then the addition of a second stem would thus reduce the minim's duration to that of a semiminim. To the best of my knowledge, however, this is the sole example of this grapheme.

The same can be said for the tilted  found only in Paris 7207. Since the grapheme matches the text in Jacobus's *Speculum musicae*, it likely dates to the early fourteenth century; the mid-fifteenth century scribe of the manuscript would surely have been aware of the more common forms for the semiminim and would thus have been able to update the note shape had he been so inclined. Perhaps he retained this grapheme because it was so unique and because it was best suited to the text.



With that said, this grapheme is similar both visually and textually to those found in *De musica mensurabili* and *Cum de mensurabili musica*, the graphemes of which add a hook or semicircle to the end of the upper stem: . In particular, the textual description found in *Cum de mensurabili musica* is extremely close to that of Jacobus:


Jacobus de Liège:


“... they have tails above, which reflect toward the right side ...”¹⁹

Cum de mensurabili musica:

“The semiminim is that which has a line ascending diagonally toward the right side ...”²⁰




Neither description mentions a hook, flag, or semicircle attached to the stem or line. It is possible that the grapheme found in Paris 7207, despite its chronological distance from *Speculum musicae* and *Cum de mensurabili musica*, is in fact what was intended in both treatises. The semicircle at the end of the stem of the grapheme in *Cum de mensurabili musica* could then be explained as a scribal amendment aligning the tilted  with the more common flagged . Both treatises are apparently French, so it is possible that these two treatises have more in common than we now realize.

Unfortunately, that does not explain how the rounded  ended up in the anonymous Italian *De musica mensurabili*. Yet the textual description in this treatise specifically mentions a rounding off of the upright minim with a semicircle. It is possible that this grapheme was circulating independently and might have been used in Italy in the second half of the fourteenth century; it may also be unrelated to the figure in Paris 7207 and thus was an early and apparently unpopular option in England.

Of the other graphemes, it appears that  was a continent-wide favorite. It was the only grapheme described in English treatises, it was textually described in one French treatise, and the right-facing hook or flag found on this unit was used for the semiminim rest

¹⁹ http://www.chmtl.indiana.edu/tml/14th/JACSP7_TEXT.html

²⁰ http://www.chmtl.indiana.edu/tml/14th/ANOMM_MLBI.2145.html

in manuscripts of all provenances. But in Italy, there were multiple options: the early fifteenth century saw the use of  and , and the same flourished hook was used on rests in Italian copies of the *Libellus* and the third Berkeley treatise. Lastly, some Italian copies of the *Libellus* present a left-facing semiminim rest: .⁹ These note shapes and their geographical orbits create a preliminary framework against which I can assess other semiminim graphemes.

IV.2: Semiminim Graphemes Without Textual Descriptions

In this section, I investigate the remainder of the treatises discussed in Chapters II and III alongside their manuscript copies. Since none of them offers a textual description for its semiminim graphemes, I rely on the framework established in the previous section as a control for assessing their graphemes. This framework reveals that when scribes copied foreign treatises, they frequently replaced unfamiliar graphemes with ones with which they were more comfortable, but that when copying treatises written more locally, they did not make such edits. I have therefore divided the remaining treatises according to the provenance of their manuscript sources. I first look at those that share a point of origin, then those of different provenances; in so doing, I add to the regional arrays of acceptable semiminim graphemes and am better able to assess the possibility of scribal influence.

IV.2.1: English Sources

The English treatises are the easiest place to start; most of them have already been discussed in the previous section, and all of those that remain are found solely in English manuscripts. These sources show an overwhelming preference for only one single grapheme.

Johannes Torkesey's *Declaratio trianguli et scuti* is the earliest English-authored treatise to mention the semiminim (here crocheta). It is copied in four sources, all of which are also English: Rome 1146, c. 1375-1450; London 21455, c. 1400; Cambridge 1441, c. 1415; and London Lansd. 763, c. 1450, which also preserves the aforementioned *Regule Magistri Johannes de Muris* and *Regule Magistri Thomas Walsingham*. In all four manuscripts, the graphemes for the crocheta and its rest are the same right-facing figures ♩ or ♪ found in all the English sources discussed to this point, as shown here:

Figure 29: Torkesey, *Declaratio trianguli et scuti*, Graphemes for the Crocheta and its Rest

a. Rome 1146



b. Cambridge 1441



c. London 21455



d. London Lansd. 763



Another London manuscript, London 8866, dates to c. 1425-50; it contains the late fourteenth-century *Summa* by Johannes Hanboys. In Chapter III, I pointed out that this treatise is the first to mention a semiminim (called *crocheta* or *semiminor*) subdivided into three smaller note values, here called minims. These two small note values are distinguished graphically: the semiminor or *crocheta* is written with the same right-facing \blacklozenge^p found in the other English manuscripts, while the new smaller minim is portrayed with a left-facing \blacklozenge^q . The same holds true for the respective rests corresponding to the two note values: \mathfrak{P} and \mathfrak{Q} . All four graphemes are depicted below.

Figure 30: Hanboys, *Summa*, Graphemes for the Crocheta / Semiminor and Minim





The English portrayal of the semiminim, usually called *crocheta* or *simpla*, is thus entirely uniform: it is always written with the right-flagged \blacklozenge^p and the equivalent rest, when offered, is the minim rest with a right-facing semicircle: \mathfrak{P} . With only one exception, all treatises of foreign provenance copied into English sources utilize the same graphemes. All three English copies of the *Libellus* – Cambridge 410-II, London 10336, and London 366 – use \mathfrak{P} as the grapheme for the semiminim rest, while \blacklozenge^p is found in the London 21455 copy of *Cum de mensurabili musica*. This treatise contains the only example of a different semiminim grapheme in the entirety of the English tradition: the aforementioned \blacklozenge^p . Since this treatise is

believed to be French, the English scribe might have chosen to retain this unusual grapheme since the more typically English shape was also included and since the tilted version is described in the text of the work.

IV.2.2: Central European Sources

The only other geographical region to approximate this level of uniformity in terms of semiminim shapes is central Europe. Three late fourteenth-century treatises were written in modern-day Austria or Poland; all are only found in locally copied manuscripts.²¹ The graphemes present in this collection of works thus inform us about notational preferences in this region.

The first of the three treatises is the anonymous *Tractatulus de cantu mensurali seu figurativo musice artis*; it postdates 1367 and is found in the manuscript Melk 950, a source only datable to the latter half of the fifteenth century. Despite the chronological distance, the graphemes the Melk manuscript transmits are fascinating. As I stated in Chapters II and III, the treatise describes two different kinds of semiminim. The first, apparently the one with which the author is more familiar, can be affected by prolation, so it can be worth one half or one third of the minim; it is written as a minim with an angled rightward hook: . The more modern semiminim, however, is always worth half a minim and is given the familiar flagged .

²¹ As of November, 2012, only three of the manuscripts have been available for me to confirm graphemes; the rest I report on from secondary sources.

Figure 31: *Tractatus de cantu mensurali seu figurative musice artis*, Melk 950,
Graphemes for Semiminims

a. semiminim



b. modern semiminim



I mentioned *De musica mensurata* in the previous section since it describes the shape of the semiminim rest as a hooked minim rest, as here: ♪. The shape for the semiminim itself, though, is not mentioned. In his dissertation, Charles Brewer provides the same angled grapheme for the semiminim that is found in the Melk treatise: ♪. The semiminim is worth half a minim, but the author states that two other note values, the semifusiel and semifusiel semi, share that duration. Because these two note values are subdivisions of the fusiel, and not of the minim, they and the semiminim are used in different mensural contexts; they thus need different note shapes so that they can be immediately visually distinguished from the semiminim.²² These two graphemes, also taken from Brewer's dissertation, are shown in Figure 31; I will discuss them further in Chapter V.²³

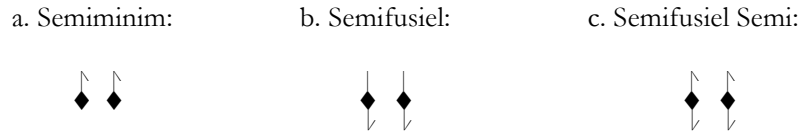
²² "*Semifusielis dicitur a semis, quod est dimidium et fusielis, quasi dimidium fusielis. Semifusielis semi dicitur, quasi dimidium fusielis et dicitur bis semi ea de causa, quia primum semi designat unum uncum, sed bis semi designat duos uncus. Quare autem semifusielis et semifusielis semi habent uncus, ratio est, quia aequipollent semiminimis, sed diversificant prolationem utque in cantibus mixtis.*"


The semifusielis is named from semis, which is half, and fusielis, as though half a fusielis. The semifusielis semi is named, as though half a fusielis and is called semi twice because of this, since the first semi is shown by one hook, but the second semi is shown with two hooks. Why then do the semifusielis and the semifusielis semi have hooks? The reason is, since they are equipollent with semiminims, but they vary prolations and also in mixed song."

http://www.chmtl.indiana.edu/tml/15th/ANOBRI_TEXT.html

²³ Brewer, "The Introduction of the Ars Nova," 169.

**Figure 32: *De musica mensurata* (after Brewer dissertation),
Graphemes for Small Note Values**





The last of the central European treatises is the Austro-German *Tractatus de musica*. As Tom R. Ward stated in his article on the St. Emmeram codex (Munich 14274), it was “composed in 1369, only two years after the earliest statute to mention music as a required study and twenty years before” the students were required to read the work of Johannes de Muris.²⁴ Portions of it are found in four Austro-German manuscripts: the contemporary Kremsmünster 312, the mid-century Michaelbeuern 95, and the two later fifteenth-century Melk 950 and Berlin 1590; another is found in the aforementioned Polish manuscript Warsaw 61, though it contains no graphemes for the semiminim. While these manuscripts have not been available first-hand, two articles have proven helpful. Renate Federhofer-Königs discussed the Michaelbeuern 95 version in her 1962 article; in it, the grapheme she provided for the semiminim is once again the minim with the jutting right line: ²⁵ In a later article, Alexander Rausch revisits Federhofer-Königs’s work and provides a more critical

²⁴ Tom R. Ward, “A Central European Repertory in Munich, Bayerische Staatsbibliothek, Clm 14274,” *Early Music History*, 1 (1981): 328-29.

²⁵ Federhofer-Königs, “Ein anonymer Musiktraktat.”

edition of the treatise as it is found in all of its concordant sources; he reports that every source shapes the semiminim grapheme in the same way.²⁶

The author of the Melk treatise, despite stating that the flagged  was the more modern grapheme, was clearly more familiar with the angled ; its continued presence in *Tractatus de musica* and *De musica mensurata* thus speaks to that grapheme's popularity in central Europe.

IV.2.3: Italian Sources

There are more treatises to discuss in this section than of all other provenances combined; because all are copied only into local manuscripts, they offer a fascinating look at Italian notational preferences. The Italian predilection toward viewing the semiminim as a proportion with a variety of rhythmic durations, as I showed in Chapter III, meant that those durations were at times graphically distinguished from each other for ease of visual recognition. In other words, the numerous semiminim graphemes found in Italian sources were not necessarily semantically equivalent; they could and did signify different durations for some theorists.

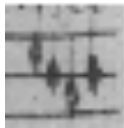
The earliest example in an Italian manuscript of a grapheme that elsewhere was used for a semiminim comes from the late fourteenth-century copy in the manuscript Rome 307 of Johannes Vetulus de Anagnia's mid-century treatise *Liber de musica*. An exploration of the

²⁶ Alexander Rausch, "Mensuraltraktate des Spätmittelalters in österreichischen Bibliotheken," in *Quellen Und Studien Zur Musiktheorie Des Mittelalters*, Bd. 3, ed. Michael Bernhard, 273–303 (München: Bayerische Akademie der Wissenschaften, 2001).

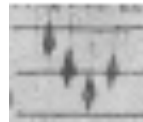
precepts of Italian notation as set forth largely by Marchetto of Padua, Vetulus's treatise does not mention the semiminim. Vetulus does, however, discuss the now common practice of mixing different divisiones or mensurations; if minims are used in such instances, then to avoid confusion the minim must have a different shape in certain prolations. The graphemes from the manuscript are given below in Figure 32. While the note value associated with this grapheme is not a semiminim but a type of minim, this manuscript shows that this right-facing grapheme was in use in Italy at least by the 1390s.

Figure 33: Vetulus, *Liber de musica*, Minim Graphemes

a. minims:




b. minims with changed figures:



Six other Italian treatises are dated to the last third of the fourteenth century. The first, the anonymous *Musice compilatio*, will be excluded from this study since its manuscript source, Milan M.28.sup, is not available for corroboration, but I have included the grapheme printed by F. Alberto Gallo in his transcription of the treatise in Figure 33 below. The next three are all found in the manuscript Seville 5.2.25: the *Tractatus figurarum*, attributed tentatively to the composer Philipoctus da Caserta; an anonymous gloss upon this treatise, entitled *Tractatulus de figuris et temporibus*; and Johannes Pipudi's *De arte cantus*, which is copied twice in this manuscript. The *Tractatus figurarum* is found in an additional fourteen sources, all but one of which are Italian. The last two are the vernacular treatises copied into the manuscript Florence Redi 71: *Notitia del valore* and *L'arte biscanto misurato*, potentially authored

by composer Jacopo da Bologna. These five verifiable treatises and their combined sixteen manuscript sources offer a grand total of ten different graphemes for semiminims and related small note values.

The right-flagged  offered as a type of minim in Vetulus's treatise is used for the semiminim in several cases. *Tractatulus de figuris et temporibus*, as mentioned in Chapter III, describes both Italian and French sets of note values. This grapheme is listed in the Italian section as a semiminim, and it creates a 3:2 proportion with the minim; it is used in the same way in the anonymous *Notitia del valore*. But in the first copy of Pipudi's treatise and in three of the copies of *Tractatus figurarum* (Chicago 54.1, Siena L.V.30, and Faenza 117), this grapheme is used for the duple semiminim.

The same note shape is used in other copies of the *Tractatus figurarum* for the imperfect minim, which creates sesquitertia with the minim proper. Chicago 54.1, Rome 5321 and Washington LC J6 use it in this fashion, while in the Naples VIII D 12, Pisa 606, and Faenza 117 copies the grapheme is drawn upside-down. The same shape creates sesquitertia in the first copy of Pipudi's treatise; there they are called addite. Lastly, a very similar grapheme is given in Siena L.V.30 for this imperfect minim, but it is unclear whether the shorter stem as shown below is an accident of space or whether it is actually meant to be a visually distinct grapheme. My inclination is toward the latter, given that the scribe had enough room between the grapheme and the text to have extended the stem if he had desired to do so, and if the graphemes had been copied before the text, then he would have had no need to preemptively shorten them. These imperfect minims are given in Figure 34.

Figure 34: Italian Semiminim Graphemes

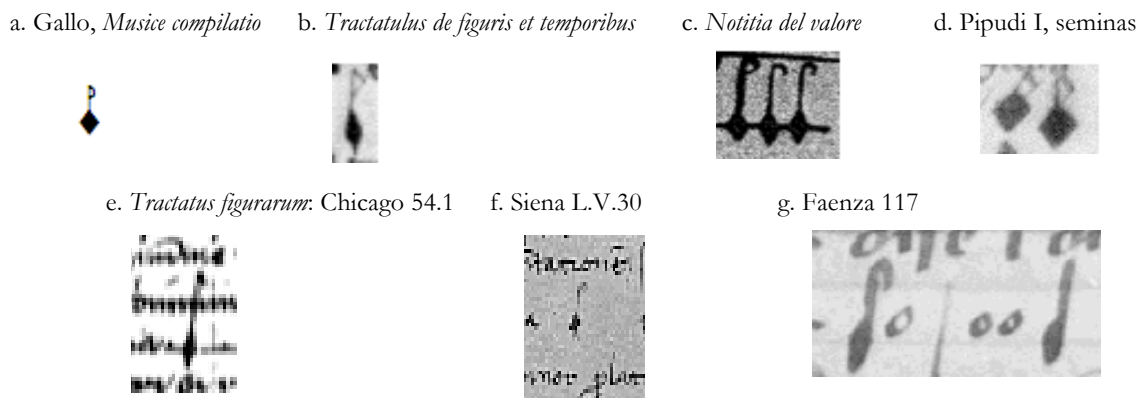
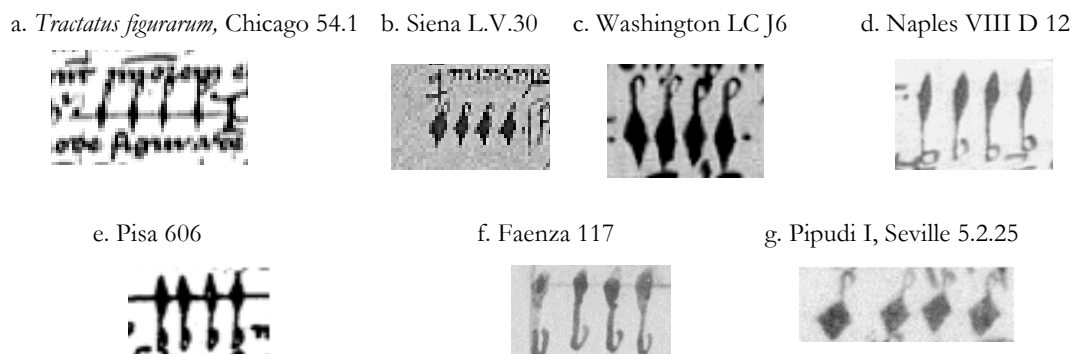


Figure 35: Italian Imperfect Minims or Addite



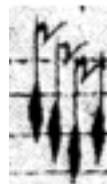
The copies of these treatises clearly demonstrate that the right-facing \blacklozenge^p was a popular choice in Italian theory up to and past the 1390s, though it did not always signify the same name or duration.²⁷ The flourished version of this note shape was also quite common;

²⁷ One last treatise may be appended to this list. The anonymous *Divina auxiliante gratia* was copied into no less than seven Italian manuscripts from the 1420s onward; the treatise does not mention note values smaller than a minim, yet in one musical example of the Pisa 606 copy, this grapheme is used. While I cannot

it represented the duple semiminim in the first copy of Johannes Pipudi's treatise. In this instance, it is possible that the scribe has leaned some graphemes to one side or compressed them to avoid overlapping with words, as shown in Figure 35 below. It appears in musical examples in the Florence 734 copy of Anonymous V's *Ars cantus mensurabili mensurata per modos iuris*, but no text shares its name or proper duration. In one instance, it is used in a 3:2 proportion with the minim, but in other instances the relationship seems to be duple. As I mentioned in earlier chapters, though, this author is not in favor of the semiminim and only records the unit as others used it; this grapheme is clearly used in this manuscript to depict durations smaller than the minim. Lastly, one of the myriad copies of the *Lucidarium* by Marchetto of Padua (the Italian Brussels 4144) also uses the flourished figure in one of its musical examples; the Brussels scribe must have updated the examples to reflect current practice. These sources demonstrate that this grapheme was also commonplace in Italy around the turn of the fifteenth century.

Figure 36: Italian Grapheme with Numeral 2 Flag

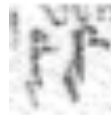
a. Pipudi I, Seville 5.2.25 b. Anonymous V, Florence 734 c. Marchetto, *Lucidarium*, Brussels 4144



therefore point to the Pisa copy of this treatise and say that this note value was considered a semiminim (though it is likely it was considered a member of the semiminim family), I can at least put forth the insertion of this altered example as evidence of the active use of this grapheme in Italy during the late fourteenth and early fifteenth centuries.

The void equivalent of this grapheme, shown below in Figure 36, was also in use during this time period; it signifies the duple semiminim in the Catania D 39 copy of the *Tractatus figurarum*, though it was also used in in both the Florence 734 and Florence Plut.29.48 copies of Anonymous V, as demonstrated in Figure 21.

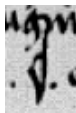
Figure 37: Italian Void Grapheme with Numeral 2 Flag



Although coloration as discussed in Murisian theory is constructed to imply a shift from perfect to imperfect tempus or prolation, void notation in Italian sources does not carry the same meaning. The void flagged grapheme shown above has the same semantic significance as its blackened counterpart. Similarly, the void minim grapheme represents the duple semiminim in four copies of the *Tractatus figurarum*: Pisa 606, Naples VIII D 12, Washington LC J6, and the first copy in Seville 5.2.25. As far as I am aware, however, this grapheme is not used for the semiminim in any other treatise during this time period.

Figure 38: Italian Void Grapheme

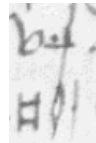
a. Washington LC J6



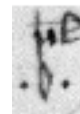
b. Pisa 606



c. Naples VIII D 12



d. Seville 5.2.25 1



A black right-facing semiminim grapheme whose flag continues to travel through its stem is recorded in two sources. In *L'arte del biscanto misurato*, attributed to Jacopo da

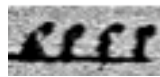
Bologna, it depicts all qualities of semiminim: duple, sesquialtera, or sesquitertia. The semiminim rest uses the same continuous flag. It is also used in Rome 5321 for the imperfect minim and in the second copy of Pipudi's treatise to signify the sesquitertia additas.

Figure 39: Italian Graphemes with Right-facing Continuous Flags

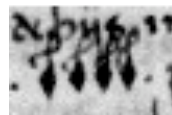
a. Florence Redi 71



b. Florence Redi 71, rests



c. Pipudi II, Seville 5.2.25



d. Rome 5321



Interestingly, midway through this treatise the scribe inexplicably changes to void notation. It appears to be the same hand, and neither a musical reason for the shift nor an explanation of the use of such notation is given in the treatise. If the work does date to the late fourteenth century, however, then it may be the first one that I know of which uses void notation in this way.²⁸ The same graphemes for all the note values are retained, but now they are voided so that the semiminim grapheme listed in the prior example is now hollow, as shown below in Figure 39. This grapheme is found in two other contemporaneous sources: the third copy of the *Tractatus figurarum* in Seville 5.2.25 and the copy in Rome 5321.

²⁸ If it was written by Jacopo da Bologna, then it would have been written before 1386, the approximate date of his death.

Figure 40: Italian Void Graphemes with Right-Facing Continuous Flags

a. Florence Redi 71



b. Rome 5321



c. *Tractatus figurarum* III, Seville 5.2.25



In the *Tractatus de figuris et temporibus*, the right-facing \diamond^p representing the sesquialtera semiminim was listed as an Italian note value. I observed in Chapter III that immediately following this description in the treatise, there is another unnamed note value, eight of which replace four minims. The wording of its description makes it possible, if not probable, that these are also considered Italian semiminims, but they are not explicitly named. In the author's discussion of the French note values, however, few have accompanying names or labels. Instead, each is described according to the way it divides the French mensurations. The minima vacua, or voided minim, is used to create duple, sesquitertia, sesquialtera, and even *duplasexquiquarta* proportional relationships with the minim. In imperfect tempus, minor prolation, though, eight unnamed \diamond can replace one breve, implying a duple relationship with the minim. All of these are shown in Figure 40.

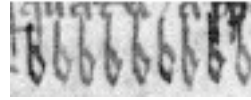
Lastly, the second copy of *De arte cantu* in Seville 5.2.25 and the anonymous *Notitia del valore* in Florence Redi 71 both use a left-facing \diamond^q or \diamond^f for the duple semiminim; the latter manuscript also shows a similarly shaped left-facing semiminim rest.

Figure 41: *Tractatulus de figuris et temporibus*, Seville 5.2.25, Graphemes for Unnamed Small Note Values

a. Italian small note value (semiminim?)



b. French minime vacue



c. French 2:1 note value

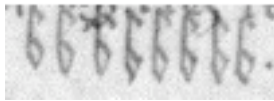
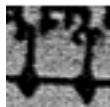


Figure 42: Italian Left-Facing Graphemes

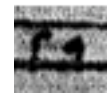
a. Pipudi II, Seville 5.2.25



b. *Notitia del valore*, semiminim



c. *Notitia del valore*, semiminim rest



The Italian sources clearly demonstrate the lack of consensus amongst theorists and scribes as to what a semiminim was. Some theorists use the term to refer to all possible proportional durations; others, borrowing from the French tradition, reserve the label semiminim for duple proportions and appropriate a different term for all others. Similarly, some choose to use the same grapheme for all proportional durations, regardless of whether they are called semiminims, while others distinguish durations from one another through the use of different graphemes. All in all, ten note shapes were used in Italy throughout the late fourteenth and early fifteenth centuries.

In his study of fourteenth-century Italian notation, Marco Gozzi commented that:

“Although the notational signs of the Italian Trecento have traditionally been considered as a unified semiographical system, in fact these signs varied in meaning over time. It would be incorrect, therefore, to consider a single interpretative scheme as valid for all the surviving examples of Italian *ars nova* music, which belong to a chronological span of over a century.”²⁹


This section shows the fluctuation in meaning that Gozzi references; multiple graphemes for semiminims and other related small note values had multiple visual significations. While therefore there is no one single definition that can apply to each one of these possible combinations of name, duration, and shape, I do feel that the Italian conception of these note values as proportions with specific delimitations in rhythmic duration and written shape not only links apparently disparate phenomena back together but illuminates the changes that Gozzi perceives in the Trecento and early Quattrocento.

IV.2.4: French Sources

The preference in semiminim graphemes is not nearly as clear-cut in France as in any of the previous regions. Of the seven treatises that provide graphemes without descriptions, only three are copied in potentially French manuscripts, and as I will show, these may reveal foreign influence. The rest are copied in Italian manuscripts; as such, they shed more light on Italian preferences than they do French.

The anonymous treatise *Compendium totius artis motetorum* is found only in the mid-fourteenth century manuscript Erfurt Ca.8° 94, might be the earliest. While this is an otherwise largely German manuscript, the third section containing this treatise is thought to

²⁹ Marco Gozzi, “New Light on Trecento Notation,” *Reverare* 13 (2001): 6.

be of possible French origin according to the RISM catalogue. I have not been able to investigate this manuscript first-hand, but the grapheme as reported in Johannes Wolf's 1908 article is the right-flagged . This grapheme has already been shown to be popular to the point of exclusivity in England, and it was textually described in the earlier French "*Cum de mensurabili musica*;" this manuscript might therefore be the earliest source for this grapheme in France.





The second Berkeley treatise is found in three manuscripts, two of which are purportedly French: the Berkeley manuscript and London 23220.³⁰ The Berkeley manuscript is the earlier of the two, dating to c. 1375; it offers two different graphemes, one the familiar right-facing  and the other a version of this shape with its flag shaped like the numeral 2:  or . The London manuscript also uses this grapheme, but the other appears to be the central European angled ; all of these are shown below in Figure 42.

Figure 43: Berkeley II, Semiminim Graphemes in French (?) Sources

a. Berkeley Manuscript



b. London 23220



³⁰ The RISM catalogue questions whether London 23220 may be French; no other possibilities for provenance are given.

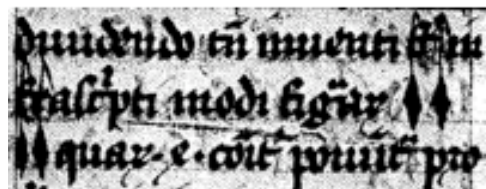
In Chapter III I raised the question of Italian influence due to the language used in Berkeley II; the graphemes found in these two sources also call for speculation about possible foreign influences. The numeral 2 grapheme has only thus far been found in Italian manuscripts, but the angled grapheme is predominantly central European, with one exception pointed out thus far. The third Berkeley treatise, as copied in the Berkeley manuscript, uses the sharply angled flag on its semiminim rest: ♩^\flat . To that must be added one more exception. In the second Berkeley treatise, additae are proportional sesquitertia figures; in the London manuscript they are written with the right-facing ♩^\flat , but in the Berkeley manuscript they use the angled ♩^\flat . These are shown below in Figure 43.

Figure 44: Berkeley II, Additae Graphemes

a. London 23220








b. Berkeley Manuscript



The Italianate language in Berkeley II now coupled with the presence of the Italianate ♩^\flat or ♩^\flat jars with the use of the central European ♩^\flat in both of these possibly French treatises. However, as I mentioned in Chapter III, several tenuous possibilities may link this treatise to the papal chapel in Avignon: the later attribution to Goscalcus; the presence of unique mensuration signs only in this set of treatises and in the ballade *En nul*

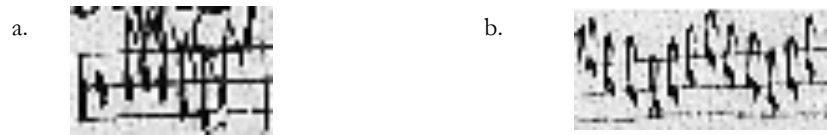
estat, attributed to Goscalch in the Chantilly codex; and the possibility that Goscalch had worked alongside other Chantilly composers in the Avignon chapel. Perhaps Avignon, acting as a melting pot for mensural theory from western and central Europe, is a more accurate provenance for these sources, but without further corroboration this must remain, for now, only a tantalizing suggestion.





Lastly, the late fourteenth-century French treatise *De semibrevis candatis* is found in the early fifteenth-century Paris 1257; RISM states that its provenance is unknown. The musical examples in this treatise are copied in a less than elegant fashion: the semiminim grapheme wavers between the right-facing  and the more angled . It is possible that all graphemes were meant to be the smoother flagged shape and the haste of copying created harsher angles instead, but it is equally possible that the angular grapheme was the intended shape since the more curved hooks appear later in the manuscript.


This work was written specifically to discuss the various notes created by adding stems to the semibreve; one of them is the semiminim, which is here worth half a minim regardless of mensuration. While no other semiminim-family units are named as separate note values, red or void minims are used to create sesquitertia proportions in perfect prolation (imperfect prolation is not discussed). In addition to these unnamed note values, the author also describes the use of the downward-stemmed semibreve , worth anywhere from two to six minims depending on context; the dragma, , worth two minims, and the *bifforcata*, worth four minims and shaped like a semibreve with a descending stem that then forks at the bottom: . In other treatises, the dragma's shape is in fact described in such a

manner; here it is only stated as though it was already familiar to the readers. Given that this treatise appears to be incomplete, it is possible that a further discussion of that note value occurred elsewhere.

Figure 45: *De semibrevis caudatis*, Paris 1257, Semiminim Graphemes



To some small extent, then, the angled  might have been used in France in the fourteenth century, though not always for the semiminim. Perhaps the author of the Melk treatise was aware that this shape had currency in France, but that the more curved  was growing in favor; his descriptions of modern and traditional semiminim graphemes may reflect French practice. The presence of the flourished  or  also suggests Italian influence. The sources in which these graphemes are found – the Berkeley manuscript, London 23220, and Paris 1257 – are either of unknown provenance or have had their French origins called into question; as such, the possibility must remain open that they have ties to Italian and central European traditions.

The other five French treatises are only found in non-French manuscript sources. I have already mentioned the two graphemes copied from the lost *De minimis notulis* in Strasbourg 222; Coussemaker transcribed another French treatise, *Liber musicalium*, from that source as well. It also purportedly shows the right-facing , but since this treatise has no concordances and its source is lost, it cannot be corroborated.

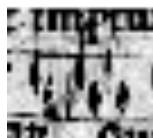
In arte motetorum might have been written as early as the 1320s. Yet its only extant source, the Belgian manuscript Ghent 70 (71), dates to almost two centuries later: 1503-4. The graphemes for the semiminim and its corresponding rest, shown in Figure 45 below, have no textual description to corroborate their physical shape. This angled form, found thus far in central European sources and in French treatises of unknown or questionable provenance, might also have been prevalent in Belgium in the early sixteenth century; given that this date falls so far outside the boundaries of the present discussion and that this is the only source from modern-day Belgium in the entirety of this study, the presence of this grapheme sheds no light on the notational practices in play in the treatise's original milieu.

Figure 46: *In arte motetorum*, Ghent 70 (71), Semiminim Graphemes



The remaining three French treatises are all found in late fourteenth- or early fifteenth-century Italian manuscripts. The former *Ars Nova* treatise *Sex minime possunt poni* was copied into Rome 307; it uses the right-facing \blacklozenge for its semiminim, as shown below in Figure 46.

Figure 47: *Sex minime possunt poni*, Rome 307, Semiminim Graphemes



The same note shape is found in the Chicago 54.1 copy of Petrus de Sancto Dionysio's *Tractatus de musica*; I again refer the reader to Appendix A for more information on this work. The *Tractatus* does not actually mention the semiminim; the smallest named and defined note value is the minim. But in the musical examples of the different gradus levels of mensural notation, the scribe includes the \blacklozenge next to the minim, as shown below in Figure 47. It would be a fallacy to construe from this example that Petrus knew of or intended to describe the semiminim; since the treatise itself purportedly dates from the 1320s but the Chicago manuscript from c. 1391, the grapheme may be a later scribal addition. Even so, though, the manuscript points to the fact that this grapheme was known and used in late fourteenth-century Italy, even if this instance does not provide a name or description.

Figure 48: Petrus de Sancto Dionysio, *Tractatus de Musica*, Chicago 54.1, Flagged Grapheme



Lastly, the second Berkeley treatise is also found in an Italian source: the mid-fifteenth century manuscript Catania D 39. Two graphemes for semiminims are shown in Figure 48: a black flagged shape with a numeral 2 flag, and a voided version of that shape. The latter is also used for the addite. As I have shown above, this flourish is an exclusively Italian trait; in all but one instance, this grapheme is only found in Italian manuscripts. The


only exception is this treatise: in both of its concordant sources, the purportedly French Berkeley manuscript and London 23220, the blackened version of this grapheme appears.

Figure 49: Berkeley II, Catania D 39, Graphemes for Semiminims and Addite




It is therefore difficult to discern what the notational preference for semiminim grapheme might have been in France. Four treatises (*In arte motetorum*, *Cum de mensurabili musica*, and the portion of Petrus de Sancto Dionysio's *Tractatus de musica*, plus one copy of Berkeley II) are found in foreign sources, while the provenances of Paris 1257 (*De semibrevis caudatis*), the Berkeley manuscript (Berkeley II and III), and London 23220 (Berkeley II and III and the *Libellus cantus mensurabili*) are all either unknown or have been called into question in this study. Graphemes for three other treatises cannot be corroborated; the Erfurt manuscript containing *Compendium totius artis motetorum* has been unavailable to me, while the two in the lost Strasbourg C 22 have no concordances against which their contents can be checked. The only French treatise that was copied into a manuscript of definite French provenance, therefore, is the anonymous *Compendiolum artis veteris ac novae*, yet this source contains the otherwise unknown grapheme \blacktriangledown . As a result, we actually have little theoretical evidence to demonstrate what note shapes were commonly accepted as semiminims in France.

However, the testimony of the anonymous author of the *Tractatus de figuris et temporibus* that \diamond was a French figure, coupled with the presence of \blacktriangledown in several French









sources copied elsewhere, points to the prominence of this particular grapheme in France, a likelihood furthered by examining the practical manuscript tradition. The black  is the only grapheme found in French performing manuscripts; for example, it is used in Apt 16bis and Ivrea 115, both late fourteenth-century French sources.

IV.3: Anomalies

In the previous chapter on duration and substance, I pointed out a number of apparent anomalies to the geographical patterns evident in the theoretical treatises. As I showed, some of the anomalies are actually not as irregular as they initially appear; a study of the graphemes in these sources largely helps re-align these treatises with regional practices.

In *De minimis notulis*, the terms *semiminim* and *minima semiminimarum* at first seem to break the pattern of French vocabulary. Later in the treatise, though, the terms are exchanged and thus uphold the pattern. The graphemes Coussemaker transcribes correspond to the latter usage of the terms, such that the right-facing  is given for the *semiminim*; this implies that the original use of the terms, that which appears to be anomalous, may actually be a case of scribal error.

Johannes Pipudi and the authors of *Ars cantus mensurabilis mensurata per modos iuris* and *Tractatus figurarum* all use atypical language, in that each reserves the term *semiminim* for the duple proportion and uses a different term for the unit that creates the sesquitertia proportion. The latter two choose the term imperfect minim, while Pipudi calls them *additas*. Yet all three were so heavily influenced by Johannes de Muris that the authors, though retaining an Italian style of description for these note values, likely borrowed the

terms *additas* and *imperfect minim* from French practice. Given that Pipudi lived in Avignon for some time, it may be possible that the other two authors did so also, and that they acquired their knowledge of Murisian theory there. The graphemes in all three sources, though, are clearly from the Italian camp. The flourished numeral 2 , the left-facing , the continuous , and the voided    and  are found alongside the more general  in multiple copies of these three treatises. Despite their terminological aberrances, the graphemes used in these sources are all Italian.

The second Berkeley treatise, the last atypical source mentioned in Chapter III, is therefore the only real anomaly in this chapter. The author uses the more Italianate verb *ponere* to describe the relationships between minims and semiminims, suggesting that semiminims are proportions and not, as in other French sources, discrete note values. Because of that Italianate language, I questioned whether this treatise could have an Italian provenance. The choices for semiminim grapheme found in the copies of this treatise encourage me to pursue the question of influence further.

A possible scenario that could explain the atypical portrayals of the semiminim is as follows. The author of the first three Berkeley treatises might have been an Italian living in France – maybe Avignon, like Johannes Pipudi and countless others – and became aware enough of Murisian theory to combine it with more typically Italian language. The Berkeley manuscript and London 23220 could therefore both be Avignonese sources, transmitting graphemes that demonstrate Italian and central European influence; the Italian Catania D 39 copy thus retained the more Italianate graphemes. This grouping of treatises warrants a much closer re-reading than what is possible within the current study, and I plan to continue

my investigations in the near future. But regardless of whether a new investigation might unearth more clues about the provenance of these sources, the treatise demonstrates once again that the connections between French and Italian mensural theory were tightly interwoven and that Avignon should continue to be investigated as a possible hub for the exchange not just of musical style but also of theoretical knowledge.

IV.4: Conclusions

In this chapter, I have shown that the visual representation of the semiminim (and other related proportional note values) was far from codified in fourteenth-century theoretical literature. The plethora of grapheme options found in the manuscript sources (see Table 3) fall easily into the same patterns of provenance that I have explored in the previous two chapters. But these different graphemes are not just superficial visual preferences. Each grapheme represents a specific choice made by a theorist or scribe to link his understanding of names, durations, and substances with the appropriate visual representative.

This choice might have been a conscious one, a deliberate decision to either reproduce what was written in one's exemplar or to veer in a new direction; it might also have been subconscious, with scribes substituting familiar graphemes in place of ones that were less familiar. But none can be conclusively labeled mistakes, even if at first glance they seem to be anomalous. The majority of graphemes occur in multiple sources, even of multiple provenances. Yet the unique or rarely encountered graphemes are all textually described in the manuscript sources, marking them not as scribal errors but as deliberate























creations. This reevaluation of the graphic representation of note values in theoretical treatises thus acts as a window into the myriad attempts by theorists and scribes to define (and re-define) the new phenomenon of the semiminim.

Table 3: Chronological List of Fourteenth-Century Semiminim-Family Units

<i>Author</i>	<i>Treatise</i>	<i>Terminology</i>	<i>Substance</i>	<i>Relationship to the Minim</i>	<i>Grapheme</i>
Marchetto of Padua	<i>Lucidarium</i>	—	—	—	$\overset{p}{\blacklozenge}$ (Brussels 4144)
Marchetto of Padua	<i>Pomerium</i>	—	Proportion?	Unclear	—
Anonymous	<i>Rubrice Breves</i>	—	Proportion?	—	—
Anonymous	[<i>Ars Nova</i>] “ <i>Cum de mensurabili musica</i> ”	Semiminim	Discrete (Proto-proportion)	2:1	$\overset{p}{\blacklozenge}$ \curvearrowright (London 21455)
Anonymous	[<i>Ars Nova</i>] “ <i>Sex minime possunt poni</i> ”	Minim Semiminim	Discrete	2:1	$\overset{p}{\blacklozenge}$ (Rome 307)
Anonymous	[<i>Ars Nova</i>] “ <i>Sex sunt species principalis</i> ”	Minim Semiminim	Discrete	2:1	—
Anonymous III	<i>Compendiolum artis veteris ac novae</i>	Semiminim	Discrete (Proto-proportion)	2:1	∇ (Paris 15128)
Petrus de Sancto Dionysio	<i>Tractatus de Musica</i>	—	—	—	$\overset{p}{\blacklozenge}$ (Chicago 54.1)
Jacobus de Liège	<i>Speculum Musicae</i>	Semiminim Semiminor	—	—	\blacklozenge (Paris 7207)
Anonymous	<i>Ars discantus IX</i> “ <i>Partes prolationes quot sunt</i> ”	Semiminim	Discrete	3:1	—
Anonymous	<i>Ars discantus III</i> “ <i>In arte motetorum</i> ”	Semiminim	Discrete	2:1	$\overset{p}{\blacklozenge}$ (Ghent 70 (71))
Anonymous VIIb	<i>De diversis manieribus II</i>	—	Proportion	[2:1?]	—
Johannes Torkesey	<i>Declaratio trianguli et scuti</i>	Simpla	Discrete	2:1 or 3:1	$\overset{p}{\blacklozenge}$ (Rome 1146, London 21455, London Lansd. 763) $\overset{p}{\blacklozenge}$ (London 21455, London Lansd. 763)

Anonymous	<i>Regule Magistri Johannes de Muris</i>	Simpla	Discrete	2:1	$\overset{p}{\blacklozenge}$ (London Lansd. 763)
Johannes de Muris (?)	<i>Libellus cantus mensurabilis</i>	Semiminim	Discrete	2:1 or 3:1?	$\overset{p}{\text{P}}$ (London 23220, London 10336, London Lambeth 466, Cambridge 410, Porto 714, Prague XI.E.9, Washington LC J6, Pisa 606, Naples VIII.D.12, Chicago 54.1, Brussels 785, Brussels 4149, Florence Redi 71) $\overset{q}{\text{P}}$ (Florence Redi 71, Brussels 4149) $\overset{p}{\text{P}}$ (Rome 5321, Catania D 39, Siena L.V.30, Faenza 117, Seville 5.2.25 (twice), Einsiedeln 689, Florence 806)
Johannes Vetulus de Anagnia	<i>Liber de musica</i>	Minim	—	—	$\overset{p}{\blacklozenge}$ (Rome 307)
John of Tewkesbury	<i>Quatuor Principalia</i>	Semiminim Crocheta	—	—	—
Johannes Boen	<i>Ars musice</i>	Semiminim	—	—	—
Anonymous	<i>Tractatulus de cantu mensurali seu figurative musice artis</i>	Semiminim	Discrete	2:1 (modern) 2:1 or 3:1 (traditional)	$\overset{p}{\blacklozenge}$ (Melk 950) $\overset{\text{p}}{\blacklozenge}$ (Melk 950)
Willelmus	<i>Breviarum</i>	Minim Crocheta Simpla	Discrete	2:1 or 3:1	$\overset{p}{\blacklozenge}$ $\overset{p}{\text{P}}$ (Oxford 842)
Anonymous	<i>Compendium totius artis motetorum</i>	Semiminim Minimis additis	Discrete Proportion	2:1 4:3	$\overset{p}{\blacklozenge}$ [$\overset{p}{\blacklozenge}$ (Erfurt Ca.8° 94)] $\overset{p}{\blacklozenge}$ [$\overset{p}{\blacklozenge}$ (Erfurt Ca.8° 94)]
Philipoctus de Caserta?	<i>Tractatus figurarum</i>	Semiminim	Discrete	2:1	$\overset{p}{\blacklozenge}$ (Chicago 54.1, Faenza 117) $\overset{p}{\blacklozenge}$ (Siena L.V.30) $\overset{p}{\blacklozenge}$ (Seville 5.2.25 2, 3, London 4909, Catania



		Imperfect Minim	Proportion	4:3	D.39, Rome 5321) \diamond (Seville 5.2.25 1, Washington LC J6, Naples VIII.D.12, Pisa 606) \circ (Rome 1377) \blacklozenge (Faenza 117, Rome 1377) \blacklozenge (Chicago 54.1, London 4909, Naples VIII.D.12, Pisa 606, Rome 5321, Seville 5.2.25 1, 2, Siena L.V.30, Washington LC J6) \diamond (Catania D 39, Seville 5.2.25 3)
Anonymous	<i>Tractatulus de figuris et temporibus</i>	Semiminim (Italian)	Proportion	3:2, 8:4	\blacklozenge \blacklozenge (Seville 5.2.25)
		Unnamed (French)	Proportion	8: \blacksquare in C (2:1)	\diamond (Seville 5.2.25)
Johannes Pipudi	<i>De arte cantus</i>	Seminas (Semiminimas?)	Proportion	2:1	\blacklozenge \blacklozenge (Seville 5.2.25 copy 1) \blacklozenge (Seville 5.2.25 copy 2)
		Additas	Proportion	4:3	\blacklozenge (Seville 5.2.25 copy 1) \blacklozenge (Seville 5.2.25)
Goscalcus?	<i>Berkeley II</i>	Semiminim	Discrete	2:1	\blacklozenge \blacklozenge (Berkeley, London 23220, Catania D 39) \blacklozenge (London 23220) \diamond \blacklozenge (Catania D 39)
		Additas	Proportion	4:3	\blacklozenge (Berkeley) \diamond (Catania D 39) \blacklozenge (London 23220)
Goscalcus?	<i>Berkeley III</i>	Semiminim	—	—	\blacklozenge (Berkeley) \blacklozenge (Catania D 39)
Johannes Hanboys	<i>Summa</i>	Semiminor Crocheta	Discrete	2:1 or 3:1	\blacklozenge \blacklozenge (London 8866)

		Minim	Discrete	2:1 or 3:1	  (London 8866)
Anonymous V	<i>Ars cantus mensurabilis mensurata per modos iuris</i>	Semiminim	Proportion	2:1	 (Florence 734)  (Florence Plut.29.48)
		Imperfect Minim	Proportion	3:2 or 4:3	 (Florence Plut.29.48)  (Florence Plut.29.48)
Thomas Walshingham	<i>Regule Magistri Thome Walsingham</i>	Crocheta Simpla	—	—	 (London Lansd. 763)
Anonymous X	<i>De minimis notulis</i>	Semiminim	Proportion or Discrete	4:3 or 2:1	[ (Strasbourg C 22)]
		Minime semiminimarum	Discrete or Proportion	2:1 or 4:3	[ (Strasbourg C 22)]
Anonymous	<i>De semibrevibus caudatis</i>	Semiminim	Discrete	2:1	  (Paris 1257)
Anonymous	<i>Notitia del valore</i>	Semiminim	Proportion	2:1 or 3:2	 (Florence Redi 71)
Jacopo da Bologna?	<i>L'arte biscanto misurato</i>	Semiminim	Proportion	2:1, 3:2, 4:3	  (Florence Redi 71)
Anonymous	<i>Liber musicalium</i>	Semiminim	—	—	[ (Strasbourg C 22)]
Anonymous	<i>Musice compilatio</i>	Semiminim	Proportion	2:1, 3:2, 6:4, 4:3	[ (Milan M.28.sup)]
Anonymous	<i>Omni desideranti notitiam</i>	—	—	—	 (Chicago 54.1)
Anonymous	<i>De musica mensurabili</i>	Semiminim Semiminimissima	Proportion	2:1 or 4:3	  (Rome 307)
Anonymous	<i>De musica mensurata</i>	Semiminim	Discrete	2:1	  (Kremsmünster 315)
Anonymous	<i>Divina auxiliante gratia</i>	—	—	—	 (Pisa 606)

INTERLUDE:

In Chapters II-IV, I have shown that as opposed to the modern definition of the semiminim, where the (sole) term refers to a single duration and note shape, the extant fourteenth-century theoretical literature reveals a much more varied landscape. There were multiple names, philosophical conceptions, rhythmic durations, and visual shapes for these new note values, all of which demonstrate the efforts by theorists to define what later became our semiminim. These efforts drew on regional theoretical traditions, such that England, France, central Europe and Italy each constructed different paradigms for small note values.

In the majority of western and central Europe at this time, the semiminim was a discrete, individual note value. It could play an active role in mensural notation by imperfecting larger note values either singly or in pairs, and it could be used individually. It was a subdivision of the minim, just as the minim was a subdivision of the semibreve, and it was generally considered to be half of the minim on the continent, where it was most frequently called semiminim. In England, though, the terms ‘simpla’ and ‘crocheta’ were most popular; there, the minim could either be binary or ternary, so the crocheta or simpla was worth either one half or one third of the minim.

The most common grapheme in these areas was the right-facing ; this shape was used exclusively in England, but was also seen in central European and French sources. The grapheme most preferred in central Europe was the more sharply angled ; this also

appeared in some French sources of unknown or disputed provenance. Murisian theory was being imported with enthusiasm into central Europe during the same time period as the writing of these treatises; it is possible that the preference for the angled \blacklozenge is in fact a remnant of French tradition which subsequently fell out of practice in more western areas. The author of the Melk treatise, who distinguishes between modern and traditional semiminims, might therefore have been referring to French manners of notation.

The Italian discussion of the semiminim is, by and large, completely different. The term semiminim is also the most common, but here it refers to proportional figures, not discrete and individual ones. The semiminim has no one specific duration but can create any or all of the commonly used proportions: duple, sesquialtera, and sesquitercia. Many of the treatises present only one grapheme for the semiminim, while others offer more than one, textually specifying which grapheme is intended to represent which proportion. In the cases of treatises such as *De arte cantus* and *Tractatus figurarum*, where other proportional figures are given different names, the semiminim is graphically distinguished from other small note values. The wide variety of graphemes found in Italian manuscript sources within a very small time period – a total of ten – thus points to this attempt to link particular note shapes with particular proportional relationships.

To summarize, across the fourteenth century I have found a total of seven different names, two main philosophical essences, five different durations, and an astonishing twenty-two graphemes for semiminims and other similar small note values. Because these different aspects combine themselves in specific ways depending on geographic preference, as I have explained above, it would be remiss to continue to label all of them as a semiminim. Instead,

I propose that we acknowledge each of these combinations of name, duration, substance, and grapheme as members of the semiminim family.

The regional preferences in semiminim-family units point to the influx of Murisian theory into foreign areas, especially central Europe and Italy. With regard to rhythmic notation, Italy adopted and adapted the French *prolaciones*, the concepts of perfection and imperfection, the *punctus additionis*, and coloration; scholars have referred to this adaptation as an ‘international’ or ‘mixed’ style of notation that blossomed around the last third of the fourteenth century, eventually becoming standard practice in the fifteenth century.¹ In his dissertation and recent articles, Jason Stoessel also adds the later creation of special note shapes affiliated with the ‘*ars subtilior*,’ a subset of or companion to the mixed style.² To this list I would now like to add the Italian adoption of the French terms ‘imperfect minims’ and ‘additae’ for proportional durations usually called semiminim, and the reservation of the term ‘semiminim’ for duple proportions.

In Part Two, I will add another element to this list: the creation of an entirely new definition for the semiminim proper. In Chapter V, I look at the treatises that discuss the

¹ A brief list of some of the relevant literature includes the following:

Apel, *The Notation of Polyphonic Music*; Balensuela, *Ars Cantus Mensurabilis Mensurata per Modos Iuris*; Margaret Bent, “A Contemporary Perception of Early Fifteenth-Century Style,” David Fallows, ed., *Oxford, Bodleian Library, MS. Canon. Misc. 213* (Chicago: University of Chicago Press, 1995); Ursula Günther, “Das Ende der Ars Nova,” *Die Musikforschung* 16 (1963): 105–120; Katz, “The Earliest Sources for the *Libellus*,” Long, “Musical Tastes in Fourteenth-century Italy,” Long, “Francesco Landini and the Florentine Cultural Élite,” *Early Music History* 3 (January 1, 1983): 83–99; John Nádas, “The Transmission of Trecento Secular Polyphony: Manuscript Production and Scribal Practices in Italy at the End of the Middle Ages” (PhD diss., New York University, 1985); Schreier, *Tractatus Figurarum*; Yolanda Plumley and Anne Stone, *A Late Medieval Songbook and Its Context: New Perspectives on the Chantilly Codex (Bibliothèque Du Château De Chantilly, Ms. 564)* (Turnhout: Brepols, 2009).

² Jason Stoessel, “Symbolic Innovation: The Notation of Jacob De Senleches,” *Acta Musicologica* 71, no. 2 (July 1, 1999): 136–164; Stoessel, “The Captive Scribe: The Context and Culture of Scribal and Notational Process in the Music of *Ars Subtilior*” (PhD diss., University of New England, Armidale, Australia, 2002).

highly complicated notation, involving among other things coloration, special note shapes, and multiple mensuration signs, which many refer to as the *ars subtilior*. At the same time, a number of treatises were written that did not experiment with the same types of proportional or extra-mensural notation. In Chapter VI, I discuss treatises that do not use such complex notation; they also treat semiminim-family units in increasingly more specific, narrow terms. In both chapters, I stop my investigation c. 1440, since theorists around that point ceased to describe complex proportional notational systems and began to subdivide the semiminim into even smaller note values. These treatises demonstrate that the Italian absorption of French theories affected small note values, slowly merging the two respective approaches to the semiminim proper into an amalgamated definition with a new graphic option. This option was used in Italian theoretical and practical sources by the end of the fourteenth century and eventually was reintroduced to western Europe, leading to the definition of the semiminim most common today.

If altogether these treatises and manuscript sources give us a broad, macrocosmic picture of mensural theory and notation in the fourteenth and early fifteenth centuries, then each copy of each treatise is its own microcosm, an encapsulation of what, at that particular moment, that theorist or scribe believed the semiminim (by whatever name or definition) to be. The vagaries of history have heretofore silenced these discourses due to the all too frequent tendency to oversimplify arguments from a teleological perspective, but the genealogy of the semiminim as illuminated through the theoretical treatises demands recontextualization.



PART TWO: Merging Notational Practices, c. 1370 - c. 1440

CHAPTER V

The Semiminim in ‘a More Subtle Art’

*“Sic nunc successive venientes, habentes et intelligentes que
primi magistri reliquerunt maiores subtilitates per stadium
sunt confecti ut quod per antecessores imperfectum
relictum fuit per successors reformetur ... quia esset
multum inconueniens quod illud quod potest
pronuntiari non posset scribe ...”*

So, since those who come later hold and understand
the things that the earlier masters leave behind,
greater subtleties are accomplished through earnest
striving so that what was left imperfect by our
predecessors may be reformed by their followers ...
because it would be very incongruous for that which
can be performed not to be able to be written ...”

✎ Philippoctus da Caserta? *Tractatus figurarum*¹

The exchange of knowledge across western and central Europe created many opportunities for elements of local practices to be appropriated in other areas. As a result, the notational milieu in the late fourteenth and early fifteenth centuries was becoming more and more symbiotic. Contact with multiple theoretical traditions exposed not just conflicts between these systems, but also myriad ways to supplement one’s own practice with rudiments of others. As I will show in these last two chapters, an exploration of the refinement of the

¹ Trans. Schreier, *Tractatus figurarum*, 66-73.

definitions of small note values illuminates the continued merging of Murisian and Marchettan theories into new notational styles.

As theorists attempted the translation or incorporation of other traditions into their own, one of the resultant concerns was the relationship between note values. The centrality of the minim in French theory was diametrically opposed to that of the breve in Italian theory, such that while the four *prolaciones* each had a counterpart in the *divisiones*, the different mensural combinations in each system created different inherent proportions. In structure, pitch, mensuration, and rhythm, proportion was already a known element. Rhythmic proportions could be represented both extrinsically, through the use of mensuration signs, canons, numerals, and so forth, and intrinsically, through the shapes and colors of the note values themselves. The desire for specific notation, combined with the need to graphically distinguish multiple types of proportions, led to the invention of complex note shapes along with other notational techniques. In this chapter, I examine the relationships between the intrinsic semiminim-family units and the proportional notational concepts that affected them.

The first is *polymensuralism*, defined by Jason Stoessel as the “simultaneous use of different divisions of musical time in each voice of a composition.”² Diminution and

² Stoessel, “The Captive Scribe,” 20. This practice is also noted by Laurenz Lütteken and Andreas Jaschinski:

“Die möglichen Irregularitäten der *musica mensurabilis* werden hier zum Prinzip erhoben: Verkleinerung der Notenwerte (was die kompositorische Bedeutung der *modus*-Ebene zunehmend einschränkt), auffällig häufiges Vorkommen von Synkopen, Verschiebung von *color* und *talea* in den Motetten (schon sieben Beispiele in I-IV) und vor allem die Kombination verschiedener Mensurzeichen in verschiedenen Stimmen.

The possible irregularities of *musica mensurabilis* will here be made a principle: reduction of note values (which the compositional significance of the *modus*-level increasingly restricts), strikingly high occurrences

augmentation, the practices of shortening or lengthening the sounding value of written notes according to a predetermined ratio, were known at least as early as Johannes de Muris. In Recensio B of the *Libellus*, the only definition of semiminim units is found in the passage on diminution, while the use of the semiminim has been cited as the main instigation for the adoption of augmented notation.³

The invention of new, more specific note shapes, distinct from the main parts of prolation, was already occurring in the earliest treatises involved in this study. The same can be said of coloration, the use of red or occasionally void notation to effect temporary changes in mensuration or tactus. Toward the end of the fourteenth century, colored note shapes began to be emancipated from their hierarchies and instead began to be used as independent note values. Also, from the 1370s through the 1440s, eleven treatises described the creation of composite note shapes with specific proportional or extra-mensural durations, which used graphical elements of pre-existing note shapes as signifiers of their original note value's duration. This manipulation both reflected and effected changes in the semiminim's conception, such that more and more the unit called semiminim was linked to a duple proportion or binary relationship with the minim and a flagged grapheme, either black

of syncopations, adjustments of color and talea in motets (there are seven examples in Ivrea), and *especially the combination of different mensuration signs in different voices* [emphasis mine].”

Laurenz Lütteken and Andreas Jaschinski, *Notation: Mit 81 Abbildungen Und 60 Notenbeispielen* (New York: Bärenreiter, 2001), 119.

³ Bobby Wayne Cox, “‘Pseudo-Augmentation’ in the Manuscript Bologna, Civico Museo Bibliografico Musicale, Q15 (BL),” *The Journal of Musicology* 1 no. 4 (October 1982): 419-448; see p. 422 in particular.

or void. Eventually, the void minim grapheme was also used to represent the semiminim, despite its conflicting use in coloration.

Polymensuralism, diminution, augmentation, and the creation of new note shapes all aided in the codification of the semiminim and also likely helped to create even smaller note values later in the fifteenth century. By investigating the roles that small note values played in these notational techniques, we gain a better understanding both of the evolution of semiminim-family units and the myriad ways in which different notational traditions were adapting to new innovations.

The study of proportional notation in the fourteenth century has until recently revolved largely around an ‘ars subtilior’ period correlating to the presence of the schismatic papacy in Avignon (1378-1418); this period has been thought of as either a subset of or a parallel to an international or mixed style. Yet rhythmically proportional notation, including the four techniques I just mentioned, existed throughout the entirety of the fourteenth and early fifteenth centuries. Therefore, I will first review some of the recent scholarship on the so-called ars subtilior, the international style, and mixed notation, and discuss why I have chosen instead in this chapter to use other terms. I will then briefly discuss polymensuralism, diminution and augmentation, and coloration, with regard to how semiminim-family units were affected by each technique. Lastly, I will present the eleven treatises written between the early fourteenth century and the mid-fifteenth century that use semiminim-family units to create new, proportional or extra-mensural note values. As I will show, multiple theoretical systems were engaged in solving the problem of eliminating ambiguity in musical notation; the manipulation of these small note values in such specific ways not only

highlights their increasingly narrow definitions but also the unique elements of each system that helped shape those definitions.

Along the way, I will rely both on the work of previous scholars and the framework that I have created in the previous three chapters. Scholars have pointed to references to the French prolations and the later adoption of proportional note shapes as evidence of French influence on Italian theory; in addition to these, I will show that the early introduction of void coloration in Italian treatises and manuscripts, the use of the terms imperfect minims or additae for some proportional durations, and the eventual recognition of the semiminim as a subdivision of the minim, are all signposts of the Italian interest in French notational theory. Furthermore, I will show that the French practice of coloration combined with the Italian approach to the proportional semiminim to create new options for the semiminim grapheme in the early fifteenth century. This approach to semiminim-family units and to blended notation as a whole will be the topic of Chapter VI.

V.1: Labeling Musical Style and Period

In an article on the manuscript Bologna Q15, Margaret Bent stated, “It makes little sense to discuss French and Italian music of the early fifteenth century separately.”⁴ The article was published in the 1987 issue of *Musica Disciplina*, an issue that was dedicated to the exploration of an ‘International Style’ in music from 1380 to 1430. This same time period contains what Willi Apel referred to as ‘mixed’ and ‘mannered’ notation, and what Ursula Günther called the ‘ars subtilior.’ I wish here to briefly review the definitions of these

⁴ Bent, “A Contemporary Perception of Early Fifteenth-Century Style,” 183.

different labels and explain why, in these two chapters, I have chosen other terminology to mark developments in notational practice.

V.1.1: 'International Style' and 'Mixed Notation'

The international style is largely defined according to developments made in composed music. Many scholars of fourteenth- and fifteenth-century music have discussed the influence of French texting, voicing, and compositional structure upon Italian compositions, as well as the more rhythmic or notational aspects of coloration, mensurations, and relationships between note values. The theoretical texts I investigate also show that the French-Murisian tradition had incredible influence on Italian, central European, and (to a lesser extent) English theoretical practices.

But 'international' implies that the elements merged from different regions are of equal importance. In both composed music and theory, the predominant element that was assimilated came from the Murisian tradition; while central Europe incorporated some elements of Italian theory, it is difficult to tell whether those elements had not already been affected by the dissemination of Murisian works. The phrase 'international style' thus seems to be misleading; as Gilbert Reaney points out, "even in art, the style is not easy to define, and the international elements are not always separated from *fin-de-siècle* and pre-Renaissance traits."⁵

⁵ Gilbert Reaney, "The 'International' Style and the Oxford Manuscript, Bodleian library, Canonici Misc. 213," *Musica Disciplina* 41, 1380-1430: An International Style? (1987), 15.

In his seminal book *The Notation of Polyphonic Music 900-1600*, Willi Apel introduced the idea of ‘mixed notation.’ His book takes the predominance of the French tradition into account, stating that the new system is largely French but that it retains some special Italian note shapes.⁶ However, he applies this category primarily to highly syncopated music, ignoring many less rhythmically intense compositions that also demonstrate points of congruence between different notational styles; he also fundamentally misunderstood some of the capabilities of the Italian notational systems, mainly the ability to syncopate across the boundaries of the breve. His phrase ‘mixed notation’ thus carries with it some baggage that is no longer valid. For these reasons, my preference in these two chapters is to refer to the merging of Murisian and Marchettan traditions, and the subsequent reintroduction of Franco-Italian theory into the rest of Europe, as blended or amalgamated notational styles.

V.1.2: The ‘Ars Subtilior’

The complicated notation found in composed music of the late fourteenth and early fifteenth centuries has been the subject of centuries of scholarly inquiry. Willi Apel first described it as a ‘mannered style’ in his book on notation. He called it “a phase of unparalleled complication and intricacy” in which musicians moved past the style of the Ars Nova in order to experiment with “complicated rhythmic tricks and ... highly involved methods of notating them.” He labeled the compositions written in this complicated notational style “intellectual sophistries ... mere tricks of affected erudition [and] ...

⁶ Apel, *The Notation of Polyphonic Music*, 385.

‘pathological cases’.”⁷ Apel also noted that what he called Ars Nova, mannered style, and later mixed style were all in use around the turn of the fifteenth century, explaining their simultaneous popularity by attributing each to particular locations. The Ars Nova and mixed style belonged mainly to France and northern Italy, while the mannered style was placed tentatively in the Dijon milieu. Due to the paucity of information about fourteenth-century music available to him, though, Apel doubted whether such a thing as a mannered style or period was historically accurate.

Despite Apel’s reservations, later scholars continued to point toward this complicated style of notation as its own historical epoch. It was Ursula Günther who, in her article “Das Ende der Ars Nova,” first proposed the term ‘ars subtilior’ as a replacement for Apel’s designation of ‘mannerist.’⁸ She agreed with him that a notationally complex style had been present, but she also referred to this style as a *period* in music, one that supplanted the Ars Nova and preceded the later mixed style to which Apel had referred. This period corresponded more or less to the period of the Great Schism, 1378-1418.

Her main goal in proposing this alternate term was to overcome Apel’s description of the mannered style, which she felt was pejorative and misleading. The idea of a ‘more subtle art,’ in her opinion, was more objective and more accurately reflected theoretical viewpoints contemporary to the music itself. Several prominent theoretical treatises described different musical practices at this time as having *subtilitas* or as being *subtilis*; Nino Pirrotta had pointed already to the concept of *subtilitas* as the opposite of *dulcedo* or

⁷ Apel, *The Notation of Polyphonic Music*, 403.

⁸ Günther, “Das Ende der Ars Nova.”

sweetness, both being vital components of the late fourteenth-century period.⁹ For Günther, then, the increase of subtlety in music of this time referred to extra-mensural note shapes and proportional mensuration signs or numerals that created more precise, complex cross-rhythms or syncopations.

Her term, *ars subtilior*, has become the most common referent for this complicated notational style. Conflated with Apel's and others' theories about the provenance of manuscripts, works, and composers that make use of this style, scholars have sought to link the origins and practice of the *ars subtilior* variably to the courts of Dijon, Aragon, Foix, Milan-Pavia, Paris, and Avignon, and have proposed a series of chronological shifts in style.¹⁰ However, recent research by scholars including Anne Stone, Yolanda Plumley, and Jason Stoessel has not only clarified questions of provenance and style, but has also countered both Günther's construction of an *ars subtilior* style and period and the historicity of the very term itself.

Anne Stone discusses the *ars subtilior* from the perspective of musical style and notation.¹¹ She proposes that the immediately apparent visual complexity of the notation, which has drawn so much attention over the years, may in fact distract musicians and scholars from the possibility that the music was, first and foremost, meant to be performed. She suggests that the complicated notational styles that were used might have been created

⁹ Nino Pirrotta, " 'Dulcedo' e 'subtilitas' nelle pratica polifonica franco-italiana al principio del '400," *Revue belge de musicologie* 2 (July-October 1948): 125-32.

¹⁰ For a thorough bibliography of works on the 'ars subtilior,' refer to Jason Stoessel's dissertation, "The Captive Scribe."

¹¹ Stone, "Glimpses of the Unwritten Tradition."

specifically to notate ‘live’ performance practices, and that they are not meant to be rigid, prescriptive urtexts. Rather, there were two types of ‘subtler’ notational styles: one that involved complicated, newly invented note shapes to notate performed music, which disappeared around 1415, and another which relied on the use of canons, mensuration signs, numerals, and other such proportional methods, practices which would remain in use for another two centuries. In her opinion, the *ars subtilior* cannot be considered a chronological period with definitive boundaries, and she also warns against couching it as one unified style.

Jason Stoessel continues to dismantle the notion of an *ars subtilior* period in his 2002 dissertation.¹² He points out that Günther’s adoption of the terms *subtilitas* or *subtilis* does in fact stem from late fourteenth-century theoretical treatises, but she neglects to mention that they are also in evidence throughout earlier fourteenth-century *Ars Nova* treatises.¹³ In the earlier works as in the later, subtlety refers to more precise, detailed notation, such as the invention and use of individual note values with specific durations, the invention of the minim and the practice of coloration. Also, those treatises that describe the complex, proportional styles of notation that Günther and Apel relied on date from later in the supposed *ars subtilior* period, or even after, thus undermining the dates of and, more importantly, the likelihood of an actual chronological ‘*ars subtilior*’ era.

¹² Jason Stoessel, “The Captive Scribe.”

¹³ Christian Leitmeir shows how, in his *Compendium*, the Cistercian monk Petrus dictus Palma Ociola defends not only mensurable music but the idea of subtlety (*‘subtiliter’*). In this treatise, subtlety is more or less synonymous with the very practice of mensural music itself, which he defends against critics for its ability to be specific with regard to rhythmic duration, as opposed to plainchant, which cannot. See Leitmeir, “Arguing with spirituality against Spirituality.”

The movement toward precision and specificity in notation, especially with regard to the independence of note values and the creation of smaller durations, was thoroughly explored in Chapters II through IV. This movement corresponds to what Günther, Stoessel, and others have shown to be ‘subtlety.’ In that regard, the inclusion in later fourteenth- and early fifteenth-century treatises of specially invented note shapes that created a variety of proportional relationships, the extrinsic signs mentioned by Stone, is a marker of Günther’s *subtilior* – a more subtle art.

But the ‘ars subtilior’ can no longer be considered an epoch in music. The roots of ‘subtilitas’ stem far back into the early fourteenth century, possibly even with regard to the emancipation of the breve and semibreve from their modal origins, and while the majority of the visually complicated compositions were written around the same time as the papal schism, elements of this style continued for generations in both theory and practice. Instead, the concept of a ‘subtler’ style, referring to the continuing search for precision in musical notation, reflects and affects the myriad ways in which Murisian and Marchettan theories influenced one another. The varying approaches to rhythm, pitch, hexachordal structure, mensuration, and so forth are all part and parcel of this movement toward specificity.

With regard to rhythm, though, the development of more specific notational units was closely related to the exploration of proportion in music. Each new, specific rhythmic unit had a unique, unchangeable duration that could not be affected by normal mensural rules. Since the concepts of perfection, imperfection, and alteration did not apply, these new units were therefore extra-mensural – outside the normal bounds of the *prolaciones* or *divisiones*. As a result, they were described in mathematical terms, much like the smaller note

values explored in the earlier chapters; they were either proportionally related to or mathematically combined from pre-existing note shapes. Hence, other scholars choose not to label this type of notation as ‘ars subtilior’ but refer instead to proportional rhythmic notation.¹⁴ I will also do so in this chapter, since I investigate a body of treatises that were written outside the accepted chronological bounds of the ars subtilior and discuss notational principles not normally included in ars subtilior studies.

V.2: Proportional Rhythmic Notation

Proportional rhythmic notation could either be intrinsic, focusing on the note shapes and/or colors themselves, or extrinsic, in which mensuration signs, Indo-Arabic numerals, or even textual canons provided the directions for the proportional relationships. Extrinsic signs, while prolific in the practical manuscript tradition, play a much smaller role in theoretical treatises written in the late fourteenth and early fifteenth centuries, especially with regard to the development of semiminim-family units.¹⁵ But the practices of diminution

¹⁴ For example, Carl Parrish’s book on notation in medieval music ends with fourteenth-century Italian and French styles. He does not mention an ars subtilior style or era, referring instead to ‘proportional notation;’ he describes only one piece: the circle canon *Tout par compass suys compose* by Baude Cordier from the manuscript Chantilly 564, but makes no attempt to link it to broader stylistic genres or periods. Parrish, *The Notation of Medieval Music*, 183-196. See also Long, “Musical Tastes in Fourteenth-century Italy”; Anne Stone, “Che cosa c’è di più sottile riguardo l’ars subtilior?” *Rivista Italiana di Musicologia* 31 (1996): 3-31; Stoessel, “The Captive Scribe.”

Also, several theorists and scholars also refer to proportional notation but with regard to pitch. For an example, see Hugo Riemann, *History of Music Theory, Books I and II: Polyphonic Theory to the Sixteenth Century* (Lincoln, NE: University of Nebraska Press, 1962), especially pages 246-47. I do not treat pitch in this work, and therefore whenever I refer to proportional notation, I mean it in a strictly rhythmic sense.

¹⁵ The most relevant scholarly literature on these types of extrinsic signs includes Anna Maria Busse Berger, “The Origin and Early History of Proportion Signs,” *Journal of the American Musicological Society* 41, no. 3 (October 1, 1988): 403-433; Bonnie J. Blackburn and Katelijne Schiltz, *Canons and Canonic Techniques, 14th-16th Centuries: Theory, Practice, and Reception History; Proceedings of the International Conference, Leuven, 4-6 October*

(eventually also augmentation) and polymensuralism, though at least partially extrinsic in nature, have implications for the conceptualization of semiminim units, and so I will discuss those two practices first. The concepts of coloration and extra-mensural note shapes involve specific manipulation of the definition and grapheme for semiminim units, so I will discuss those concepts last.

The greatest attention in this chapter will be given to the last of these four practices. It is possible, as Stone suggests, that some of the music of the late fourteenth and early fifteenth centuries was visually complicated because it was an attempt to notate elements of performance practice that did not adhere to a strict written interpretation. Yet for the rest of the repertory, its notational complexity was integral to the work's design, "very much a part of the work's written-ness."¹⁶ Notation here was not just a necessity, but something to be perfected outside of the sounding pitch of the performance, something that could be structured and organized and made visually beautiful.

While Stone treats these two types of notation as divergent, they share at least one principal feature: the creation of new note shapes. As Dorit Tanay states,

"it is important to note that the peculiar notational complexities of Ars subtilior compositions—proportional divisions of the semibreve and minim, the use of

2005. Dudley, MA: Peeters, 2007; Cox, " 'Pseudo-Augmentation,' " Richard Kemp Loya, *Canons in the Trent Codices* ([Dallas]: American Institute of Musicology, 1967); Alfred Mann, et al, "Canon (i)," *New Grove*, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/04741> (accessed July 19, 2012); Virginia Newes, "Writing, Reading and Memorizing: The Transmission and Resolution of Retrograde Canons from the 14th and Early 15th Centuries," *Early Music* 18, no. 2 (May 1, 1990): 218–234; Charles Turner, "Sub Obscuritate Quadam Ostendens: Latin Canon in the Early Renaissance Motet," *Early Music* 30, no. 2 (May 1, 2002): 165–188.

¹⁶ Stone, "Glimpses of the Unwritten Tradition," 91.

syncopation, and, above all, the possibility of changing the meaning of each standard and new rhythmic sign—destabilised the unity of *Ars nova* notation and decentred the absolute truth guaranteed by the rhythmic centre of the *Ars nova* namely, the meta-category of rhythmic perfection.”¹⁷

I agree with Tanay entirely about her assessment of notation, if not about her reference to *ars subtilior* as a marker of style and period. More than any other aspect of rhythmic notation, the invention of new note shapes and the reinterpretation of more traditional ones eroded the normal workings of both the typically French and typically Italian mensural systems, creating discrete note values with inflexible durations. The use of semiminim-family units in the creation of these new note values thus illuminates the ways in which each of those units became more strongly associated with specific durations and graphemes.

V.2.1: Polymensuralism

The proper way to combine different mensurations was a topic of recurring interest in treatises throughout the fourteenth century. In France, both horizontal and vertical polymensuralism were built on the principle of minim equivalence; the minims of each mensuration were always equal in duration. In Italy, the breve was the point of reference. While extrinsic signs such as mensuration signs, numerals, or textual canons might have provided the instructions for the correct reading of a composition both in theory and in practice, several theorists also recommended that care be given to the graphemes chosen to

¹⁷ Dorit Tanay, “Between the Fig Tree and the Laurel: *Or voit tout en aventure* Revisited,” in *A Late Medieval Songbook and Its Context: New Perspectives on the Chantilly Codex (Bibliothèque Du Château De Chantilly, Ms. 564)*, edited by Yolanda Plumley and Anne Stone, 161-78 (Turnhout: Brepols, 2009), 161.

represent the smaller note values in use, so that the proper rhythmic value could be deduced for each mensuration.

The first to do so was Johannes Vetulus de Anagnia in his mid-fourteenth century *Liber de Musica*. As stated in Chapter IV, Vetulus does not mention the semiminim, but he (or the scribe of this treatise) copies the black right-facing grapheme so frequently used for the semiminim as one version of his minim.¹⁸ If minims are used in a combination of minor and major prolation, or minor and minimum prolation, then the minim “*mutet figuram*,” or changes its shape. While Vetulus does not clarify why such a change is necessary, it is probable that, in an Italian system where the breve remained equivalent and mixed prolations would result in minims of different lengths, he wished to clarify which minim was shorter. His description of the mutation of the minim figure appears to attribute the flagged grapheme to the minim in minimum prolation, the shortest possible minim in Vetulus’s system of divisions. If he was familiar with the use of this grapheme as a semiminim in other notational styles, which is likely given his combination of French and Italian systems of

¹⁸ “*Tamen quia aliquando divisio minoris prolationis miscitur cum maiori et minima cum minori, et quia inter praedictas esset magna confusio quia non bene reducerentur ad perfectionem, oportet quod de necessitate una prolatio cognoscatur ab alia, minimae minoris prolationis inter minimas maioris. Aut minimae minimae prolationis inter minimas minoris mutentur aliquantulum in figura, videlicet ut patet hic. Et quod minima mutet figuram non requiritur, nisi quando prolatio minor miscitur cum maiore aut minima prolatio cum minore.*”

However, because sometimes a division of minor prolation is mixed with major, and minimum [prolation] with minor, and because of the aforementioned there is great confusion since they are not easily reduced to perfection, of necessity one prolation must be known from another, the minimum from minor prolation and minim from major. Or minims of minimum prolation, among minims of minor [prolation], should change to some extent in figure, namely as is shown here: ♪ ♪ ♪ ♪. And it is not required that the minim changes figure, unless when minor prolation mixes with major, or minimum prolation with minor.”

mensural organization, then that explains his conflation of the right-flagged note shape with his smallest mensural duration.

Other theorists were more explicit. The anonymous authors of the late fourteenth-century treatises *Tractatus de musica mensurabili* and *De musica mensurata* describe a series of extra-mensural note shapes that are used in instances of polymensuralism. Two note values are of particular interest: these treatises use almost identical language to declare that the semifusiel and the semifusiel semi are both equal in duration to the semiminim (here worth half a minim), yet are used to distinguish between prolations in “*cantibus mixtis*,” or mixed song.¹⁹ Both treatises state that regardless of prolation, semiminims are always worth half a

¹⁹ *Tractatus de musica mensurabili*:

“Item semifusiel semi et semifusiel habent vncos. Racio, quia equipollent semiminimis, sed diuersificant prolationem, ut patet in cantibus mixtis. Item brevis plicata in modo perfecto ponitur pro modo imperfecto. Item sciendum: ad habere cognitionem istarum notarum iam dictarum summe est necessarium volenti studere musicam mensuralem, quia pertinet ad ipsum cantorem tamquam fabrilis ad fabrum. Unde ad simplicem modum, tempus et prolationem ad minimum quatuor requiruntur note, quia ad modum requiritur longa et brevis, ad tempus brevis et semibrevis, ad prolationem semibrevis et minima. Sed ultra illas notas adducitur etiam ad modum maxima et duplex longa; ad tempus nichil additur. Sed ad prolationem additur semiminima. Residue vero note sunt invente propter mixturas parcium mensure sicut sunt: brevis plicata, semibrevis altera vel minima altera, cardinalis, fusiel, semifusiel, semifusiel semi etc.

Also, the semifusiel semi and semifusiel have hooks. The reason is that they are equipollent with semiminims, but distinguish between prolations, as is evident in mixed song. Also, the plicated breve is placed in perfect mode for imperfect mode. Likewise it is known: to have knowledge of these notes has already been said to be most necessary to he who wishes to study mensural music, because they pertain to this singer like tools to a blacksmith. Hence, to simple mode, tempus and prolation at least four notes are required, because to mode are required the long and the breve, to tempus the breve and semibreve, to prolation the semibreve and minim. But beyond these notes are also added the maxima and double long to mode, but to tempus nothing is added. But to prolation is added the semiminim. The rest of the notes were invented for the mixture of parts of mensuration, which are these: the plicated breve, the altered semibreve or minim, the cardinalis, the fusiel, the semifusiel, the semifusiel semi, etc.”

http://www.chmtl.indiana.edu/tml/15th/WFANON4_TEXT.html

De musica mensurata:

“Quare autem semifusielis et semifusielis semi habent uncas, ratio est, quia aequipollent semiminimis, sed diversificant prolationem utque in cantibus mixtis.

Et est notandum, quod ad simplicem modum, tempus et prolationem ad minimum requiruntur quattuor notae. Ut ad modum longa et brevis, ad tempus brevis et semibrevis, ad prolationem semibrevis. Sed ad maximum longa duplex et maxima

minim, though the author of the Wrocław treatise mentions in passing his distaste for the occasional practice of subdividing the minim into three semiminims. But since semiminims can be used in all prolations, it is therefore unclear as to how exactly the semifusiel or semifusiel semi should be used, and what they are meant to distinguish.

Other larger note values, such as the fusiel, altered minim, plicated breve, and so forth, are also to be used in mixed song in order to combine different parts of mensurations together, presumably in order to circumvent traditional hierarchies of mensural organization. These proportional figures are used in these treatises to set up alternative hierarchies to which the semifusiel and semifusiel semi belong. The fusiel is described in different terms in the two treatises, yet in both cases it is worth a minim and a half, being used in major prolation much like imperfect semibreves to shift the sub-groupings within a perfection.

adduntur ad modum, et ad tempus nihil additur sed ad prolationem additur semiminima et residuae notae sunt inventae propter mixturas ut brevis plicata, semibrevis alterata, cardinalis, fusielis, et semifusielis, et semifusielis semi.

Nota brevis plicata in modo perfecto ponitur pro modo imperfecto et semibrevis altera in tempore perfecto ponitur pro tempore imperfecto, sed cardinalis potest poni in quacumque materia, ubi sic placuerit.

And as to why the semifusiel and semifusiel semi have hooks, the reason is, because they are equipollent to semiminims, but distinguish between prolations, as is seen in mixed song.

And it is known that for simple mode, tempus, and prolation at least four notes are required: as to mode the long and breve, to tempus the breve and semibreve, to prolation the semibreve. But to maximum mode are added the duplex long and maxima, and to tempus nothing is added, but to prolation is added the semiminim, and the residual notes are invented for the mixtures, such as the plicated breve, altered semibreve, cardinalis, fusielis, and semifusielis, and semifusielis semi.

It is noted that the plicated breve is placed in perfect mode for imperfect mode, and the altered semibreve in perfect tempus is placed for imperfect tempus, but the cardinalis can be placed in whatever condition according to which might be pleasing.”

http://www.chmtl.indiana.edu/tml/15th/ANOBRI_TEXT.html; partial trans. from Brewer, “The Introduction of the Ars Nova,” 169-170.

In *De musica mensurata*, the semifusiel is described as being half a fusiel, or in other words a dotted semiminim. The semifusiel semi is said to be a type of half-fusiel, the word semi- being used to count the number of hooks given the grapheme. Yet that description of the semifusiel and semifusiel semi implies that they both are both worth a dotted semiminim, half the duration of the parent unit fusiel, which is at odds with the earlier description of the unit being equipollent with the semiminim itself. In *Tractatus de musica mensurabili*, though, the semifusiel is described as being worth the same as a semiminim in minor prolation, which would be half a minim, and the duration of the semifusiel semi is not mentioned at all. The graphic construction of the new semifusiel and semifusiel semi, as described in both treatises, will be further discussed below in the section on extra-mensural note shapes.

These three sources report that the practice of simultaneously combining different prolations in multiple voices created a need to graphically distinguish the smallest note values from one another. Yet only in *Vetus* are the note values in question of different durations; his smallest minim is given the flagged shape, while presumably the other minims retain the upward-stemmed semibreve shape. In *Tractatus de musica mensurabili* and *De musica mensurata*, though, there are three different note values that are given the same duration. The semifusiel and the semifusiel semi are said to be equipollent with the semiminim, thus also equal to half a minim, yet they are derived from the fusiel and at least in one instance the duration of these units is called into question. These three units will be discussed in greater detail below.

Regardless of the actual practical application of any of these theories, it is clear that there was potential confusion in parsing out rhythms involving the smallest note values in

instances where different prolations were in use. This led to the use, in Vetulus's case, of a grapheme known and used elsewhere for a different purpose, namely, the depiction of semiminim units. In the cases of the other two treatises, it led to the invention and description of completely new note values which, as I will show below, were based on the semiminim and which can now be added to the umbrella of semiminim-family units.

V.2.2: Diminution and Augmentation

Another example of the growing interest in proportions throughout the fourteenth century is the discussion of diminution, the process by which note values were shortened according to a pre-determined ratio. Many scholarly treatments of diminution, such as the important contributions made by Margaret Bent, Anna Maria Busse Berger, Ruth DeFord, and Rob Wegman, have taken place within a discussion of mensuration or proportion signs, since these signs describe the various ratios by which the diminution may take place.²⁰ But the time period observed in these articles tends to be, at earliest, the turn of the fifteenth

²⁰ A brief list of relevant articles includes: Margaret Bent, "The Early Use of the Sign Φ ," *Early Music* 24, no. 2 (May 1, 1996): 199–225; Bent, "On the Interpretation of Φ in the Fifteenth Century: A Response to Rob Wegman," *Journal of the American Musicological Society* 53, no. 3 (October 1, 2000): 597–612; Bent, "The Myth of Tempus Perfectum Diminutum," in *A Late Medieval Songbook and Its Context: New Perspectives on the Chantilly Codex (Bibliothèque Du Château De Chantilly, Ms. 564)*, edited by Yolanda Plumley and Anne Stone, 203–227 (Turnhout: Brepols, 2009), Anna Maria Busse Berger, "The Myth of Diminutio Per Tertiam Partem," Ruth I. DeFord, "On Diminution and Proportion in Fifteenth-Century Music Theory," *Journal of the American Musicological Society* 58, no. 1 (April 1, 2005): 1–67; Rob C. Wegman, "Different Strokes for Different Folks? On Tempo and Diminution in Fifteenth-Century Music," *Journal of the American Musicological Society* 53, no. 3 (October 1, 2000): 461–505.

century.²¹ Diminution was, however, treated on several occasions throughout the fourteenth century, and not at all within the confines of a discussion on mensuration signs.

In Recensio B of the *Libellus cantus mensurabili*, the only explanation of semiminim units occurs within the explanation of diminution, in which the semiminim replaces the minim.²² Here, the ratio of diminution depends on the mode and tempus of the tenor. In perfect mode and perfect tempus, diminution occurs to one third of the original value of the notes, but in all other cases, diminution is made by half. Since the semiminim replaces the minim, it could be interpreted that under certain circumstances, the minim was ternary and a semiminim could be worth one-third of a minim. But aside from a brief cameo in the section

²¹ Ruth DeFord remarked on this phenomenon in her conference paper “Proportional Diminution in the Theory of Johannes de Muris and his Followers,” which she gave at the 2012 Medieval and Renaissance Music Conference in Nottingham, UK. In it, she stated a desire to return to earlier fourteenth-century sources for their discussions of diminution and related Muris’s descriptions to the works of Machaut and to later theorists.

²² “*De diminutione*

Sequitur de diminutione, que sepe in tenoribus motetorum ponitur.

Circa quam notandum est primo, quod pro maxime diminutione ponitur longa, pro longa brevis, pro brevi semibrevis, pro semibrevis minima, pro minima semiminima.

Secundo nota, quod quando tenor est de modo imperfecto, sive fuerit de tempore perfecto vel imperfecto, diminutio fit directe per medietatem notarum et pausarum.

Tertio nota, quod quando tenor est de modo perfecto et tempore imperfecto, diminutio etiam fit per medietatem, sicuti pro longa valente tres breves ponitur brevis valens tres semibreves.

Quarto nota, quod quando tenor est de modo perfecto et tempore perfecto, diminutio fit per tertium et non per medium.

Et hec de diminutione dicta sufficient.

On Diminution:

The following is on diminution, which is frequently placed in the tenor of motets.

With regard to how it is noted, first, that for the diminution of the maxima the long is placed, for the long the breve, for the breve the semibreve, for the semibreve the minim, and for the minim the semiminim. Secondly it is noted that when the tenor is of imperfect mode, whether of perfect or imperfect tempus, diminution is made directly by half of the notes or rests.

Thirdly, when the tenor is of perfect mode and imperfect tempus, also diminution is made by half, as for the long worth three breves, a breve worth three semibreves is placed.

Fourthly, when the tenor is of perfect mode and perfect tempus, diminution is made by [to] a third and not by half.

And of diminution, what has been said is sufficient.”

on rests, the semiminim is not discussed, and neither is any potential subdivision of the minim. It is equally plausible that the minim was always binary and, regardless of the type of diminution required by the tenor, it was always substituted by the semiminim in the same manner. However, since the phrase mentioning the semiminim is not included in Recensio A of the *Libellus*, and since motet tenors rarely utilize minims that could be diminished anyway, it is possible that the allusion to semiminims replacing minims in diminution may be a case of scribal error or a simple extension of logic that had no practical benefit.²³

Some later treatises discuss diminution with regard to mensuration signs, which again have been covered thoroughly by Busse Berger and other scholars; other treatises refer to coloration, especially with regard to the use of void instead of red notation, as diminution. Only two fourteenth- or early fifteenth-century treatises make reference both to diminution and to the possibility of note values smaller than the minim outside of a discussion of extrinsic signs. The *Ars cantus mensurabili mensurata per modos iuris* contains a brief closing section on diminution, but its description of the minim's role in diminution is too convoluted to shed any light on the current subject.²⁴ But the anonymous *De minimis notulis*

²³ http://www.chmtl.indiana.edu/tml/14th/MURARSPA_TEXT.html; see also DeFord, "On Diminution and Proportion," 11 fn. 28.

²⁴ The anonymous author of *Ars cantus mensurabili mensurata per modos iuris* discusses diminution at the very end of his treatise, but his description is confusing. Like the *Libellus*, diminution here is done according to the type of mensuration, but in contrast, the determining feature is the perfection or imperfection of the prolation. If perfect, then diminution is by [to] a third part, but if imperfect, then by a half. The author makes this cryptic statement:

"Et sic sequeretur quod minima esset divisibilis, quod est falsum; ergo, debet fieri per tertiam partem."

So it might follow that the minima is divisible, which is false; therefore, it ought to be diminution by a third part."

from the lost Strasbourg manuscript also discusses the practice, and this description offers a second definition of the semiminim's duration, as I mentioned in Chapter III.

The author states that the art of singing a different note value, more specifically one that is half the length of the written note, is called *diminutio*, and it is a more subtle way of singing:

“Seventh, it should be noted that often some of the songs are notated with other notes, where however the notes are not always sung as they appear at first glance, so that namely one would sing a breve for a breve, a semibreve for a semibreve, a minim for a minim, but it is clear that this type of song is considered subtle, for half of each individual note [is sung] without exception, so that namely when a long is placed, one would sing a breve, and when a breve is placed, a semibreve is sung, and where the semibreve, a minim is noted, and where a minim, there must be sung a semiminim. The same should be understood of the first, middle, and last gathering. And this manner of singing by musicians is called *diminutio* because each note is diminished by half of its own value, as is seen in the rondellus ‘Virginis meritum.’ ”²⁵

It seems that the author is stating an oxymoron, in that the minim should be both indivisible and yet reduced to a third in instances of diminution. In his critical edition of the treatise, C. Matthew Balensuela suggests that some of the sentences in this section in fact belong to other sections about diminution, but yet points out that that still fails to explain the conundrum posed by this sentence. Elsewhere in the treatise, the author is equally inconsistent, at first presenting semiminims and imperfect minims and then scorning their use as not artful and in violation of the logic of the term minim, as discussed in Chapter II. Unfortunately, his description of diminution fails to shed much light on his conception of semiminim units other than to hint at the possibility that the minim could, in some circumstances, be ternary, a notion that is otherwise never brought up in the treatise.

Trans. Balensuela, *Ars cantus mensurabili mensurata per modos iuris*, 257.

²⁵ “Septimo notandum quod sepe aliqui cantus notantur aliquibus notulis ubi tamen notule sic semper cantande non sunt ut prima fronte apparent, ut sic scilicet cantatur brevis pro brevi, semibrevis pro semibrevis, minima pro minima; sed patet ut talis cantus subtilius consideretur dimidiando singulas notulas nulla excepta, sic videlicet ut ubi ponatur longa, ibi cantetur brevis; ubi vero ponitur brevis, cantanda est semibrevis; ubi autem semibrevis, notetur minima, et ubi minima, ibi oportet cantari semiminima. Hoc idem intelligendum de colligatis primis, mediis et ultimis. Et talis modus cantandi a musicis vocatur diminutio eo quod unaqueque notularum pro medietate diminuitur a suo debito valore, ut patet in isto rondello: ‘Virginis meritum.’ ”

It is through this description of diminution that the author reveals that the semiminim can be worth half of a minim, though previously in the treatise he had stated that the semiminim was in fact used to create a sesquitertia relationship with the minim. The explication of diminution thus clarifies the use of the semiminim, as I mentioned in Chapter III.

Toward the early fifteenth century, the use of flagged semiminims in tempus imperfectum, prolatio major, apparently created enough confusion that transferring the note values in that mensuration from the level of prolation to the level of tempus – in other words, substituting note values in Φ for those in \mathbb{C} – became a popular option. Bobby Wayne Cox cites Howard Mayer Brown’s and Gilbert Reaney’s proposals of this idea in his 1982 article on the manuscript Bologna Q15, in which he states that such “pseudo-augmentation” allowed scribes notational leeway.²⁶ They could choose whether or not to notate voices containing semiminims at the prolation level, with flagged graphemes, or at the tempus level, substituting the next-larger note value.

Since the theoretical discussions of the use of the mensuration sign Φ and of this type of augmentation postdate both their first practical use and the time period in question in this dissertation, I will not go further into detail. Still, the practice of augmented notation, especially in this particular context, had two ramifications for the semiminim units. First, as Cox points out, having the semiminim note values written as minims allowed the semiminim grapheme to thus be used for even smaller note values. In other words, the scribal confusion surrounding the proper notation of flagged semiminim graphemes inadvertently ended up

²⁶ Cox, “‘Pseudo-Augmentation,’ ” see p. 422 in particular; see also Ursula Günther, “Der Gebrauch des *Tempus perfectum diminutum* in der Handschrift Chantilly,” *Archiv für Musikwissenschaft* 17 (1960); 277-297.

linking the flagged grapheme with the later fusa. Also, as Ross Duffin has shown, “up to about 1440 Φ always meant reduction by half in all occurrences, simultaneous as well as consecutive.”²⁷ This particular relationship between note values in “pseudo-augmentation” helped to solidify the semiminim as always being worth half a minim. These two aspects of the fifteenth-century semiminim will be explored in greater detail in Chapter VI.

Thus far the proportional strategies discussed have involved both extrinsic and intrinsic signs. The concept of polymensuralism rests on the combination of different mensurations, generally marked through signs or numerals and occasionally through textual canons. Diminution and augmentation also frequently rely on the usage of mensuration signs and canons in order to clarify the proper proportion by which note values are decreased or increased. If diminution or augmentation is happening vertically, then it is another example of polymensuralism, as well. Yet in all of these cases, the intrinsic signs, the shapes of the note values themselves, are also involved. In the case of polymensuralism, the right-flagged semiminim grapheme and several newly invented note shapes serve to distinguish between different combinations of prolations, while in diminution and augmentation, the note values themselves are changed in order to create or imply a new mensuration. The last two proportional strategies to be discussed in this chapter, coloration and the creation of new graphemes, rely solely on the intrinsic aspect of the written note values themselves.

²⁷ Ross W. Duffin, “Dufay and the Sign Φ : Proportion and Tempo 1420-1440,” conference paper cited in Eunice Schroeder, “The Stroke Comes Full Circle: Φ and Φ in Writings on Music, ca. 1450-1540,” *Musica Disciplina* 36 (1982): 122-123.

V.2.3: Coloration

As I mentioned above, descriptions of coloration, or the use of red ink or void figures instead of regular black notation, are often treated as discussions of diminution. Since to diminish something is to reduce its value, and the typical application of coloration, whether red or void, was to reduce a note value by one-third of its duration, this combination makes perfect sense. Yet in the earliest descriptions of the practice, coloration had multiple meanings. It could be used to imperfect perfect note values written in black notation, but if the black notation was already imperfect, then the red or void color instead created perfect note values.²⁸ Either way, the practice of coloration created some of the first proportional note shapes in mensural notation.

While the idea that colored or voided shapes could be perfect as well as imperfect can occasionally be seen in fourteenth-century treatises, the overwhelming use of coloration was to imperfect black notation. The end result was a way of overriding the prevailing mensuration such that a different mensuration or tactus was interjected, even momentarily, into a composition. Without the use of signs, numerals, or canons, different hierarchies of subgroupings could take place simultaneously within a piece, and syncopations of various lengths both within and across perfections could be created. Thus in perfect tempus, three red breves could be placed for two black breves, in perfect prolation three semibreves for two black ones. But these red units were not just imperfected versions of their black counterparts: they implied imperfect tempus or prolation. This meant that in instances

²⁸ Colored ink or voided notes were also used in some cases of *divisi* writing to distinguish between two voices written on the same staff that would be sounded simultaneously. However, as this use of coloration has no rhythmic or mensural significance, I will not discuss it further here.

where, for example, three imperfect red semibreves worth two minims each were placed for two perfect black ones worth three minims each, the result was that the red minim was equal in duration to the black.


Coloration could also work on the minim level, and it is this aspect of the practice that is of the greatest interest in this chapter. While in some instances the red and black minims could be of equal duration, it was also possible to place three red minims for two black ones, creating a sesquialtera proportion. In this manner, coloration operated similarly to the treatment of the Italian semiminim, as at least at first three red minims operated as a proportional substitute for their black counterparts. As I will show in this chapter and the next, coloration was both used as a mathematical component that could be manipulated to create new extra-mensural note shapes and it was adopted by Italian theorists and scribes in a manner that eventually conflated it with the concept of the semiminim such that an entirely new graphic option was created.

V.2.4: Extra-Mensural Note Shapes

Mensural note values that could be called proportional, in that they were not one of the main parts of prolation, were in evidence as early as the Vitryan *Ars Nova* complex. These note values existed outside the normal hierarchy of the divisiones or prolaciones, were unaffected by the rules of perfection and imperfection, and like coloration, could only be used in specific ways within a mensuration.

For example, the note value alternately referred to as the dragma, fusiel, fuise, fusata, or fusée, or *semibrevis caudantur*, was described in the Rome 307 and Paris 7378A treatises

(formerly of the *Ars Nova*) and in *Compendiolum artis veteris ac novae* by Coussemaker's Anonymous III, all thought to be among the early witnesses to an *Ars Nova* tradition.²⁹ The latter has its own chapter on the dragma, in which the note value is worth two minims regardless of mensuration. Throughout the century, this note value was worth either two minims, substituting for an imperfect semibreve when such was difficult to notate, or a dotted minim, operating in contexts where the punctus additionis was not used or where it was desired to divide a perfect semibreve into two equal parts.³⁰ In either case, the goal was to subvert or circumvent the overarching mensural organization and create new possibilities for rhythmic subdivisions.

The grapheme for the dragma was as far as I know always presented as a semibreve with both an upward and a downward stem, like so: . Mathematical explanations for its shape and duration were occasionally given; the dragma, being worth two minims, was shaped like two minims added together, one ascending and one descending. As frequently found in both Italian and French sources, the addition of a downward stem to a semibreve increased its length, usually three minims or more, just as the upward stem created a minim of shorter duration. For the dragma, then, the descending tail reflected the longer semibreve

²⁹ “Item nota quod quaedam sunt semibreves quae cauantur a parte superiori et inferiori, ut patet hic. Et tales notulae sic caudatae dragmae vocantur, gallice fuises, et non possunt aliquo modo valere nisi duas minimas.”

http://www.chmtl.indiana.edu/tml/14th/ANOART_TEXT.html

³⁰ In addition to the former *Ars Nova* treatises and *Compendiolum artis veteris ac novae*, this note value is described as a dragma or tragma in Jacobus de Liège's *Speculum Musicae*, *Quatuor Principalia*, Johannes Boen's *Ars musicae*, *De semibrevis caudatis*, *De musica mensurabili*, and *Tractatus de musica mensurabili*; as a fusa in the second and third Berkeley treatises; as a fusiel in *Tractatulus de cantu mensurali seu figurativo musice artis*, *De musica mensurabili*, *Tractatus de musica mensurabili*, and *De musica mensurata*; and without a name in *Ars cantus mensurabili mensurata per modos iuris*, *Tractatus figurarum*, and *Tractatulus de figuris et temporibus*.

while the upward stem reduced its length to two or one and a half minims. In any case, what is being manipulated here are the ascending and descending stems; as the shapes were borrowed from previously existing note values, so too were their respective durations.

Later in the fourteenth century, the regular parts of prolation, the dragma, and semiminim units were occasionally combined together to create new proportional note values with durations that had heretofore not been notatable. Jason Stoessel observes that there are two different ways in which note shapes are combined with each other. In many cases, the component parts that are combined to create a new grapheme have a specific durational value. In other words, they reflect the duration of the base note from which they were borrowed. When they are added to or subtracted from one another mathematically to create a new note shape with a specific duration, Stoessel calls these note values arithmetic. His proportional shapes, on the other hand, may look the same, but their component parts – “stems, of flags, of *virgule* (short curved stems), or other shapes” – do not have the same specific mathematical value.³¹ The aforementioned dragma, for example, would be an arithmetic note value if its descending stem represented the duration of a minim being added to the already present minim, for a total of two minims. But it would be a proportional note value if the descending minim stem were given any other arbitrary length; those dragmas worth one and a half minims are therefore proportional, not arithmetic. Even though they and the dragma worth two minims have the same graphic shape, they are created according to two different principles.

³¹ Stoessel, “The Captive Scribe,” 207.

Stoessel's approach accounts for the reasons why multiple graphemes could have the same duration, or the same grapheme could be given for multiple durations, a phenomenon once written off by scholars as evidence of ambiguity or ignorance. Since his is a study of scribal practice, he applies these categories most to the graphemes found in the practical manuscript sources, but also investigates some of the relevant theoretical literature from the late fourteenth and early fifteenth centuries. Stoessel points out that frequently, complicated graphemes are referenced as Italianate because of their appearance in sources of Italian origin, but he believes that their use betrays a great deal of French influence – the use of coloration, dots of addition, and most importantly, the use of small note values with consistent durations. The arithmetic values, he says, stem from a northern Italian school that was steeped in and adapted French practices, while the proportional values are largely French but were adopted by Italians.

In the next section, I will explore all proportional theoretical treatises that make use of semiminim-family units in the construction of new note values. While the newly invented note shapes in these treatises largely fit into Stoessel's categories of arithmetic and proportional note values, some blur the lines between the two. I also show that the ethnographic origin of composite note values is even more complicated than what Stoessel described. While he is correct that these graphemes are largely the result of interaction between French and Italian schools of thought, the route of influence was not one-way; French practices were adopted and adapted by Italians, and the resultant Franco-Italian amalgamation in turn flowed back into France and central Europe. The study of composite

note values thus sheds light on the transmission and subsequent adaptation of mensural theories, and also on the development of semiminim-family units within them.

V.3: Semiminim Units in the Creation of Proportional Note Shapes

Eleven late fourteenth and early fifteenth-century treatises specifically combined the graphemes of semiminim units with the five parts of prolation, the double-stemmed minim figure frequently called the dragma, dots of addition and even with coloration to create new extra-mensural proportional figures. Like the note values mentioned above, these units had specific, unalterable durations; they were not subject to the vagaries of the perfection-imperfection-alteration system that still held true for the main parts of prolation: maxima, long, breve, semibreve, and minim. With regard to semiminim units, the most commonly manipulated feature of their graphemes was the flag or hook, though in instances where the semiminim units were voided, as in the *Tractatus figurarum*, the voiding itself reflected these smaller note values.

In each case, the elements of the graphemes being borrowed for the new note shapes represent whatever duration the semiminim units were thought to have: a strict duple relationship with the minim, or one of the proportional durations mentioned in Chapter III. In many of the treatises I explore in this section, the author has clearly described the exact durations and shapes of the component parts used to create new note shapes. In those cases, the theorist's definitions of semiminim-family units are abundantly clear. In other cases, though, no such descriptions are given, and we can only hypothesize, using the complex shapes, about the theorist's definition for these note values. A study of the construction of


these note shapes thus informs us not only that there was a need for these new durations, but also that the decades-long search for greater precision and specificity in mensural notation led to both a more refined definition of ‘the semiminim’ and an entirely new graphical representation of the note value on the page.

V.3.1: Tractatulus de cantu mensurali seu figurativo musice artis (Melk 950)

This central European treatise, dated to the last third of the fourteenth century, is possibly the earliest work in which a theorist describes newly invented note shapes created using semiminim graphemes. The work first breaks down the parts of prolation from longs to minims, then adds the maxima to summarize the five note values of Johannes de Muris. Immediately afterward, the author states that those are the traditional durations, but the *moderni* now use up to fourteen different species of notes. To the five parts of prolation he adds the longissima, the maxima or double long, the semiminim, the fusiel, the semifusiel, the plicated breve, the *cardinalis* or *voluntaria*, the *oblonga*, the *vacua*, and the *semivacua*.

Not all of these note species are rhythmically differentiated. The *cardinalis* or *voluntaria* is undefined, while *vacua* and *semivacua* appear to describe coloration, though the author again does not clarify in what way these note values are used. *Oblonga* could be a reference to ligatures, though while ligatures are described, the *oblonga* is not, and neither is the plicated breve. The longissima and double long are treated as expected, in that they are upward extensions of tempus such that each can be a perfect or imperfect multiple of the long.


The note values of interest here are the semiminim, the fusiel, and the semifusiel. These three are rhythmically described and graphemes for each are presented in the treatise. This author's description of the semiminim has already been stated in previous chapters, but to summarize, the note value is treated in two different manners. The older or traditionally accepted use of the semiminim has been that it could be worth either a half or a third of a minim, depending on context, and has been typically written with the right-angled grapheme often found in central European sources. But the modern way of approaching the semiminim is that it is always worth half of a minim, and instead of the right-angled grapheme, the more common right-flagged shape is used.

The fusiel, shaped like , is described as being worth three semiminims in major prolation.³² In other words, it has the same duration as a dotted minim, and it is used in major prolation in order to binarily subdivide a ternary semibreve. This duration is not unique to this treatise, but while other theorists use it as a self-contained syncopating unit, here it seems that the author uses it as part of a new mensural hierarchy distinct from the normal relationships between the parts of prolation.


³² *Fusiel vero sic formatur:*

Hec sicut se habet minima in minori prolacione, videlicet quod valet duas semiminimas, sic se habet fusiel in maiori prolacione, id est quod valet tres semiminimas.




Semifusiel sic formatur:

The fusiel is shaped like this: 

And just like we have the minim in minor prolation, namely that which is worth two semiminims, so do we have the fusiel in major prolation, which is worth three semiminims.

The semifusiel is shaped like this:  ”

The semifusiel's duration is not specified, but the author implies that it is a subdivision of the fusiel. The note values are presented from largest to smallest, with each unit described as being comprised of a certain number of the succeeding note values; the semifusiel follows the fusiel in the list of note values but without further clarification. The semifusiel may be a subdivision of the fusiel like the semiminim is of the minim. Given that the fusiel, semifusiel, and semifusiel semi are listed alongside the semiminim as modern creations, and since the fusiel is worth three of the modern, always-binary semiminim, then the semifusiel would be worth half of the fusiel: one and a half semiminims.

The grapheme for the semifusiel, , is a composite of those of the fusiel:  and the traditional semiminim: . The fusiel is shaped with both an upward and downward stem; this grapheme could be read as a minim with a descending stem that adds one-half of its value to the note, or a semibrevis caudantur with an upward stem that reduces its value. Either way, it is worth a dotted minim, and therefore can be categorized as a proportional note value. Adding the two flags or hooks to the fusiel might thus reduce it by half or a third, again in proportional fashion.

This author thus creates another mensural hierarchy through the use of the fusiel and semifusiel; a ternary semibreve, worth three minims, can be binarily subdivided into two fusiels, creating a subsesquialtera proportion. Subdividing each fusiel into two semifusiels thus places four of them in the same time as three minims, resulting in the now familiar sesquitertia proportion. If each fusiel could be subdivided into three semifusiels in the more traditional sense, then the result would be six semifusiels in the same time as six semiminims, but organized in two groups of three instead of three groups of two; the difference is not in

duration but in hierarchy. The result is not simply another ‘prolation’ outside of the four known from Murisian theory, but a unique way of incorporating common Italian proportions into an otherwise French theoretical system. The proportions that would have been created in strictly Italian notation by the combination of different divisiones or through the use of semiminims are here created through French-Italian proportional note shapes.

V.3.2: Tractatus figurarum

The *Tractatus figurarum* has long been upheld as the pinnacle of ‘ars subtilior’ theory since it contains one of the most thoroughly fleshed-out discussions of composite note shapes currently known. The author, possibly the late fourteenth-century composer Philipoctus da Caserta, states that his goal in writing this treatise is to provide a system by which what is heard may also be notated; to that end, a variety of note shapes with precise and unalterable durations were needed in order to capture the rhythmically fluid, ornamented performance style that was apparently in vogue.³³

Many scholars, Anne Stone and Jason Stoessel among them, have written on the nature of the many composite graphemes found in this treatise and its accompanying gloss, presented in the next section. To my knowledge, though, it is only in Philip Schreur’s critical edition of *Tractatus figurarum* that all of the graphemes found in the extant copies of the treatise are presented.³⁴

³³ See Stone, “Glimpses of the Unwritten.”

³⁴ While spaces were left in the text of Milan I.20.inf, the scribe copied none of the graphemes in question, with the exception of the hollow punctus. Also, it seems that Schreur was unaware of another copy of the treatise, the only one not of Italian provenance: Prague M.CIII (1463). The graphemes found in this

Schreur chose what he felt were the original or most accurate graphemes and included them in the main body of his text, resigning the variants to his critical footnotes; while this is a perfectly valid and helpful act for a critical edition, the current study requires an evaluation of all of the extant graphemes from the different copies. Also, in a few cases, Schreur's variants seem not to match their parent sources, so I wish here to correct several of his graphemes. To that end, I have compared Schreur's presentation of the note shapes in the treatises with facsimiles of each, and compiled the table given at the end of this section; in it, I provide each manuscript source's graphemes for each of the nine proportional durations of interest in this chapter. By doing so, I can compare the textual descriptions of the composite graphemes with the visual representations given in each source and therefore discuss why a later scribe might have either erred in copying or chosen to alter a grapheme. I will also show that in most cases, it is the semiminim that is manipulated to create new composite note shapes, though its graphic representation is fluid, as is typical of Italian theory at the time.

In the order presented in the treatise, the nine proportional figures that together create the combinative graphemes of interest here are the semiminim, the unit which divides a perfect breve into two equal parts, an unnamed double-stemmed minim and its void counterpart, the imperfect minim, the unit which has a 4:7 proportion with the minim, the unit which has a 4:9 proportion with the minim, the unit equal to a dotted minim, and the

manuscript are included in the final table, but since I have not been able to verify them first-hand, I have left them out of the discussion in this section.

voided minim. Despite there being very clear textual descriptions of the visual appearance of many of these note values, the only grapheme on which all of the sources agree is the last: the voided minim. Several others, such as the blackened and voided double-stemmed minim figures and the imperfect minim, are largely unified; the main difference is the presence or absence of black ink (the Catania source, for example, is entirely written in void notation).³⁵ But the other combinative figures disagree, and this is largely due to a lack of consensus on the shape of the semiminim itself.

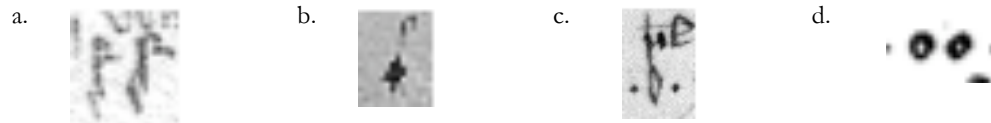
The author of this treatise does not provide an explicit textual description for the semiminim's grapheme like those given in Chapter IV. But his descriptions of some of the other proportional note values in effect end up defining what the semiminim should look like: it should be hollow or void, since it is small, and it has a flag on its stem. Yet in the thirteen sources of this treatise, the semiminim is given no less than four different

³⁵ The Catania manuscript uses only void notation throughout; the void double-stemmed minim figure is therefore used in the section of text where, in other copies, the blackened version of this grapheme appears, which explains why, in the passage describing the voiding of this figure, the Catania scribe simply leaves out the grapheme. Similarly, the Seville 1 scribe also uses a void double-stemmed figure for reasons which are unclear, and in the same passage relating to the voiding of this figure, he substitutes three void semibreves. Since the text mentions that three of these units would be equivalent to four black minims, it is possible that he meant for void semibreves to be imperfect semibreves that had lost one-third of their value, reducing their original worth of six minims to four.

With regard to the imperfect minim, again, the Catania scribe uses a void flagged figure instead of the blackened figure found most commonly in the other sources and which is called for by the text. The same figure is copied three times in the Seville 3 source. Why this scribe chose this grapheme for this particular duration is unknown, but since it is the same grapheme as used for the semiminim, it is possible that once again this demonstrates an Italian predilection toward treating the semiminim as a proportional figure and as such the scribe used the same grapheme for both durations. As I will show below, he uses this grapheme to create some of the other composite figures in the treatise, so its inclusion as an imperfect minim is not necessarily accidental. Lastly, the scribes of Faenza and Rome 1377 use the right flagged grapheme for the imperfect minim, but turn it upside down. With regard to the Faenza copy, this is clearly due to spatial reasons; the grapheme is copied on the last line of text, so rather than having it face upward as is common, he copies the stem downward into the empty margin of the page, despite the fact that at this stage in mensural notation a downward stem implied a lengthening, not a shortening, of the note value in question.

graphemes: the void flagged figure just mentioned, the blackened version of this note shape, a void minim with no flag, and a hollow punctus.

Figure 50: *Tractatus figurarum*, Semiminim Graphemes



The hollow punctus option is described in the treatise as a type of dot of perfection or addition; instead of adding a certain portion of a note's value like black puncti would do, it always adds the value of a semiminim to the note's duration. Since it is equal to a semiminim in duration, Rome 1377 transmits this figure as the semiminim itself.

But the voided minim and blackened flagged graphemes require more explanation for being linked to the semiminim. The void minim is treated as a colored minim, meaning that it has lost one third of its value and therefore three of them are used in a sesquialtera relationship with two normal black minims. The right-flagged shape is given for the imperfect minim, used in sesquitertia proportion with minims; the textual description of this grapheme is one of the primary clues to the proper depiction of the semiminim. The author states:

“There are other noteshapes that are called imperfect minimae, four of which are placed for three minimae. They have a greater effect than semiminimae because they are filled and have a lesser effect than minimae because they have the sign and propriety of semiminimae ...”³⁶

³⁶ “Sunt autem et alie figure que vocantur minime imperfecte ex quibus ponuntur quatuor pro tribus minimis. Et habent maiorem effectum quam semiminime quia sunt plene, et habent minorem effectum quam minime quia habent signum atque proprietatem semiminime ut hic:”

From this description we are told that because they are black, they are worth more than semiminims, implying that the semiminim itself should be hollow. We are also told that the imperfect minim is smaller than the minim because of the “sign and propriety” of the semiminim, which in other words means that its figure has a flag. Therefore, the semiminim was intended to be a void flagged grapheme, as I stated above.

The semiminim in this treatise is always worth half a minim, while the void minim and the black flagged grapheme create other proportional durations. Yet the copies of this treatise that link those alternate graphemes with the term semiminim (Chicago 54.1, Faenza 117, Naples VIII D 12, Pisa 606, Rome 5321, Seville 5.2.25 1, Siena L.V.30, and Washington J6) are all Italian, and as discussed in Chapter III, the Italian semiminim was the unit that could create any and all such smaller proportions with the minim. It appears that the scribes of these treatises conflated the graphemes for these proportions with their preconceived notion of the semiminim as a unit with multiple durations and either subconsciously or deliberately changed the examples, despite their difference from the textual clues provided by the theorist himself.

The other combinative shapes are given very specific descriptions by the theorist, each of which explains how the unit is mathematically created from the durations and graphemes of other note values. A close reading of all of these remaining note values sheds light on the presence of the scribes, as while in many cases the graphemes have been altered, some of the changes made reveal different approaches to combinative note shapes, especially with regard to the semiminim.

The first of these proportional note values discussed is the unnamed note value worth half of a perfect breve. This note is described as a combination of a dotted perfect semibreve, worth four minims, and one semiminim, worth half a minim; these two durations added together create four and a half minims:

“It is also possible to divide the tempus into two equal parts, as here, because semibreves that are perfect and dotted are each worth four minimae and the additions to them are each worth a semiminima, and so these two noteshapes complete nine minimae.”³⁷

Because we know from elsewhere in the treatise that the semibreve has the typical black rhombus shape, and the semiminim, as we have deduced, is a void flagged grapheme, the composite figure should therefore be some sort of a rhombus with a flagged stem and a dot of addition. Schreuer uses the grapheme found in Chicago 54.1 and the second two copies in Seville 5.2.25: a dotted semivoid rhombus, black on top and hollow on bottom, with a descending right-flagged stem. The addition of a flagged stem to the semibreve coupled with the voiding of its lower half thus represents the addition of the value of a semiminim.

Figure 51: Chicago 54.1, Grapheme for Half of a Perfect Breve



The Seville 2 and 3 copies portray the semiminim as the void flagged grapheme, so this grapheme matches its composite parts. Yet in Chicago, the semiminim is drawn as a

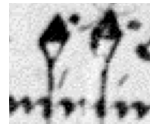
³⁷ “Potest autem tempus dividi in duas partes equales ut hic, quia semibreves perfecte atque punctate valent quelibet quatuor minimas, et sibi adiuncte valent quelibet semiminimam et iste due figure perficiunt novem minimas.”

Trans. Schreuer, *Tractatus figurarum*, 82-85.

black right-flagged shape, the same grapheme given for the imperfect minim. In this case the scribe might have been familiar with the multiple proportional durations for the Italian semiminim and thus used the same grapheme for both the semiminim and the imperfect minim, but rotely copied this semivoid figure from his exemplar without thinking about the ramifications of the combination of his version of the semiminim with a dotted semibreve, as the text requires.

Other scribes make errors in or adjustments to these graphemes. Similar, but not identical, semivoid graphemes are found in Naples VIII D 12, Rome 1327, Seville 5.2.25 1, and Siena L.V.30. In the first copy in the Seville source, the semiminim is drawn as a void minim; consequently, the scribe dutifully combined a dotted semibreve with the semiminim, as the text required, creating this grapheme instead:

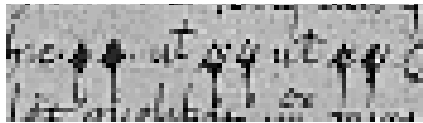
Figure 52: Seville 5.2.25 1, Grapheme for Half of a Perfect Breve



The same graphemes are given in the Naples and Rome 1327 sources, but both leave off the dot of addition. In Naples, the semiminim is also a void minim, but the scribe in Rome 1327 uses the hollow punctus mentioned earlier. No separate semiminim grapheme is given, so it appears that this scribe mistook the text surrounding the semiminim with that involving the hollow dot and copied the incorrect grapheme. For the most part, the rest of the graphemes in these two sources match the text, so whether the scribes had a flawed exemplar that did not use the dot of addition for this particular grapheme or whether they simply erred in their copying is unclear.

The Siena manuscript offers not one but three different choices in grapheme for this note value: a full-black semibreve with a descending right-flagged stem, a dotted semivoid rhombus (in which the top half is void and the bottom half is blackened) with a descending flagged stem, and a dotted semivoid rhombus (in which the left half is blackened and the right half void) with a descending, unflagged stem, as shown in the following example.

Figure 53: Siena L.V.30, Graphemes for Half a Perfect Breve



The semiminim in this particular copy is written as the black flagged figure, which is once again also used for the imperfect minim. Yet none of these graphemes match the textual description, even allowing for the change of semiminim shape. The closest is the first, which combines the shape of the semibreve with the stem and flag of this scribe's full-black semiminim, but it leaves off the required dot of addition. The other two are semivoid, the first of which most closely matches the graphemes found in the other copies (although it reverses the void and black halves) and the second of which is completely unique to this source. The first could be explained by scribal error or whim; technically it matches the textual description of the note value for copies that use a void flagged semiminim, so it could have been copied from an exemplar without the scribe noticing that the grapheme did not reflect his full-black semiminim. The second one has no related sources with which to compare it, nor is it apparently a composite of the dotted semibreve and this scribe's version of the semiminim.

In two other cases, it seems that the scribe writes down the composite parts of this note value rather than providing one new grapheme. As Philip Schreur points out, the copies in Rome 5321 and Washington J6 are related stemmatically to one another due to a number of variants that they alone share; the graphical representation of this note value is one of them.³⁸ The Rome 5321 source, which is the earlier of the two, gives four black semibreves, the last two with descending stems.

Figure 54: Rome 5321, Graphemes for Half a Perfect Breve³⁹



Neither of these graphemes matches the description of the composite parts, since the semibreve is lacking a dot and the semiminim is represented in this manuscript by a void minim shape, not a blackened minim.⁴⁰

Washington, the later source, also provides four graphemes, the first two of which are dotted semibreves and the latter two are semibreves with descending right-flagged stems.


³⁸ Schreur, *Tractatus figurarum*, 60.

³⁹ The ink in Rome 5321 has corroded the writing surface and numerous folios have been affected by bleedthrough, so I have enhanced the scans from the microfilm as much as possible, but some graphemes remain difficult to discern.

⁴⁰ The blackened minim was beginning to be used as a semiminim grapheme in the early fifteenth century practical tradition, and slightly later in the theoretical tradition, but there is nothing in this copy that suggests that this scribe intended this shape to represent the semiminim here.

Figure 55: Washington LC J6, Graphemes for Half a Perfect Breve



In this instance, if the second unit were taken as a semiminim, then the composite that would be formed would look like this:  and it would in fact match the textual description for this note value, since semi-voiding is not required except through the use of a void flagged semiminim. Yet the semiminim in this copy is the void minim grapheme, and the right-flagged black shape is used for the imperfect minim. Either this could be taken as another conflation of the Italian conception of the semiminim with a different proportional note shape, namely that of the imperfect minim, or it is the result of scribal interference. Schreur suggests that the Washington source was “copied either directly from [Rome 5321] or from another source, itself a copy of [Rome 5321];” it is probable then that the latter scribe intended to update or correct the Rome graphemes by adding a dot to the first grapheme and a flag to the second.⁴¹

Four manuscripts remain: Catania D 39, London 4909, Faenza 117, and Pisa 606. In the case of the Faenza manuscript, Schreur states that the grapheme written is a dotted void semibreve with a descending flagged stem, yet in the microfilm copy of the manuscript there is no grapheme in this section. Schreur finds the same grapheme in the Pisa copy, but the scribe of that manuscript copied each of the graphemes upon a single staff line, such that it is unclear whether certain figures are full-black, void, or semivoid. In the case of this

⁴¹ Schreur, *Tractatus figurarum*, 60.

composite note value, it is possible that the figure is void in its lower half, thus actually matching the ‘correct’ set of graphemes shown above.

Figure 56: Pisa 606, Grapheme for a Perfect Breve



In the Catania copy, the only graphemes given are two void semibreves; it seems that this scribe, who used only void notation for the entirety of the manuscript, was either unable to appropriately transfer these complex symbols into only void note shapes or mistook the text to suggest that the tempus being divided into two equal parts was an imperfect void breve, thus creating two equal void semibreves.

Lastly, the eighteenth-century manuscript London 4909 shows a black dotted semibreve with a descending stem. While it is a copy of a lost earlier manuscript, London Cot.Tib.B.IX, it apparently is a rather poor one; Johann Christoph Pepusch, the scribe, has expanded the original Latin abbreviations in a variety of inaccurate or unusual ways, and the proportional graphemes he transmits are largely incorrect. No other copy of the treatise contains this variant on this composite figure, though it is possible that an eighteenth-century scribe might have been offput by a semi-void grapheme and as such ‘corrected’ it by filling it entirely in. The copy to which it is most closely related is the one in Siena L.V.30, and one of those graphemes is the unusual vertically semi-void dotted semibreve with the descending stem; perhaps some variation on that figure existed in the earlier London treatise and Pepusch amended it, thinking it an error.

For this first note value, it is clear that the composite graphemes that match both its textual description and its component parts are found in the earliest sources: all three copies in Seville use a combinative grapheme that appropriately reflects their respective choices of semiminim. The Chicago manuscript apparently errs by transcribing the semiminim as a black flagged grapheme instead of void, since the composite shape is identical to those found in Seville 2 and 3. The more chronologically close manuscripts, such as Naples, Rome 1377, and Pisa 606 all maintain graphemes that are similar to that called for by the text; they are either missing their dot of addition or they match the composite grapheme found elsewhere despite it not using the semiminim shape found in that manuscript. But with the exception of the Rome 5321 copy, the later the manuscript is, the more the composite grapheme neither reflects the textual description nor makes use of its own semiminim shape. While some scribes might have copied graphemes exactly as they were in their exemplars, a study of this one note value shows clearly how scribes felt free to update or amend graphemes. At least in some cases, such as Seville 1, it is possible to determine what might have motivated them to alter their exemplar: a changing approach toward the semiminim.

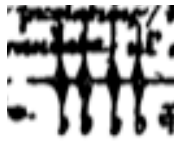
The next new composite note value given in the treatise is another unnamed unit, four of which are equivalent to seven minims. The note shape for this new duration is textually described in groups: “Four noteshapes with a tail above and below and with the lower tail turned back on itself ...”⁴² This grapheme, like the one above, is a composite of two separate note shapes and durations, in this case four minims and four imperfect minims,

⁴² “*Item figure superius et inferius caudate vel cauda inferius retorta, quatuor ex istis valent septem minimas ut hic.*”

Trans. Schreier, *Tractatus figurarum*, 86-87.

which are worth three minims. Since we already know from elsewhere in the text that the imperfect minim is a black flagged shape, the grapheme for this new duration is thus a black rhombus with an ascending stem, representing the minim, and a descending flagged stem, representing the imperfect minim, shown here:

Figure 57: Chicago 54.1, 4:7 Note Value





This grapheme is the most frequently copied for this note value, being found in all but three of the thirteen sources. The London source offers a simple void minim for this note value, clearly an error borne out of either a poor exemplar or centuries of distance from the theorist's intent (or both), but the other two sources' graphemes are more intuitive. In the early Seville 3 copy, the grapheme given is a voided version of the one given above. As I mentioned earlier, the scribe of this copy uses a void flagged figure for the imperfect minim, so he apparently followed the textual description and, in combining his void flagged imperfect minim with the regular black minim, created a fully void grapheme.

The Catania source, however, uses a grapheme similar to Seville 3 but with a flag also placed on the uppermost stem. This scribe uses only void notation, so the voiding itself may be a moot point, but the presence of the second flag is unclear; it is not called for in the text, nor does it make mathematical sense if taken as an imperfect minim. But this scribe used the void flagged grapheme for multiple durations: the semiminim, the imperfect minim, and another composite figure worth one and a half minims. Perhaps this scribe meant for the

two sets of flags to represent a combination of two of these durations, yet none of the different combinations available between the durations of half a minim, one and a half minims, and 4:3 minims creates the required 4:7 proportion. In this case, the addition of the second flag to the void dragma is superfluous and apparently due to scribal error.

The next proportional figure is directly based on this one, the only change being the addition of the hollow punctus. This adds a semiminim's duration to each grapheme, making the group of four equal to nine minims: "If a hollow dot, which is worth as much as a semiminima, is added to them, then those four are worth nine minimae, if you count correctly ..."⁴³

All of the sources except three follow the instructions here to add a hollow punctus to their 4:7 note value. Rome 1377 adds a flag to the topmost stem and leaves off the hollow punctus: . This source uses the hollow punctus for the semiminim itself, but uses a void flagged shape in all the other composite note values requiring a semiminim's duration; the top flag might have been deliberately chosen to represent the semiminim, creating a grapheme accurate in duration if not in description. Rome 5321 adds the hollow punctus to the note shape as required by text, but inexplicably voids the grapheme: °. The Catania source, stated above to have used a void dragma with both an upper and lower flag for the 4:7 unit, does not add a hollow punctus to that figure, but instead provides a list of four different graphemes, each of which has a hollow punctus added to it, as shown here:

⁴³ *"Quod si adiungatur eis punctus vacuus qui valet tantum quantum semiminima, tunc iste quatuor valent novem minimas si recte computus ut hic."*

Trans. Schreier, *Tractatus figurarum*, 86-87.


Figure 58: Catania D 39, 4:9 Graphemes



Of these, the second comes closest to matching the note shape found in the other treatises, though it is upside-down; none of these graphemes reflects the textual imperative to add a hollow punctus to the grapheme for the 4:7 note value.⁴⁴ All of the other copies of this treatise add the hollow punctus to whatever grapheme that scribe gave the 4:7 unit, regardless of whether that grapheme reflected the text for that unit.

The last composite figure mentioned in the treatise is explicitly stated to be worth a dotted minim, or the addition of a minim and a semiminim:

“A minima half-filled above and half-empty below in one body – and with a tail above and below and with the lower tail turned back on itself – is worth a minima and a semiminima ...”⁴⁵

This is, in fact, the only reference in the treatise to a semivoid grapheme; the division of the perfect breve into two equal halves was widely interpreted to be semivoid, but the text does not explicitly require that interpretation. Here, the blackened minim comprises the top portion of the figure, while the lower void flagged half is worth half a minim: .

⁴⁴ Regardless of which duration is given the void flagged figure, which in this manuscript could be equal to half a minim, one and a half minims, or 4:3 minims, the four figures combined cannot add up to the required total of nine minims. Therefore it seems that the Catania scribe was once again thwarted by his constant use of void notation and was unable to create the textually described composite figures through the note shapes he had at his disposal.

⁴⁵ “Item minima superius semiplena et inferius semivacua in uno corpore superius et inferius caudata et inferius retorta valet minimarum cum semiminimarum ut hic.”


Trans. Schreier, *Tractatus figurarum*, 88-89.



Nine of the fourteen copies clearly transmit a grapheme matching this description. The tenth, Pisa 606, may also do so; as was stated earlier, the Pisa scribe wrote his examples upon a staff line that sometimes obscures the clarity of the grapheme, and the quality of the microfilm prevents a clearer reading. Semivacuity in this grapheme is difficult to ascertain; Schreier renders these graphemes completely void in his critical edition, though to my eye that is impossible to determine. Rather, it appears that this grapheme could quite well be blackened on the top half and void on the lower, as the text demands:

Figure 59: Pisa 606, Grapheme Worth One and a Half Minims



The graphemes in the last three manuscripts are more clearly altered. Once again, the Catania scribe is unable to render this note shape as the text demands; he simply provides another void flagged figure: \diamond^{\uparrow} ; in this copy of the treatise, that grapheme could thus represent a semiminim, a imperfect minim, or a dotted minim. In the London copy, Pepusch gives two minim shapes for this note value, one semivoid with a blackened upper half: \downarrow , and one semivoid with a blackened lower half: \uparrow . Neither is entirely what the text asks for, though again whether this is due to his unfamiliarity with the text or a poor exemplar or both is unknown. The Seville 3 copy portrays this note value as a semivoid double-stemmed minim, in effect the same as the correct grapheme for this duration but without the lower

flag: . In this regard, it is possible to think that the scribe either accidentally left off the flag or used a void minim version of the semiminim as his preferred composite figure.

Lastly, the Siena scribe offers two different options for this grapheme: one is the correct semivoid figure already presented: , while the other is a full-black version of that grapheme: . The scribe apparently made a conscious choice to adapt the grapheme to his composite note shapes: since his semiminim is a black flagged shape, a composite grapheme using that shape would therefore be full black.

In his critical edition, Schreier has relied on the textual descriptions to determine which of the graphemes in each copy of the treatise are the original or most authentic versions known to the theorist; all others are treated as variants. But a closer reading of each source's approach to their composite figures reveals that these variants were not always accidents, errors, or the result of poor exemplars. Instead, these shapes were often created in specific ways because of the flexibility and fluidity of the shape of semiminim-family units, especially the semiminim.⁴⁶ I have compiled all graphemes from every copy of this treatise into Table 4, found at the end of this chapter.

In the fourteen copies of this treatise, the semiminim is written down variously as the void flagged unit (which was apparently the one envisioned by the author), the black flagged

⁴⁶ In his critical edition of this treatise, C. Matthew Balensuela states that “in both [the *Ars cantus mensurabilis* and the *Tractatus figurarum*], the perfect and imperfect minimae form the basic units for all the new note shapes introduced.” However, my investigation of both treatises reveals that this statement is not completely accurate; while the imperfect minim is used to create two of the four composite note values, the semiminim is used to create the other two. These note values, moreover, are not entirely distinct from each other since in the myriad copies the two share graphic similarities. The proportional graphemes created in *Tractatus figurarum* are better understood as being constructed from two different but related semiminim-family units.

Balensuela, *Ars cantus mensurabilis*, 79.

unit, the void minim, and in one case the hollow punctus. Excepting the last, these shapes are all commonly used not just for the semiminim but also for the other semiminim-family units (those that create sesquialtera or sesquitertia proportions) in a wealth of other late fourteenth- and early fifteenth-century theoretical and practical literature, including this treatise. Here, the black and void flagged figures are also used for the sesquitertia imperfect minim, the void flagged grapheme also for the dotted minim, and the void minim for the sesquialtera unit; each of these three shapes was also used in the creation of composite shapes. As I demonstrated in earlier chapters, the Italian approach to the unit called the semiminim was that it could create the duple, sesquialtera, or sesquitertia proportions, and these could all be expressed by one of many grapheme options, though many theorists such as this one sought to distinguish between different durations through the use of different graphemes. It seems logical, then, to read the diversity of graphemes offered here for the semiminim and other proportional units as reflective of this Italianate conception of the semiminim itself.

Because of this flexibility both in the note shapes and durations of the three semiminim-family units offered here, these graphemes appear to have been in some respects interchangeable for, or at least confusable with, one another. Therefore, in some of the composite note values, we can see the scribe reworking the required grapheme to reflect his own visualization of the semiminim or imperfect minim, while in others, we can potentially attribute variances in shape to the use of an alternate semiminim grapheme.

Despite this variability in grapheme for the semiminim, which reflects the still-prevalent understanding of it as a proportional value with a variety of possible durations, it is

textually described and mathematically used solely as half a minim. This betrays the (presumably Italian) author's attention to Murisian/French theory, which only allowed for a semiminim that was worth half a minim. The resultant note values thus reflect Stoessel's conception of Franco-Italian arithmetic graphemes, which use component graphemes as mathematical elements that can be added together to form a grapheme with a new, specific duration. In sum, this treatise reflects its dual French and Italian heritage not just through its approach to the creation of composite proportional graphemes but its approach to the nature of the component note values.

V.3.3: Tractatulus de figuris et temporibus

This treatise, an anonymous gloss on the *Tractatus figurarum* and copied alongside three of its extant versions in the Seville 5.2.25 manuscript, is unique in its attempts to separately describe proportional mensural practices in French and Italian styles. The fact that the theorist or scribe of the *Tractatulus de figuris et temporibus* puts forth the composite note shapes of 'Phillipotus de Caserta' – the same graphemes seen in the *Tractatus figurarum* – as French only reinforces the idea that the *Tractatus figurarum* was written specifically to explain French theories to an Italian audience.

The author of *Tractatulus de figuris et temporibus* clearly thought that these composite and proportional graphemes were, if not of French origin, then indicative or reflective of French stylistic practice, since he places each in a very carefully organized discussion of the

four major prolaciones of Murisian theory.⁴⁷ Yet the treatment of small proportional values clearly betrays the author's Italian theoretical heritage as well as his non-Italian influence. The void minim can be used not just for sesquialtera (as a colored minim in Murisian theory) but for any of the Italian proportional relationships discussed in Chapters III and IV. It is also used for a triple relationship otherwise only seen in English and central European sources, while the void flagged minim shape is reserved for a specific kind of duple proportion. Not only are the types of proportions and graphemes mentioned here indicative of Italian theory, but the durations for these and the composite graphemes are determined according to their relationship with a central breve, not with the minim.

The voided minims are described first, according to their roles within each prolacion. In perfect tempus, major prolacion, the only proportion they can create is duple: one breve containing nine minims can be augmented by eighteen of these void minims. The void minim creates the same duple proportion in each of the other prolacions, but also sesquialtera in both tempuses with minor prolacion, sesquitercia in imperfect tempus, major prolacion, and a 9:4 proportion (*dupla sesquiquarta*) in imperfect tempus, minor prolacion.

The void minim can also create a triple proportion in imperfect tempus, major prolacion. This note value is unique; Italian treatises have heretofore not mentioned the possibility of a triple proportion, and English or central European treatises treat this duration as a subdivision, not a proportion. This author was apparently aware of the theoretical expansion of the Murisian gradus system that allowed for the triple subdivision of the minim, but in typical Italian style he has situated his note values in the language of

⁴⁷ http://www.chmtl.indiana.edu/tml/14th/ANOFIT_TEXT.html

proportions with relation to a central breve. Table 4 shows the number of void minimis that the author states can be placed for one tempus in each of the four prolations.

Following this list of ways to augment the breve with the void minim, the author then turns to the use of composite shapes, according to Philippotus. The graphemes he uses are virtually identical to the *Tractatus figurarum*, although some are given different durations here. Unlike the *Tractatus*, though, this author offers no textual descriptions for these graphemes or clarification of their components, only their proportional relationship to the breve. Again, these are broken down according to their use within each prolation.

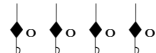
Table 4: Void Minim Proportions in *Tractatulus de figuris et temporibus*


	<i>Sesquialtera</i>	<i>Sesquitercia</i>	<i>Dupla</i> <i>Sesquiquarta</i>	<i>Duple</i>	<i>Triple</i>
Perfect tempus, major prolation					18:9
Perfect tempus, minor prolation	9:6			12:6	
Imperfect tempus, major prolation		8:6		12:6	18:6
Imperfect tempus, minor prolation	6:4		9:4	8:4	


In perfect tempus, major prolation, the theorist describes three of the composite graphemes from the *Tractatus figurarum*: the one that divides a perfect breve into two equal parts, the 4:9 unit, and the unit worth a dotted minim:

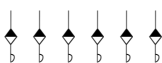
“According to the Master Philippotus de Caserta, who said that the tempus may be augmented [diversified] by other diverse figures, as is apparent below.


Hence it should be known that the aforementioned master Philippotus put these four figures for one tempus, namely the perfect tempus of major prolation, as here:



And sometimes he put two such figures for one tempus, as here: 

And sometimes four such: 

And sometimes six such, as here: 

And sometimes five, as here: 


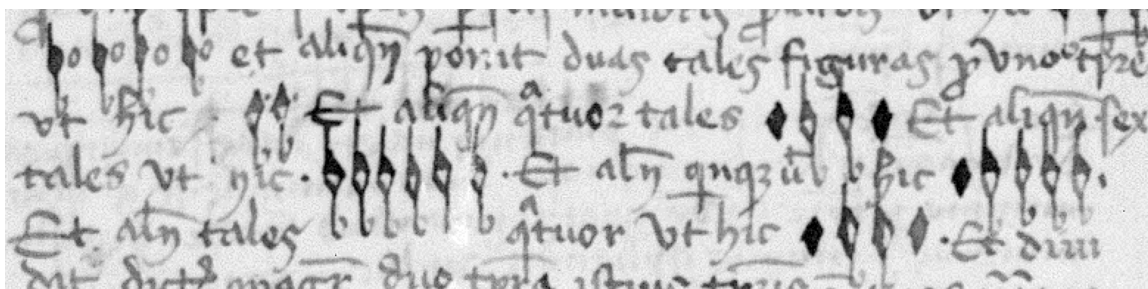
And sometimes such four as here:  ⁴⁸

Figure 60: *Tractatulus de figuris et temporibus*, Seville 5.2.25, Composite Graphemes in Perfect Tempus, Major Prolation



The durations presented here are, with one exception, are identical to the graphemes given in the earliest sources for the *Tractatus figurarum*. Seville (copy 2) and Chicago 54.1.⁴⁹

Note values worth a dotted minim are also found in perfect tempus, minor prolation and imperfect tempus, major prolation. The grapheme used above for the dotted minim duration is used as an option in the latter, but the author also introduces another grapheme

⁴⁸ “Secundum magistrum Philippotum de Caserta dicta tempora possunt augmentare per alias diversas figuras, sicut inferius apparent.
Unde sciendum est, quod predictus magister Philippotus ponit istas quatuor figuras pro uno tempore, scilicet temporis perfecti maioris prolationis, ut hic:
Et aliquando ponit duas tales figuras pro uno tempore, ut hic:
Et aliquando quatuor tales:
Et aliquando sex tales ut hic:
Et aliquando quinque ut hic:
Et aliquando tales quatuor ut hic:”

http://www.chmtl.indiana.edu/tml/14th/ANOFIT_TEXT.html

⁴⁹ The vertical semivoiding seen here in the one example is only found in one other later copy, Siena L.V.30.

for the dotted minim duration in both of these mensurations; it was also seen in the *Tractatus figurarum*, but there it was used for the 4:7 relationship:

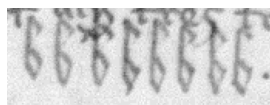
Figure 61: *Tractatulus de figuris et temporibus*, Grapheme Worth One and a Half Minims



No rationale is given by the author for why this grapheme is assigned a different duration in this treatise. It would be easy to assume that this grapheme is a composite of a black minim and the flag from a semiminim, creating a dotted minim's duration, but several things prevent this explanation: this author never uses the word semiminim to refer to a French note value; in all descriptions of French note values, the unit in a duple relationship with the minim is the void minim or a void flagged shape; and it is equipollent with the semivoid figure shown above. Perhaps the author decided to use an entirely blackened grapheme specifically in order to differentiate it from the semivoid grapheme in cases of polymensuralism (in particular the mixture of perfect tempus, minor prolation with either perfect tempus, major prolation or imperfect tempus, major prolation).

The last French note value of interest in this section is mentioned only once. In imperfect tempus, minor prolation, the duple proportion can be graphically depicted by the void minim, but also by a void flagged grapheme, shown here:

Figure 62: *Tractatulus de figuris et temporibus*, Void Flagged Grapheme in Duple Proportion
















In the *Tractatus figurarum*, this grapheme was called a semiminim and was specifically used in the creation of composite shapes. But here, not only is this note value not named, but neither it nor any other part of prolation is mentioned as a component part of any other proportional figure. The author's Italian bias is very clear here; not only can the same grapheme (the void minim) contextually denote numerous proportional relationships with the minim, but more than one grapheme can be used for the same duple proportion.




Yet immediately after the presentation of this last grapheme, the author writes “*et sufficit de figuris francigenis*” – and this is sufficient for French figures. Was the author implying that these note values were used in France? In French music, or in theory? Given his direct citation of ‘Philippotus de Caserta’ and the *Tractatus figurarum*, it is more likely that he was putting forth these graphemes as the notation most suited to applying Italian preferences for rhythm and proportion within a French context – namely, the four prolaciones. Some of these may be arithmetic, though they are without the textual descriptions that would allow us to determine the specifically mathematical values of their component parts. Others, including the altered graphemes, are proportional. In either case, though, the author is clearly operating in an Italian milieu in which French theories have already been adapted.

The author then continues with the Italian graphemes, in which he lists the main note values:

The figures and tempores of the French have been discussed, so now the figures and tempores of the Italians must be seen.











And first it should be known that according to the Italians we have such figures, namely the double long, as here: the long as here:  breve:  semibreve as here: 
minim as here:  semiminim: 

And note that all of these figures are figured in different ways, namely the double long as here:  or here:  the long as here:  or here:  breve as here: 
semibreve:  minim as here:  semiminim as here: 


Also such figures are placed:  and such as these:  and such as these: 

...

And of these semiminims that are worth three for two minims:    

And of these that are worth eight for four:           „⁵⁰

Two of these note values are of interest, but only one is given a name: the semiminim, here written a black flagged figure and described as the unit that creates sesquialtera with the minim. But the wording of this section is such that the subsequent duple proportion note value may also be construed as a semiminim: “And *these* semiminims are worth three for two minims, and *these* [others] are worth eight for four ...”

The grapheme  at first glance is similar to the composite shapes used in the *Tractatus figurarum* and the French portion of the *Tractatulus*, yet it is not arithmetically constructed from the note values that this author shares in this treatise. The right-flagged grapheme creates sesquialtera; assuming the descending stem and flag also represent this note value, the result could not be a duple proportion note value. This too, then, is another of Stoessel’s proportional note values; despite being labeled as an Italian note value, it has its origins in French theory.

⁵⁰ “*Dictum est de figuris et temporibus francigenis, nunc videndum est de figuris et temporibus ytalicis. Et primo sciendum est, quod secundum ytalicos habemus tales figuras, videlicet duplicem longam ut hic, longam ut hic, brevem, semibreve ut hic, minimam ut hic, semiminimam. Et nota, quod omnes iste figure diversimode figurantur, videlicet duplex longa ut hic vel sic, longa ut hic vel sic, brevis ut hic, semibrevis, minima ut hic, semiminima ut hic. Ponunt etiam tales figuras et tales ut hic et tales ut hic ... Et de istis semiminimis valent tres pro duabus minimis: Et de istis valent octo pro quatuor:*”

Semiminim-family units are clearly important to this author. The semiminim is explicitly named in the Italian section, and if it is true that the new proportional figure is also believed by him to be a semiminim, then in typical Italian fashion the semiminim has multiple proportional durations and graphemes. In the French section, a wide variety of graphemes and durations are also presented, but none are named, possibly because the author includes Italian proportions not otherwise found in French theory (such as sesquitercia and dupla sesquiquarta). Yet even in this section, the author demonstrates his Italian heritage by comparing all note values proportionally to a central breve and by allowing the same grapheme to portray numerous durations. This treatise and the *Tractatus figurarum* highlight not only the voracious appetite that Italians had for French theory and style; they show Italian theorists continuing to engage with and adapt Murisian teachings, incorporating the prolaciones, coloration, and elements of French style into Italian frameworks in a continued search for specificity in rhythmic notation.

V.3.4: Berkeley II (Berkeley 744, Catania D 39, London 23220)

In previous chapters, I have brought attention to the fact that the second Berkeley treatise contains language and graphemes that are anomalous to the predominant patterns I have established for the regional approaches to semiminim-family units. Despite its apparently French provenance, the author uses the much more typical Italian verb *ponere* to describe the relationship of its semiminims and additae to the minim. This implies that he conceives of them as proportions instead of subdivisions, a much more Italian trait. Also, the graphemes found in all three copies contain Italianate graphemes, such as the minim

with the flag shaped like the numeral 2 or the void figures only otherwise found in the *Tractatus figurarum* and *Tractatulus de figuris et temporibus*. To this list I can now add one last anomaly that highlights once again the connections that this treatise has with contemporary Italian theory.

The second Berkeley treatise shows two composite figures that blur the lines between Stoessel's arithmetic and proportional note shapes. The author first describes the fusa, two of which can be used in place of three minims in any prolation, though three in minor prolation could replace four minims. The reason for the shape of this note is as follows:

“Just as an upward tail always lightens by half, so a tail pointing downward ... ought to become heavy by half; and if one pointing up should diminish, one in the opposite direction ought to augment. Therefore, just as an upward tail added to a semibrevis (at least in minor prolation) diminishes half of its value and makes it a minima, so a downward tail added to the same minima augments its value by half and makes it worth a minima and a half. A downward tail added to a minima can also add a third part of its value.”⁵¹

Explicit here is the desire to create composite graphemes that rely on the borrowing of graphic elements from well-known or established durations; the fusa's grapheme is therefore comprised from interpretations of the minim. Yet the downward tail does not add the value of a minim, but half of a minim. The tail thus adds a precise mathematical value to the note shape, but this value does not correspond to the note shape from which the

⁵¹ “*Nam sicut cauda sursum alleviat aliquando pro medietate, sic cauda deorsum tendens debet pro medietate per oppositum aggravari, et si sursum tendens tollat per oppositum deorsum debet augere. Ergo sicut cauda sursum apposita semibrevis saltem minoris prolacionis tollit sibi medietatem, et facit eam esse minimam; sic cauda deorsum apposita eidem minime auget medietatem sui valoris, et facit eam valere minimam cum dimidia, et cauda apposita minime deorsum sibi potest addere terciam partem sui valoris.*”

Trans. Ellsworth, *The Berkeley Manuscript*, 126-129. In the Catania source, the fusa is shaped as a voided minim, which clearly defies the textual description of the note value as it has no descending stem.

component element is borrowed. Thus Stoessel posits this fusa as a proportional value, but it has strong hints of arithmetical influence.

It is the second new grapheme that is of the most interest here. In perfect tempus, minor prolation, the division of a perfect breve into two equal parts could be achieved using a dotted semibreve, so no special note shapes are needed. But in major prolation, dividing the perfect breve in half necessitates a new note shape worth four and a half minims. In his description of this unnamed note value, the author states that a descending stem is added to the semibreve; the same stem found in the description of the fusa can augment the length of a note by half or by one third. Such a stem added to a perfect semibreve worth three minims would thus add the required one and a half minims to the note value. A note shape matching this description is found in the London manuscript: ♯ and a voided version of the same in Catania: ♯. Yet despite the Berkeley manuscript being the earliest source for this treatise, it is the only one of the three sources to offer a grapheme that does not match this description; it adds a thick black hook to the stem:

Figure 63: Berkeley II, Berkeley Manuscript, Grapheme Worth Half of a Perfect Breve



The author states that the downward stem could also augment by a third of its value; this would add the value of a minim to the perfect semibreve. Half a minim thus still needs to be accounted for. Perhaps the angled line added to this grapheme was an attempt on the part of this scribe to use both the downward stem (worth one third of the note's value) plus

the hook from the semiminim (worth one half of a minim) to create a unit worth four and a half minims. There is a precedent for the use of the thicker angled line to mean half of a minim, since it is found on the semiminim grapheme copied in the London manuscript, but the Berkeley manuscript precedes that copy; still, it is possible that this scribe was familiar with this contextual meaning.

If it is true that the flag was added to this unique grapheme specifically to signify the extra half a minim, then the note shape cannot be seen as a purely proportional figure in Stoessel's view. The descending stem is either a proportional element, in that it adds one-third of the note's value to itself, or an arithmetic element, in that it could stand for the minim itself. But the flag itself is arithmetic. Regardless of the provenance of the author of this treatise, the scribe at least was familiar with both French and Italian theories. If the Berkeley manuscript was in fact copied in Paris around 1375, then either the scribe or theorist had spent enough time in Italy to familiarize himself with practices there or Italian theories had been making their way to Paris long enough to influence the writing of this treatise. In either case, until and unless more information about the theorist of the Berkeley treatises comes to light and definitively answers the question about his provenance, this treatise remains a tantalizingly unique illustration of the merging of French and Italian theories at the end of the fourteenth century.

V.3.5: [Johannes Boen], Ars Musice, appendix (Venice 3434)

The treatise *Ars Musice* by Dutch theorist Johannes Boen has been dated to the mid-fourteenth century; Boen died in 1367. Yet the appendix added to one of the two copies of

his treatise, found in the manuscript Venice 3434, references the famous isorhythmic motet *Rex Karole / Letitie pacis*, which may date to around 1375-76. Because of this citation, it is impossible to think of the entire appendix being a later addition by Boen himself, though it could have been constructed piecemeal by more than one person. Whether any portion of this appendix could have come from Boen is not provable; however, it seems that the author of at least one section of the addition was not a native of Italy. He appears to be familiar with Italian practices, but not intimately, as his descriptions are vague and carry a note of disdain or surprise at the new combinative shapes being created by the otherwise unknown “Lombard named Gwilgon.” The entire passage in question is quoted here:

“Also, the minim always remains under one form, as above, and if a note longer than longs or smaller than minims is considered to be necessary, then as in the following figures or ratios in music it must be notated in the clearest possible form. Sometimes wonderfully organized figures are found, from a Lombard by the name of Gwilgon, having a way of being performed according to proportions, and yet still they are ignorant of the subject of music. And that these figures have been established in this

manner, namely like these figures: \diamond°

secondly, that which is called the semidragma punctata and uncata is worth three.

Or, four such figures are placed for one perfect tempus, as here: $\square^\circ \diamond^\circ \diamond^\circ \diamond^\circ \diamond^\circ \diamond^\circ$

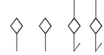
This imagination I praise not, because to have four to nine in musical proportions is superpartiens because it contains a larger number twice the smaller, with its ninth part aliquot [left over]; in what follows, we will say a little about this and also above in our subalternate *Musica* this is expressed satisfactorily. Also such figures are found:

$\diamond \diamond \diamond \diamond \diamond \diamond \blacksquare$

six of these make a perfect tempus, and such a figure is more worthy of praise than the first two figures, because this figure makes six to nine in a subsesquialtera proportion. Fuselle are found, which according to the antiquos were found in major prolation and never in minor, but now according to proportions that the moderns render to these figures, with figures invented for this purpose placed in order to make mixed song, but always with regard to saving those that remain in binary numbers, namely. Also these fuselle are written with hooks above and below, which are useless, because they stand combined on a whim and sometimes in this way and sometimes that, according to the proposed signs. An example of all heretofore said

here: $\diamond \diamond \diamond \diamond \diamond \diamond \diamond \diamond \square \diamond \diamond \diamond$

Also tragme are found which according to the antiquos were placed for an altered semibreve, but the moderni, with other figures according to the sign augment or diminish in this way or that, as the example of proportions in this figure makes clear:



Also these tragme are hooked and are interpreted according to their shape. Also sincope are found, namely a square note which has on its head a hooked line to the right part aiming left, as here: □ ◱

And such notes crowned in such a way create an important general pause that is pronounced under one breath, which is often how it is found.”⁵²

This author’s intent is therefore to discuss notes outside of the parts of prolation, those that are longer than longs or smaller than minims, which because of their less than common nature must be notated as specifically as possible. This otherwise anonymous Gwilgon apparently created composite note shapes with specific proportional durations by which our author is both fascinated and horrified; they are “wonderfully organized,” but the

⁵² “*Item minima semper manet sub una forma ut supra. Et si longiorem longis vel minuciorem minimis haberi necesse fuerit hoc sub infrascriptis figuris vel proporcionibus ad musicam debitis in meliori forma qua poterit transponere, videlicet. Aliquociens inveniuntur figure mirabiliter ordinate ab uno lombardo nomine Gwilgon habente modum pronunciandi secundum proportionales et tamen subiectum musice ignorante. Et eo ista figuras sibi ordinavit in hunc modum scilicet quod tales figure: secundarie que vocatur semidragma punctata et uncata valerent tempus. Vel tales quatuor figure ponuntur pro uno tempore perfecto, videlicet:*

Quam ymaginacionem non laudo, quia quatuor ad novem habent se in proporcionibus musicalibus, quia superparciens, quia continet maior numerus bis minorem et eius nonam partem que pars est aliquota; de quibus in posterum modicum dicemus et etiam superius in nostra Musica subalterna satis est expressum. Etiam inveniuntur tales figure:

quarum sex faciunt tempus perfectum; et magis est laudanda talis figura quam due prime figure, quia iste figure sex habent se ad novem in proportione subsesquialtera. Inveniuntur fuselle, que secundum antiquos fiebant in prolatione maiori et nunquam in minori, sed nunc propter proportionales que moderni referunt ad istas figuras, cum figuris ad hoc inuentis ponuntur ad voluntatem componentis cantum, sed semper salvis salvandis ipsis manentibus in numeris binariis, scilicet. Etiam iste fuselle [faciatur] per uncaciones sub vel supra conscribuntur, de quibus non est vis, quoniam stant ad libitum componentis et aliquociens sic vel modo sic secundum signorum propositos. Exemplum de omnibus predictis ut hic:

Inveniuntur etiam tragme que secundum antiquos ponebantur pro semibreve altera, sed moderni eam cum aliis figuris secundum signa augent et minuunt modo sic et modo sic et modo sic, secundum quod in figura patebit proporcionum exemplum:

Etiam iste tragme uncantur et valent secundum signa. Inveniuntur etiam sincope, videlicet note quadrante habentes in capite tractulum uncatum a dextra parte versus sinistram ut hic:”

http://www.chmtl.indiana.edu/tml/14th/BOENARSM_MVBM8-24.html; Gallo, *Ars (Musicae)*, 40-42.

The graphemes given in Gallo’s critical edition are flawed; the ones presented here have been designed after an examination of Venice 3434 itself.

proportions created are ones with which he did not always agree, and in many instances it seems that he is not entirely sure of what duration the note shapes are meant to imply.

For example, he clearly disagrees with the 4:9 proportion, since it is aliquot; the 6:9 proportion is much more to his liking, since it creates a subsesquialtera relationship in which there are no parts of the ratio left over. Although 4:9 is a ratio that cannot normally be notated with the commonly accepted parts of prolation, the graphemes for these units are not combinative; rather, the first appears to be a dotted void minim, which in no normal manner could create a 4:9 proportion. If (since all these examples appear to be void) these graphemes represent a dotted regular, black minim, then four would be equivalent to six normal minims, or a perfect breve of minor prolation. But the author does not mention prolation, only that this type of usage was nonsensical because it created the aliquot 4:9 proportion. This section seems geared more toward showing distaste toward this proportion than to showing the proper grapheme to be used for it, so it is possible that this dotted void minim was a placeholder of sorts and not actually connected with this proportion.

The second grapheme is a void double-stemmed rhombus, and if six of these equal nine minims, then each is equal to a dotted minim. This is the note value normally described in other treatises as a fusa, dragma, or fusiel; immediately after the description of this grapheme the author references a fuselle in such a way that makes it seem as though it refers to a separate, undescribed duration. Yet the subsequent example appears to be of the fuselle and hooked fuselle: the same void double-stemmed figure just described, and a duplicate of that figure with a hook on the lower stem.

A similar grapheme, a semivoid rhombus with angled hooks on both the upper and lower stems and, interestingly, which has a hollow punctus, is called the “*semidragma punctata et uncata*.” Despite the specificity of this description, there is no clear definition of its rhythmic value; however, it is the only other treatise outside of the *Tractatus figurarum* and *Tractatulus de figuris et temporibus*, mentioned above, and the fifteenth-century *De musica* by Giorgio Anselmi Parmensis discussed below, that uses the hollow punctus, thus further proving an Italian connection outside the mysterious Gwilgon.⁵³

Lastly are the units called *tragme*, which are a void semibreve with a descending hooked stem, and while traditionally they were used to replace an altered semibreve (or, in other words, four or six minims), nowadays the author says they are used any which way; he then mentions the hooked version of the *tragme*, thus implying that the hooks found on the *tragme* graphemes are errors. Indeed, the semibreve with a downward stem is in many traditions used to denote a lengthened or altered semibreve, so perhaps the *tragme* were not intended to have hooks, or the hooked grapheme was meant to represent the ‘*tragme uncantur*.’ Yet even so, the modern duration for the *tragme* and any duration for the hooked *tragme* are not specified.


The choices of name for several of these units are confusing. In all other treatises in which the terms *dragma* or *fuselle* (*fusiell*, *fusa*) are used, either the two terms are presented as synonyms and one is consistently used, or only one term is used at all. In no other treatise

⁵³ The hollow punctus is also found in the Siena L.V.36 copy of Johannes Ciconia’s motet *O virum omnimoda / O lux et decus / O beate Nicholai*, but in a manner unlike these theoretical treatises describe; in this instance it is added next to the semibreve to signify a minim, not a semiminim. See Pedro Memelsdorff, “Siena 36 Revisited: Paolo da Firenze, Johannes Ciconia, e L’interrelazione di Polifonia e Trattatistica in Fonti del Primo Quattrocento,” *Acta Musicologica* 76, no. 2 (January 1, 2004): 172 fn 42.

have I found that a double-stemmed figure is called in one instance a dragma and in another a fuselle, and if tragme is a derivation of dragma, then I have also never seen this term apply to a note shape that does not have both an ascending and a descending stem. In other words, it is clear that if this entire section is the work of one author, then he is not reporting on one single, unified tradition; he is reporting on a variety of practices or theories that, much like the various terms for the semiminim in Chapter II, are not at all unified in their language.


Because the graphemes presented in this section are not clearly identified – several even appearing to better reflect a description given in a different part of the text for a different note value – it is hard to make any sort of assessment of their composite nature. Still, it is apparent that the author is familiar enough with at least some of the trends in Italian rhythmic notation to include the hollow punctus, and that new note values are being constructed, either arithmetically or proportionally, from note shapes already in existence, including the semiminim.

V.3.6: Anonymous V, Ars cantus mensurabili mensurata per modos iuris (Florence Plut.29.48, Florence 734, Norcia 1260, Paris 7369)

This treatise is an attempt on the part of another anonymous Italian theorist to explain French mensural theory, and as such it contains descriptions of both smaller note values and coloration. What is variously called a dragma, fusa, or fusiel elsewhere is not named here, but it shares a duration with a void or red semibreve such that either three or four  can be used for an imperfect breve of major prolation; if three, then each is worth

two black minims, and if four, then each is worth two red or void minims in a sesquitertia proportion with regular black minims.⁵⁴ The author states clearly that he believes that the first definition is better and more logical than the second, but he gives no explanation for the use of this grapheme when coloration is able to create the proper proportional relationship.

With regard to the semiminims and other smaller note values, I have shown in previous chapters that the author is not entirely consistent; the musical examples indicate that either black or void flagged graphemes can be used in any number of ratios with the minim: duple, sesquialtera, or sesquitertia. Void or red minim shapes, called imperfect minims, are also used for sesquitertia relationships, though they can also create major prolation against minor, and the void double-stemmed minim appears to be equal to two void or imperfect minims.

Each copy of this treatise contains an example of Brother Nicolaus de Aversa's use of semiminims; these are shown above in Figure 21. In each copy, a complex grapheme appears. Florence 734 uses , while Florence Plut.29.48 shows a grapheme with a slightly


⁵⁴ It is possible that they are referred to as imperfect minor semibreves; later in the treatise, the author says:

“Queritur ergo quare semibreves rubee caudantur ex utraque parte? Dico quod sunt semibreves minoris imperfecti.

It is therefore asked, Why are red semibreves tailed on both sides? I say that they are semibreves of imperfect minor.”

The graphemes given here are black, not red, but the note values created are stated to be equal to red semibreves, so perhaps this is simply a poorly worded way of asking why the double-stemmed minim has such stems. However, perhaps this is a reference not to the black double-stemmed figure but the void one; the author states that these figures are comprised of imperfect minims, which create a 4:3 proportion and which are drawn as a void minim. The combination of two void minims to create a double-stemmed void dragma figure of the sort that appears in the musical examples to be equal to two such imperfect minims makes much more sense.

Trans. Balensuela, *Ars cantus mensurabili mensurata per modos iuris*, 249.


different descending stem: . In both cases, three of these graphemes are equal to two regular minims or four of Nicolaus's semiminims.

Since the passage immediately afterward this example describes note values tailed on both sides, which are called 'semibreves of imperfect minor,' it is possible that these unnamed graphemes were considered types of semibreves, but they are not otherwise defined or described. Yet regardless of whether they were thought of as semibreves or as another distinct note value, these figures are both proportional, not arithmetic. They are equipollent with flagged semiminims, either void or black, which could create sesquialtera with minims. However, they have been graphically distinguished from those flagged semiminims through the addition of the descending line or virgule, which therefore cannot contain durational significance in the manner of combinative note values. As opposed to C. Matthew Balensuela's view that these composite shapes were based on the imperfect minim, these note values instead were created specifically to be visually distinct from the flagged semiminim.

V.3.7: De minimis notulis (Strasbourg 222)


As mentioned in the preceding chapters, the author of this treatise is internally inconsistent in his definitions of the two note values that concern the present study: the semiminim and the minime semiminimarum. Coussemaker's copy appears to begin somewhere in the middle of the treatise. The opening paragraph states that the notation and definitions of the longer note values such as the long, breve, and double long were sufficiently explained earlier, but that the current discussion would focus on the smaller note

values that the modern, more subtle musicians use.⁵⁵ The author continues by listing the smaller note values that are in use: the minim, the semiminim, the minime semiminimarum, and the double-stemmed minim (the unnamed dragma or fusiel, here equal to a dotted minim), as well as voided note values.

His first mention of the semiminim, in which the grapheme  is described as like a minim but which has a bent-back stem in the manner of wind (“*ad modum venti*”), states that four in major prolation are equal to one semibreve, creating a sesquitertia proportion with the minim. Immediately following is the paragraph on the minime semiminimarum. This grapheme is described specifically as a semiminim with a descending tail and is also used in major prolation, and two of these are worth one minim. Yet as I explained in Chapter III and above in the section on diminution, he later changes his definitions; if all note values are cut in half in diminution, then the semiminim is that worth half of a minim. Also, the unnamed dragma or fusiel is described as being equal to a dotted minim, since two of them replace a single semibreve in major prolation; in diminution, it is replaced by the minime semiminimarum, making that note value worth a dotted semiminim.



⁵⁵ “*Item notandum quod notularum species quantum plures in hac arte reperiuntur que etiam diversas sibi sortiuntur denominationes. Quedam enim dicuntur longe, quedam breves, quedam vero duplices longe; quedam codependent, quedam non. Et de notitia et differentia illarum satis patuit in precedentibus; sed de minimis notulis artis mensurate quibus utuntur multi moderni subtilesque musici panca sunt hic advertenda.*”

It should be known that of the many species of notes that are found in this art that they also sort themselves into diverse denominations. For some are called longs, some breves, and some also double longs; some are codependent, others not. And of the notation and differences of these was made clear earlier, but of the smallest note values of mensural art which many of the modern and subtle musicians use are few, as here shown.”

If the semiminim is equal to half of a minim, and the minime semiminimarum is equal to half of a double-stemmed minim, then it is easy to see how this composite grapheme  was created. The addition of the flag from the semiminim to the upper stem of the double-stemmed minim causes the note value to be cut in half, just as the addition of a flag to the stem of the minim creates the halved note value of the semiminim. Conversely, since the minime semiminimarum is described as a semiminim to which a lower stem has been added, it could be interpreted that the descending stem added half the note's value to itself, just as the same stem added to a minim creates the grapheme equal to a dotted minim. In any case, the creation of this grapheme reinforces the second of the two descriptions of the semiminim, in that the flagged grapheme is in fact worth half of a minim, and as an arithmetic figure, it demonstrates the continuing reintroduction of Franco-Italian theory back into France.

V.3.8: De musica mensurata (Kremsmünster 312, Munich 24809, Warsaw 61?)

This treatise and the subsequent *Tractatus de musica mensurabili* list numerous new note values that are used by the moderns. In addition to the semiminim, they both list the semifusiel and the semifusiel semi.

In *De musica mensurata*, the semiminim  is worth half a minim; the fusiel  is worth one and a half minims and is used in major prolation. The semifusiel is at first stated to be worth half of a fusiel, or one and a half semiminims, but then the author states that both it and the semifusiel semi actually share the same duration as the semiminim:

“The semifusiel is so named from ‘semis,’ which is half, and fusiel, so in other words, half of a fusiel. The semifusiel semi is so named as a kind of half fusiel and is called ‘semi-’ twice as a result, because the first semi- designates one hook, but two semi-s designate two hooks. But as to why the semifusiel and semifusiel semi have hooks, the reason is because they are equipollent to semiminims, but distinguish between prolations, as is seen in mixed song.”⁵⁶

Figure 64: *De musica mensurata*, Graphemes from Munich 24809

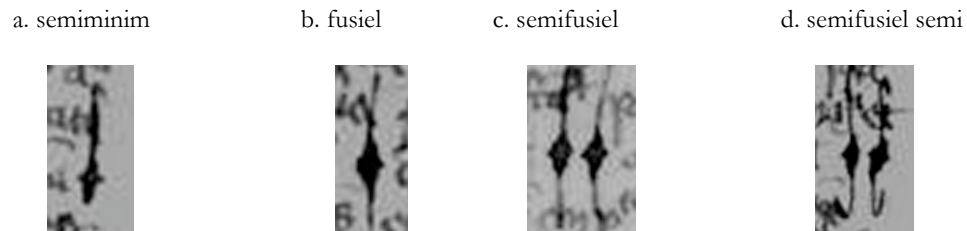
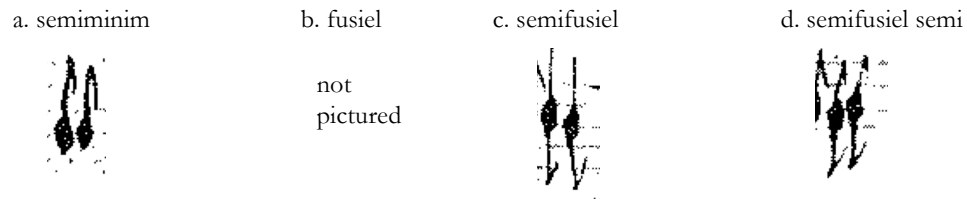






Figure 65: *De musica mensurata*, Graphemes from Kremsmünster 312 / Kellner



This description clearly links the prefix semi- to the addition of the semiminim’s hook onto the fusiel’s shape; the semifusiel with one hook,  or  , is worth half of a fusiel. But as for the semifusiel semi, the author simply states that the prefix semi- is repeated twice because it is given two hooks:  or  . This implies that the semifusiel semi should be worth half of a semifusiel, creating a note value smaller than the semiminim, but the author explicitly states

⁵⁶ “*Semifusiel dicitur a semis, quod est dimidium et fusiel, quasi dimidium fusiel. Semifusiel semi dicitur quasi dimidium fusiel et dicitur bis semi ea de causa, quia primum semi designat unum uncum, sed bis semi designat duos uncus. Quare autem semifusiel et semifusiel semi habent uncus, ratio est, quia equipollent semiminimis, sed diversificant prolationem, ut patet in cantibus mixtis.*”

that both the semifusiel and semifusiel semi are equal in duration to the semiminim, and therefore also to each other.

Because these two note values are used to ‘distinguish between prolations,’ it is possible that they are both equivalent to a semiminim, but one is used in major prolation while the other is used in minor. Unfortunately, the author does not clarify which should be linked to which mensuration, or why. Despite the vagueness of this assessment and the conflicting durations attributed to the semifusiel, it is made explicitly clear by this theorist that the application of the hook from the semiminim grapheme to the stem of the fusiel diminishes the note value by one half.

The fusiel, semifusiel, and semifusiel semi are therefore proportional. Had this author been consistent in his description of the semifusiel as a division of the fusiel, he would have constructed another type of mensural hierarchy like that described in the Melk treatise. Yet his second definition links these note values durationally to the semiminim, the hooks of which are used on these two graphemes. Unlike Anonymous V, for whom the presence of different semiminim-family graphemes signified visual differentiation of proportions within a single voice part (as implied by the examples), this author apparently meant these multiple graphemes to distinguish between vertical combinations of mensurations, but in ways that he unfortunately did not clarify. The same approach to new note values is seen in the closely related *Tractatus de musica mensurabili*.

V.3.9: *Tractatus de musica mensurabili* (Wrocław IV.Q.16)

The anonymous *Tractatus de musica mensurabili* is a Polish treatise dating to the first half of the fifteenth century. Like the previous Silesian treatise, it too offers a description of the semiminim's rest:

“But there are other rests transcending the middle of a space, and these are of two kinds, namely the lines [going] upward and downward. For instance, the rest descending to the middle of a space designates the semibreve, but that ascending to the middle of a space represents the minim in any prolation. But another rest ascends to the middle of a space, and if it were hooked, it represents the semiminim.”⁵⁷

Its only manuscript source, Wrocław IV.Q.16, is unavailable on microfilm, and the one page of the manuscript that is reproduced in Johannes Wolf's 1918 article only shows the semiminim proper, not its rest.⁵⁸ Wolf reproduces the rest as ♯, which matches the rest found in Warsaw 61 and the textual descriptions in both this treatise and *De musica mensurata*. The more angled hook is also found on the semiminim, which I have reproduced here from Wolf's article in Figure 65.

Figure 66: *Tractatus de musica mensurabili*, Wrocław IV.Q.16 /Wolf, Grapheme for the Semiminim






⁵⁷ “Sunt autem alie pause media spacia transcendentes et tales sunt duplices, scilicet sursum tracte et deorsum. Nam pausa descendens ad medium spacii designat semibreuem, sed ascendens ad medium spacii in utraque prolatione minimam representat. Alia autem pausa ad medium ascendens spacii, si fuerit vncata, semiminimam representat ...”

http://www.chmtl.indiana.edu/tml/15th/WFANON4_TEXT.html

⁵⁸ Johannes Wolf, “Ein Breslauer Mensuraltraktat des 15. Jahrhunderts,” *Archiv für Musikwissenschaft* 1 (1918–19): 331–45.

As in *De musica mensurata*, this author lists the semifusiel and semifusiel semi as related note values, and here both are once again equipollent with the semiminim. In both of these treatises, the descriptions of these new note values state that the hooks on their graphemes are what distinguish them from the semiminim itself. There is one more composite note value, shaped similarly to the semifusiel semi but proclaimed to be a type of semibreve. Wolf's reproduction of Wrocław IV.Q.16 does not reproduce these graphemes; the ones included below are approximated from the TML database:

“For instance, one is named semifusiel and is formed so: , and is worth the same as a semiminim in minor prolation. The following note-form of this series is named fusiel and is a sign of major prolation whenever it is set down, because it is never set down except in major prolation and it signifies nothing more in major prolation than a minim in minor ... Another is defined as the value of semibreve according to common proprieties and is formed so: . Another is called semifusiel semi and is formed so:  ... Also, the semifusiel semi and semifusiel have hooks. The reason is that they are equipollent with semiminims, but distinguish between prolations, as is evident in mixed song.”⁵⁹

Durationally, then, these four note values would be arranged in order of longest duration to shortest as follows: the unnamed note value, worth the same as a semibreve; the fusiel, worth a dotted minim; the semifusiel, worth a semiminim; and the semifusiel semi, apparently also equal to a semiminim. In *De musica mensurata* it was clear that the hooks on the latter two graphemes were meant both to represent a halving of the fusiel and a linking

⁵⁹ “Nam aliqua dicitur semifusiel et formatur sic: et valet in tantum sicut semiminima in minori prolacione. Cuius procedens dicitur fusiel, et est cognicio maioris prolacionis, ubi ponitur, quia nullibi ponitur nisi in maiori prolacione et nichil amplius significat in maiore prolacione quam minima in minori ... Alia denominatur valor semibrevis secundum communes proprietates et formatur sic. Alia vocatur semifusiel semi et formatur sic: ... Item semifusiel semi et semifusiel habent vncos. Racio, quia equipollent semiminimis, sed diuersificant prolacionem, ut patet in cantibus mixtis.”

of these units to the semiminim visually and durationally. But here, it seems that the hooks on the semifusiel and semifusiel semi are meant solely to identify them as equipollent with the semiminim, and distinguish them in different mensural contexts. The hooks on the unnamed note value are unexplained, though it may be possible that, like the fusiel and the two smaller note values, this unit is also meant to distinguish itself from a ‘normal’ semibreve in instances of polymensuralism.

One interesting possibility, though unprovable, is that the flags add value to the base unit of the fusiel, such that instead of the fusiel being worth a dotted minim, the flags increase the value of the grapheme to that of two minims, or an imperfect semibreve; if so, then it could be used to counter a perfect semibreve used in a different prolation, or like coloration to temporarily shift the accent in a melodic line. However, in this and the other two closely related treatises, *De musica mensurata* and the *Tractatulus de cantu mensurali seu figurativo musice artis*, flags or hooks always reduce the base note’s value, so this hypothesis is tentative at best. Still, the presence of these proportional note values in these three central European treatises hints at the influx of both French and Italian theories into the region.

V.3.10: Giorgio Anselmi Parmensis, De musica (Milan H.233.inf)

Giorgio Anselmi, a theorist from Parma, wrote his *De musica* in 1434, yet its only copy dates to the late fifteenth century; it was not only well known to but also heavily annotated by the Italian theorist Franchinus Gaffurius. The treatise is written in the form of a dialogue between Anselmi and his companion, Pietro dei Rossi, which takes place over the course of three days. On the third day, Anselmi and Pietro discuss the modes and rhythms

of mensural music. In this portion of the dialogue, Anselmi describes two separate notational systems: one contains both simple and composite note shapes for a wide variety of durations, and the other is a new system presenting eighteen new terms and graphemes for mensural note values.

Anselmi's first system is important to the current discussion because it is the last major presentation of arithmetic composite figures in the same vein as those found in the *Tractatus figurarum* and the *Tractatulus de figuris et temporibus*. Yet not only is Anselmi's math incorrect for a number of the arithmetically composed graphemes, this section also contains several proportional graphemes, making this the first (and last) system to present both types of note shapes within the same organizational system. While the text of *De musica* provides descriptions for these figures, the graphemes themselves have been drawn only in the margins, and it is unclear whether they are original to the text or added by a later hand, perhaps even by Gaffurius himself; given that several of them diverge from what is described, the latter possibility seems more likely.




The way in which Anselmi constructs these figures is clearly based upon both Italian and French mensural theories. He explicitly uses coloration and the dot of addition, and discusses the concepts of perfection, imperfection, and alteration, yet his entire system of composite graphemes is constructed according to their relationship to a central breve. His approach toward small note values is revealing as well. His first mention of the semiminim is also in relation to a central breve, by which eighteen semiminims can replace a perfect breve according to modern practice. However, he explicitly refers to the semiminim as representing or depicting half a minim; he is the first Italian theorist to portray the

semiminim as a subdivision, although it is also clearly a proportional value here. Despite the specificity of his description for the semiminim, though, he states that there are a variety of available shapes for it, but then neither describes nor transcribes any of them. The possible shapes for the semiminim must be derived from Anselmi's composite note values.

He organizes his ten composites in such a way that successive units are manipulations or alterations of previously defined graphemes. He begins with a dotted perfect semibreve, worth four minims. If a descending stem is added to this grapheme, then the new unit ♩^\cdot is worth five minims; the stem thus represents the minim. But if this descending stem had a flag on the end, ♩^\cdot_f , then the entire unit would be worth half of the same grapheme without the flag – two and a half minims. The flag thus represents the reduction not of half a minim, but half the unit's value; unlike the previous three arithmetic graphemes, this is proportional. Anselmi also states that four of these note values are equal to nine minims, yet that is impossible if each were worth two and a half minims. He has therefore erred in his mathematics, whether by mistaking the value of the flagged grapheme or by adding four of them together incorrectly.

Regardless of how he calculated the 4:9 relationship, the next two proportional graphemes are based upon this ratio. When its grapheme is voided, ♩^\cdot_v , a third of its total value is lost; four of them are equal not to nine minims but to six, equating each with a dotted minim. Since voiding reduces a note value by one third, semi-voiding thus reduces a note value by one sixth. The semivoid version of this grapheme, ♩^\cdot_v , thus creates a most


unusual proportion: four of these semivoid note shapes are equal to seven and a half minims.

The grapheme commonly given for the dragma or fusiel is unnamed in this treatise; here it is another arithmetic value, worth two minims, in which each stem represents the duration of a minim. The rest of the composite figures are based upon this grapheme. Voiding this figure reduces it by one third, in typical fashion. A flag can also be added to the lower stem, but while in the aforementioned group of graphemes that flag signified a division of the note value in half, here it subtracts the value of a semiminim; the flagged double-stemmed  is therefore worth a minim and a half. Anselmi also uses the hollow punctus seen in the *Tractatus figurarum*, *Tractatulus de figuris et temporibus*, and the appendix to Boen's *Ars musicae*. Once again it is equal to the semiminim, and if it is added to the flagged double-stemmed grapheme, it replaces the semiminim duration that was removed by the flag, such that this new complex figure  is worth two minims. Lastly, if the flagged double-stemmed grapheme were to be semivoid, , it too would be worth a minim and a half. Yet in this last case, Anselm gives no explanation for the need for semivacuity or how this semivoid shape could be equal to the full-black version of this grapheme.

Anselm defined the semiminim as being worth half a minim; from these composite figures, we can intuit that the two components that reflect that duration are the hollow punctus and the flag added to the lower stem (which in some cases can also reflect the division of a note in half). Therefore, it seems that the semiminim should be a black flagged grapheme. This grapheme is stated elsewhere to be an imperfect minim, four of which create

sesquitertia with three minims. The last of Anselmi's ten figures appears to be redundant, given that in his system it is the third composite grapheme that could represent the value of a dotted minim. Yet it is possible to interpret it as the result of a black minim being added to a void flagged semiminim. If that is true, then perhaps Anselmi's variety of graphemes for the semiminim includes the black and void flagged shapes and the hollow punctus.

Table 5: Anselm, First System Graphemes

<i>Semiminim</i>	—	—	—	—	—	—	—	—	—	—	<i>Imperfect Minim</i>
0.5	4	5	2.5 or 4:9	4:6	4:7.5	2	1 1/3	1.5	2	1.5	4:3
  									 		

In Anselmi's second system, he is much clearer about the names, durations, and graphemes for the eighteen note values he describes. Again, this is a system that betrays both French and Italian influence. He relates his note values on one hand to the breve but on the other to the minor long, and his organization of note values is much more akin to the Italian divisiones than it is to any interpretation of the French prolaciones yet each of his note values is given a specific, inflexible duration. He begins by listing the names and graphemes for his note values, as shown in the table below, and only then does he describe their relationship with each other. Each of the primary types of note values – the new *grande*, the long, breve, semibreve, and minim – has three possible qualities: major, medium, or minor. The maxima is the largest unit, and semiminim, listed last, can either be major or minor.

The most attention is paid to those note values smaller than the minor long, against which the other note values are measured:

And thus the minor long is represented by: three measures of tempus (in notes, three medium breves), each one of which is equal to the measure of nine minor

semiminims; six major semibreves, each of which is worth four and a half minor semiminims; and by nine medium semibreves, each of which is worth three minor semiminims; and by twelve minor semibreves; and by fifteen major minims; and by eighteen medium [semibreves] and by twenty-one minor [semibreves], and by twenty-four major semiminims, and by twenty-seven minor semiminims.”⁶⁰

Although compared here to the minor long, each of the smaller note values represents a particular fraction of the medium breve, which can be divided equally into anywhere from two to nine parts. The semiminims here can thus either be worth one-eighth or one-ninth of the medium breve.

In addition to this unique hierarchy of note values, Anselmi has also listed his own new graphemes for each value. These are shown below in Table 6. But aside from categorizing these note values according to name, duration, and shape, Anselmi does not inform us as to the rules of their use. If they were meant as replacements for or an attempt to clarify a particular pre-existing notational practice, he does not share which one. Still, it appears that Anselmi saw his system as a much less ambiguous or contextually dependent one; each of his graphemes could be immediately visually recognized, eliminating the need for combinative figures, coloration, or the addition of puncti that had such a presence in his first system.

The problems with relying on Anselm’s treatise to provide us with accurate descriptions of contemporary practice are multiple. With regard to his first system, the note

⁶⁰ “*Sic et longa minor, que trium temporum mensuram representat, per notas tres medie brevis, quarum unaqueque par est mensura semiminimis minoribus novem; per sex maiores semibreves quarum unaqueque par est mensura quattuor semiminimis minoribus et 1/2, et per novem semibreves medias quarum est unaqueque minoribus tribus semiminimis par; et per duodecim semibreves minores; et per 15 minimas maiores, et per medias 18 et per minores 21, et per 24 maiores semiminimas, et per 27 minores semiminimas.*”

Table 6: Anselm, Second System Graphemes

<i>Name</i>	<i>Relationship with the Brevis Medie</i>	<i>Number of Minor Semiminims</i>	<i>Grapheme</i>
Maxime	9	81	
Grandis maioris	8	72	
Grandis medie	7	63	
Grandis minoris	6	54	
Longa maior	5	45	
Longa medie	4	36	
Longa minoris	3	27	
Brevis maioris	2	18	
Brevis medie	1	9	
Brevis minoris	3:2	6	
Semibrevis maioris	2:1	4.5	
Semibrevis medie	3:1	3	
Semibrevis minoris	4:1	2.25	
Minime maioris	5:1	1.8	
Minime medie	6:1	1.5	
Minime minoris	7:1	1.3	
Semiminime maioris	8:1	1.125	
Semiminime minoris	9:1	1	

shapes provided for all of the complicated proportional durations described in the text are likely later additions by a different hand, possibly even Gaffurius himself. Given that some of them clearly stray from their textual descriptions, it is hard to believe that they are Anselm's work. We must, therefore, assume scribal interference and possible corruption or misunderstandings; we cannot take the note shapes at face value. Also, Anselm's logic is, in places, flawed. He attributes multiple possible durations or durational implications to the presence of a twisted tail or flag in several instances and to the use of voiding or semi-voiding in others, and in at least one case his basic math does not compute. His second

system appears to be his own invention (and one that was not adopted by later scribes), and since he does not expound on the reasons for its creation or what he sought to supplant or correct with it, it can tell us little about contemporary issues.

Anselmi's treatise does, however, illuminate the continued evolution of semiminim-family units in the early fifteenth century. He developed lines of thought about small note values found in the earlier *Tractatus figurarum*, *Tractatulus de figuris et temporibus*, and the appendix to Boen's *Ars musice* in Venice 3434 that highlight changes of opinion about the proper correlation between names, durations, and graphic representations. More and more frequently, the term semiminim was linked to the duple proportion or the subdivision of the minim into two equal halves; here for the first time, an Italian theorist references the semiminim worth half a minim. The imperfect minim and voided minim have distinct names and durations, although it is possible that the imperfect minim and semiminim share a grapheme.

Also, like the two earlier Italian treatises, the treatise links the voiding of a grapheme to the duration of the semiminim. This points to a sea change in the development of the semiminim that occurred after, and perhaps because of, the attempts to notate proportional rhythms through composite note shapes became popular. As the desire to accurately notate very specific proportional and non-mensural durations grew, as is reflected in these combinative note shapes, the Italian notion of the semiminim as a proportion capable of producing different durations conflated with the French conception of coloration as a means of making the same proportions. In all three of these Italian treatises, the semiminim could

be drawn using void flagged or void minim figures, signalling the heights to which French concepts were being incorporated into Italian practice.⁶¹

V.3.11: Antonius de Leno?, Regulae de contrapunto (Venice Lat.Z.336)

The last of the eleven treatises to be discussed in this chapter was written at some point in the first half of the fifteenth century. A treatise in the Italian vernacular, it might have been written by one Antonius de Leno, a musician from Brescia to whom the musical examples in the treatise can be attributed. It is unclear whether the text also belongs to him, but as de Leno's entry in *New Grove* points out, the notation described in this treatise matches that used in the manuscript Bologna 2216, parts of which may stem from de Leno's home town of Brescia.⁶² If de Leno was not the author, then at the very least, there was a notational style that might have originated in or was particularly well known in Brescia that was familiar to de Leno, the author of this treatise, and the scribe of the parts of Bologna 2216.

In his critical edition of the treatise, Albert Seay discusses both de Leno's semiminim units and the proportional graphemes that are created using them, but his assessment of them is incorrect. Seay states that de Leno believes "the semiminim" to be a type of minim in duple proportion, and that he did not believe that "the semiminim is ... a normal value

⁶¹ This particular approach plays out frequently in the practical tradition; examples of using red, void, and red void, even red and red void flagged, figures can be seen in many pieces in the manuscript Mod A, especially *Sumite karissimi, Sol me trafigel cor*, and *Caciando per gustar / Ay cinci ay toppi* by Magister Zacharias and *Une dame requis lautrier* by Frater Johannes Janua.

⁶² F. Alberto Gallo and Andreas Bückner, "Antonius de Leno," *New Grove*, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/01062> (accessed June 27, 2012).

with its own name.”⁶³ Yet de Leno quite clearly describes semiminim-family units with specific durations and graphemes, none of which are types of minims. In fact, de Leno gives one group of these units a specific name: the *crozuda*, a term that, like the Italian semiminim, referred to multiple proportional durations. Crozudas drawn as \blacklozenge^p could be in 2:1, 3:2 or 4:3 proportion with the minim, while those with left-flagged figure \blacklozenge^q seen in the *Notitia del valore* and elsewhere were the sesquitertia unit.⁶⁴ The unnamed voided minim creates the *dupla superbiciens* proportion, or 8:3.

De Leno was, as Seay stated, a bit confused about the nature of proportions. The normal understanding of a proportion is that a number of like things are compared to another number of different, also like, things. Thus, for example, four crozudas could replace three minims. Yet de Leno claims that a group of four unlike note values could also create sesquitertia with three minims: in this case, two minims and two semiminims.⁶⁵ Reduced to their component parts, the proportional group would be comprised of six semiminims total, thus actually creating a duple proportion with the three minims in




⁶³ Albert Seay, *Antonio de Leno: Regulae De Contrapunto* (Colorado Springs: Colorado College Music Press, 1977), 11.

⁶⁴ This is the earliest use of the word *crozuda* that I have been able thus far to locate; it does reappear in later Italian treatises with a variety of spellings. While the nature of the word’s transmission is as yet unclear to me, it seems obvious that it is related to and perhaps a derivation of the English term *crocheta*, meaning hooked. Perhaps the influx of English musicians surrounding the schismatic Councils also allowed for the transmission of English theory, thus accounting for the arrival of the otherwise peculiarly English term for the semiminim to enter into the Italian vernacular. And vernacular it was; I know of no uses of this word in a non-English treatise written in Latin, but in Italian it seems that the term was more popular. Later on, similar terms found their way into other regional vernaculars; see the conclusions for a discussion of these.




⁶⁵ Seay, *Antonio de Leno*, ii.

question. But apparently de Leno thought that the number of note values in the proportional group, not their sum duration, was what determined the proportion.

This alternative, misleading approach to proportional relationships plays out also in his composite graphemes. While Seay claims that de Leno's combinative or proportional shapes are "typical of the mixed notation found at the end of the fourteenth century," the treatise reveals instead that while similar graphemes are used, they are assigned durations that have heretofore not been encountered, and as such, require closer attention.⁶⁶

It is possible that by the 1440s, when this treatise was written, the use of complex, extra-mensural note shapes was becoming further emancipated from earlier attempts to mathematically link each composite part to its own specific duration; this trend was noted in the previous treatise by Anselmi. While *crozudas* have multiple possible durations, their use in the two complex note shapes does not reflect any sort of consistent or even mathematically possible interpretation. For example, the note value said to be worth one third of a minim is given a grapheme we have seen before; the double-stemmed minim with a flag on the upper stem: . Yet dividing the minim into three equal portions through the use of this kind of extended note shape has not been seen; with every instance of a ternary minim predating this treatise, the note shape used to reflect these subdivided parts has been either  or . Given that the double-stemmed minim in this treatise is worth a dotted minim, the addition of a flag that could represent the loss of half a minim creates a unit worth three-quarters of a minim, not one third.

⁶⁶ Seay, *Antonio de Leno*, iii.

Similarly, if to the base unit of the duple crozuda had been added a descending stem apparently worth either one half of a minim or which signifies a longer lengthening of the duration, the resultant unit would be at least one minim in length. Yet the creation of another heretofore undescribed note value, one worth one quarter of a minim, is created by the combination of two crozudas: . If this is a combinative figure using two duple crozudas, , then the note value makes sense, but if the lower flag is meant at all to represent the sesquitertia crozuda , then the note value is mathematically impossible.

At no time does Leno describe these note shapes as combinative; he mentions certain graphic elements as linked to or reminiscent of the shapes of other note values, but he does not apparently think of the use of these graphic parts as necessarily related to mathematical entities that need to be consistent across the board. The complex note shapes he describes are not arithmetic but proportional.

According to Stoessel, proportional graphemes are of French descent, though adapted by Italian theorists. Yet it is clear that far more than Anselm, Leno draws specifically on Italian mensural theory. If Anselm's main influences, however directly or indirectly, were the *Tractatus* complex of treatises, then Leno's were the *Notitia del valore* and other more Marchettan works of the later fourteenth century.

Despite his reliance on the Italian mensural tradition, though, his treatise betrays numerous foreign influences that demonstrate the creation of what Apel, Seay, and other scholars over the years have termed 'mixed' notation – the combination or conflation of different traditions of mensural notation, especially Murisian and Marchettan styles. De Leno's term, *crozuda*, must be related to the English term *crocheta*. Divisions of the minim

into thirds and quarters had not to this point been seen in Italian-based theories, although the ternary minim was found in English and central European theories, and the subdivision of the semiminor into the minor, effectively dividing the minim into four (or six) smaller parts, had already been seen in Hanboys's *Summa*. More than French-Murisian theory, therefore, perhaps de Leno was influenced by English schools of thought, though a direct line between de Leno and any locus of English theoretical practice remains to be drawn. By the 1440s, then, the more strictly Italian notion of arithmetic note values was dwindling; what was taking its place was an approach to rhythmic notation that combined elements from French, Italian, English, and central European traditions.

V.4: Conclusions

Throughout the later fourteenth and early fifteenth centuries, the quest for greater specificity in rhythmic notation was taken to new heights. Many scholars have pointed to the notational intricacies in compositions such as those found in the manuscripts Mod A, Chantilly, and Turin as representative of the 'ars subtilior' – an era of complicated, more subtle music. Recently, though, scholars such as Anne Stone, Jason Stoessel, and others have begun to dismantle the application of the term 'more subtle art' to a specific musical epoch, since the complicated techniques in question are not contained within the chronological boundaries often assigned to the ars subtilior. Instead, each of the complex notational and theoretical practices has its own life span, some of which start decades before the purported ars subtilior and some of which end centuries later. What the decades during the papal schism (1378-1417) show, then, is not a self-contained bubble of new techniques that can be



called an epoch, but an overlapping of a multitude of ideas, some nascent, some developing out of the prior decades of innovation. In short, while this time period is in many ways ‘more subtle’ than what came before, so were many other time periods throughout the fourteenth and fifteenth centuries – and beyond.

I therefore follow the lead of Anne Stone, Jason Stoessel, and others, viewing the innovations in use during this time as extensions of the same desire for clarity and precision that permeated the entire fourteenth century, although their conflation. Polymensuralism, diminution, and augmentation required, and coloration embodied, the visual distinction of different note values in order to clarify not just their durations but their relationship to the ever-growing list of mensural possibilities. The creation of combinative note shapes permitted a hitherto unavailable level of precision in denoting specific, inflexible note values to which the normal rules of mensural notation did not apply; these extra-mensural note values could not be perfected or imperfected, nor did they affect the durations of surrounding note values.

All of these notational practices, but most importantly the creation of combinative note shapes, shed a great deal of light on evolving conceptions of semiminim-family units. In the late fourteenth century, the semiminim (by whatever name) was no longer an unmusical interloper, as several theorists had claimed. Instead, the author of *Tractatus figurarum* considered it a prime building block and foundational unit of mensural notation. The arguments over the proper naming of such note values had largely waned; the term semiminim had become an almost ubiquitous term throughout continental Europe, while in England, the crocheta was widely used. Leno’s treatise reveals that the latter term was finally

wending its way into continental Europe; in Italian vernacular treatises, it was translated as ‘crozuda.’

With regard to the unit’s duration, these treatises reveal an overwhelming preference for a semiminim that was a duple proportion or binary subdivision: when the semiminim (or its ‘synonym,’ the hollow punctus) was used as an arithmetic element in the creation of new graphemes, it subtracted or added the value of half a minim to the note shape. Other small proportional note values, members of the semiminim family such as imperfect minims/additae or voided minims, were also used, and in those cases, they contributed a different proportional value: 4:3, or 3:2, and so forth. The purported anomaly that the *Tractatus figurarum* represented in Chapters II and III with regard to its use of ‘French’ names for semiminim-family units is actually representative of a shift in the Italian conception of the semiminim, such that that term begins to be linked more and more exclusively to the duple proportion. The other Italian treatises I explored in this chapter that demonstrate significant French influence also follow this pattern.

Just as the term semiminim was being more connected to the duple relationship with the minim, it was also becoming more graphically specific. The majority of semiminim shapes were drawn with a flagged stem, like these: . This flag or hook, added to the stem of a composite note value, was what signalled the change in duration by half a minim. In some cases, notably in the *Tractatus* complex, the semiminim was not merely flagged but also void, like here: ; in those cases, the composite units were semivoid. Anselm’s treatise also uses void and semivoid graphemes, though as was shown above, his descriptions are not always the most helpful. Still, it is clear that over the course

of these eleven treatises, from the 1370s through c. 1440, the duple or binary semiminim began to be linked not just to a flagged figure but to a voided one.

The narrowing down of the definition of the semiminim with regard to these three elements – its name, shape, and duration – reflects not just the entirety of the fourteenth- and early fifteenth-century dialogues about the note value; it also stems directly from the exchange of cultural knowledge that was so prevalent during this time. Interactions between the French and Italian musical worlds was not new, but the relocation of the papacy to Avignon and the later church councils (Constance, 1414-18; and Basel, 1431-35), the founding of and participation by foreigners in a number of universities across all of western and central Europe, and the proliferation of noble courts vying for cultural capital allowed for the exchange of musical ideas on a much higher and more frequent level than ever before.

But even more particularly, the French theories promulgated by Johannes de Muris and ‘Philippe de Vitry’ were considered to be both enlightening and confusing by theorists in other locales. Hence, the body of central European works discussed in this and previous chapters made clear that they were drawing on or recapitulating French theories. Many of the later Italian treatises specifically state that they are attempting to translate or explain Murisian theory for their inexperienced but interested Italian audiences, or are attempting to combine the very best elements of French theory to the Italian system that some of them believed to be lacking. Suffice it to say that the aspects of French theory most exciting to or in need of explanation for the Italian audiences were the organization of the four prolations and coloration. While the prolations had their counterparts in four of the Italian divisiones, it

was the relationships between the note values, most importantly the concepts of perfection, imperfection, and alteration, that required explanation; coloration, as a means of enacting imperfection and which implied the temporary overlay of a different mensuration, went hand in hand with this discussion.

The Italian fascination with coloration ended up having ramifications for the semiminim-family units. As the *Tractatus figurarum*, *Tractatulus de figuris et temporibus*, and Anselmi's treatise show, the Italian conception of the semiminim as a proportional figure combined with the French conception of coloration. Although the French used coloration at the minim level only for sesquialtera, this proportion was created in Italy by the semiminim, as were sesquitertia and duple. As Italians adopted the French use of coloration, they began to apply it to the duple unit, as witnessed first in the *Tractatus figurarum*, where the duple semiminim was a void flagged unit. The void minim, like in French usage, signified sesquialtera, but the sesquitertia unit remained the black flagged figure, likely because the French tradition did not use that particular proportion.

Eventually, by the time of Anselm's treatise in the 1430s and some of the later copies of the *Tractatus figurarum* were being written down, the duple semiminim was also occasionally notated as a void minim figure. Apparently there was no concern that the same grapheme could also denote sesquialtera, for they were well accustomed to the use of the earlier flagged grapheme for more than one proportional relationship. The black flagged shape also remained popular, though as demonstrated in Chapter IV as well as in the non-Italian treatises mentioned here, this grapheme was already linked elsewhere with the concept of a duple or binary semiminim.

The Franco-Italian *mélange* created by the absorption of Murisian theories by interested Italian theorists was in turn reintroduced to the rest of western and central Europe. As I showed earlier, some of the central European treatises used combinative graphemes to denote sesquitertia, although that proportion was not native to their theory, and to mimic the relationships between note values created by Italian polymensuralism. The Italian preference for void semiminim graphemes, particularly unflagged ones, eventually found favor in French areas as well.

In sum, there was a visible movement toward a narrower, more specific definition of the semiminim in the later fourteenth and early fifteenth centuries. In non-Italian areas, the semiminim or *crocheta* was already conceived of as an individual, independent note value worth half a minim and represented visually most frequently through one of the black right-flagged graphemes just shown. In Italy, the conception of the semiminim as a proportion that could have numerous durations and equally numerous graphemes became more narrow as Murisian theory was incorporated. The term semiminim became more and more closely linked to the duple proportion, while other terms such as imperfect minims or *additae* were more frequently used for the other proportional values. Also, while the black right- or left-flagged grapheme was retained for this duple semiminim, the incorporation of void coloration combined with the idea of the semiminim as a proportion, creating void and void flagged graphemes that could also represent the semiminim unit.

This refinement of the conception of the semiminim did not only take place in treatises discussing complex proportional notation. In the next chapter I investigate treatises written between c. 1400 and c. 1440 that did not create new combinative note values. They

reveal the same trend: a movement toward the codification of the semiminim as a binary, independent note value, graphically represented by a black flagged or void shape.

Table 7: Graphemes for Proportional and Arithmetic Note Values in All Copies of *Tractatus Figurarum*

Name	Seminimim	Half a Perfect Breve	[Dragma]	[Void Dragma]	Imperfect Minim	—	—	—	Void Minim
Relationship with the Minim	2:1	2:9	2	3:4	4:3	4:7	4:9	3:2	3:2
Catania				—					
Chicago									
Faenza									
London									
Naples									
Pisa									
Prague M.CIII (1463)			—						
Rome 1377									
Rome 5321									
Seville 1									
Seville 2									
Seville 3									
Siena									
Washington									

CHAPTER VI

The Semiminim in ‘Blended’ Notation

“Ars practice cantus mensurabilis duplex reperitur: ars scilet Italica qua soli Italici usi sunt, et ars Gallica quam omnes, Italicis exceptis, amplexi sunt; dato quod ad presens ipsa etiam utantur Italici, et forsan non pejus aliis, in tantum quod propriam negligunt artem, et Gallicam exaltant ...”

The art or practice of mensural music is discovered to be of two kinds: There is the Italian practice, which at present only the Italians use, and there is the French practice, which all Europeans now embrace except the Italians. Of late, however, even the Italians have taken to using French practice – perhaps no less well than the French – and to such an extent that they are neglecting their own practice and reveling in the French . . .”

✎ Prosdocimo de Beldemandis,
*Tractatus practice de musica mensurabili ad modum italicorum*¹

In the passage quoted above, Italian theorist Prosdocimo de Beldemandis laments the current state of musical affairs. French theory (more specifically, the works attributed to Johannes de Muris) has spread throughout all of Europe, even to Italy, where Italian theorists and composers were succumbing to its influence. Despite having extolled the virtues of Murisian theory himself in his earlier treatises, here Prosdocimo states that he plans to prove once and for all that Italian theory is superior to that of France. However, in so doing, he betrays just how heavily he himself is already indebted to French theory.

¹ http://www.chmtl.indiana.edu/tml/15th/PROTRAP2_TEXT.html; trans. Jay A. Huff, editor, *A Treatise on the Practice of Mensural Music in the Italian Manner* ([Dallas?] American Institute of Musicology, 1972), 11.

In Chapter V, I explored treatises that put forth complicated notational systems involving newly invented graphemes; these eleven works were written between the 1370s and c. 1440. But in the first four decades of the fifteenth century, another nine treatises were written that did not describe those notational practices. Instead, they continued in the same vein as the treatises in Chapters II-IV, exploring more normative notational systems. Some of these systems display localized preferences in substance or grapheme, but more and more frequently the definitions given for the semiminim and other related small note values show the myriad ways that French-Murisian theory was being incorporated into the theoretical traditions across Europe. These treatises, along with those in Chapter V, reveal the movement toward a more blended, amalgamated system of notation across Europe, one that is heavily influenced by French theory but which retains elements of more localized traditions.

In both cases, it is clear that the streamlining of the definition of semiminim-family units was both responsible for and a result of their manipulation in the proportional notation of the later fourteenth century. The treatises that I will discuss in this chapter reveal how, even outside of discussions of proportion, the semiminim's definition was becoming more and more codified, and moreover, by the end of the time period in question, the semiminim itself was being subdivided into smaller note values. In my concluding remarks, I will discuss the creation of these new durations, as well as the ramifications of this current study for our understanding of the practical tradition.

VI.1: The Turn of the Century

The time periods treated in Chapters II-IV and Chapter V overlap; the last third of the fourteenth century was included in Part One to help discern fourteenth-century patterns for semiminim-family units, while in Part Two several treatises from this time period were singled out for extra attention due to their more complicated contents. Nine treatises from Part One were written during this time, yet despite similarities in chronology and provenance to those works in Chapter V, they declined to mention complex proportional graphemes or techniques.

It might be easy to write these treatises off for being old-fashioned or unaware of the contemporaneous trends in proportional notation, but I feel that to do so would be remiss. One of the English treatises (Hanboys's *Summa*) leaps forward in mensural theory by subdividing the semiminim into smaller note values; no other treatise does so until the mid-fifteenth century. Two Italian treatises (*Notitia del valore*, *L'arte biscanto*) have already begun to adopt French practices; the latter may also be the earliest theoretical example of void notation of any provenance. *De semibrevibus caudatis* uses a variety of different note shapes and colors to enact specific durations in a vein similar to what is found in the works in Chapter V. Their conceptions of the semiminim, however, are all still representative of the predominant fourteenth-century patterns that I summarized earlier.

The ten treatises written between the turn of the fifteenth century and c. 1440, when Antonius de Leno's treatise was written, reflect both these patterns discerned in Part One and the refinement of the semiminim and associated note values that is in evidence in Chapter V: the terms semiminim, simpla, or crocheta prevail; the note value is always shown

as a right-flagged or right-angled grapheme; and with one small exception, it is always used in groups of two as a subdivision of or duple proportion with the minim.

VI.2: Early Fifteenth-Century Treatises

To this point, the treatises have been fairly evenly split between French/northern European and Italian origin, with smaller numbers from England and central Europe. In the early fifteenth century, a massive shift in provenance can be seen: not a single one of these twelve treatises is of French, Flemish, or Dutch origin; only one is English; and while there are three Italian treatises, they are all by the same author. The remaining six treatises come from central Europe. Yet almost all display French-Murisian influence, to some degree.

The number of treatises from central Europe can only be attributed to the continued reliance on French theoretical works as curricula in the universities as well as a graft onto local theoretical traditions. In fact, it is possible that some of the later German treatises could be the work of students; certainly two of the three Italian treatises by Prosdócimo discussed in this section were composed while he was still a student. The heavy reliance on Murisian theories in these treatises is indicative of university curriculum in Italy and central Europe. One can only assume that Muris would have been taught in France as well, but there are no treatises that mention the semiminim to corroborate such a statement. England was still more isolated; even in the early fifteenth century, it relied more on its own insular tradition than on an influx of continental theory from any origin. Still, this and the other ten treatises demonstrate the same movement toward an amalgamation of Murisian and local styles as evident in Chapter V.

VI.2.1: *De origine et effectu musicae*

Despite there being only one English treatise that mentions the semiminim (or, in this case, the crocheta or simpla), it may contain a glimmer of French influence. The anonymous *De origine et effectu musicae*, written c. 1400, is largely derived from the much earlier *Quatuor principalia*; it mentions the crocheta in its eighth chapter.

In this chapter, the author states that all note values are governed by the number three except the crocheta: “And all [note values] except crochetas, with respect to the number three, can alter each other, and all are arranged [in this way] except the crochetas.”² This description implies that regardless of mensuration, minims could only ever be subdivided into two crochetas, since the crocheta could not be altered.

Interestingly, though, the minim is still presented as the smallest note value in the work’s eighteenth chapter. As Gilbert Reaney suggests, this treatise may be a compilation of student’s notes, which would explain the many misspellings and other errors in copying found in it, and which may also explain why in the later chapter the crocheta is not discussed. Still, such an explicit description of an always-binary crocheta is in direct opposition to English tradition, which held throughout the fourteenth century that the crocheta or simpla could either be a binary or ternary subdivision of the minim. It is possible that this statement reflects a growing preference for the binary crocheta, in which case it is

² “*Que omnes preter crochetam respectu numeri ternarij. possunt adinuicem alterari. et omnia componuntur preter crochetam.*”



http://www.chmtl.indiana.edu/tml/15th/ANOORI_MLBL763.html; Reaney, “The Anonymous Treatise ‘De origine et effectu musicae.’”

also possible that this preference stemmed from the influx of continental (namely, Murisian) theory, in which the relationship between the minim and semiminim was always binary.

VI.2.2: Central European Sources

Five treatises of central European origin were composed in the first four decades of the fifteenth century. Three stem from the areas known today as Austria and Germany and were all written close to the turn of the fifteenth century; the other two, of possible German or Czech origin, might have been written closer to the 1430s.

Tractatus de contrapuncto et de musica mensurabili may be the earliest of them all; it is believed to have been written c. 1400. In this treatise, the semiminim is always worth half a minim. No grapheme is linked to it explicitly in the text, but in both of its manuscript sources (Munich 16208, from the first half of the fifteenth century, and Munich 14809, 1406-17), there is a chart of note values, one of which is the semiminim.³

This chart breaks down the long into breves, semibreves, minims, and semiminims in perfect and imperfect mode, tempus, and prolation; again, regardless of mensuration, the minim is always subdivided into two equal semiminims. In Munich 16208, all of the semiminims are written as , unlike most central European sources. Munich 24809, however, transmits two different graphemes in the chart. The same rounded right-flagged  is used twice, for the semiminims in perfect mode, tempus, and prolation, and imperfect mode, tempus, and prolation. But in either imperfect tempus, major prolation or perfect

³ Because of their size, I have copied these charts in Appendix D; the semiminim graphemes are extracted here as examples.

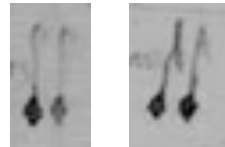
tempus, imperfect prolation – any situation in which the breve is subdivided into six minims – the semiminim grapheme is the angled \blacklozenge more commonly found in central Europe.

Figure 67: *Tractatus de contrapuncto*, Graphemes for the Semiminim

a. Munich 16208



b. Munich 24809



It is possible that these two charts demonstrate the infiltration of the more French/English grapheme \blacklozenge into central Europe, but the other treatises in this section do not uphold this hypothesis. Still, the use of different semiminim graphemes in Munich 24809 may be informative; if this scribe were intentionally aligning the angled grapheme with the two six-minim mensurations and the round flagged grapheme with the other two mensurations, then this may reflect both central European and Italian traditions.

The central European treatises in Chapter V demonstrated that certain composite note forms (the semifusiel and semifusiel semi) were equipollent with the semiminim but had different graphic shapes so that they could be used simultaneously in different prolations but still be easily recognizable on the page. Perhaps the two semiminim graphemes here share that purpose, such that in instances of polymensuralism, they could be used simultaneously. In Italy, though, different graphemes for the semiminim had existed for several decades, although there they represented different durations, which is not the case in this treatise. Still, Italian and French-Italian theory were making their way north into central

Europe, so it is possible that the scribe of Munich 24809 was aware of one or both of these traditions and reflected them in this chart.

Modus cantandi, dating to the first two decades of the fifteenth century, is found in the manuscript known as the Sterzinger Miszellen-Handschrift. It is similar to *Tractatus de contrapuncto* in that the semiminim is always worth half a minim, but in this treatise, the grapheme copied is always the angled form: ♪.⁴

Compendium breve artis musicae was also written early in the century; since its only manuscript source, Munich 24809, was copied between 1406 and 1417, it must have been written at least before 1417 if not earlier. Although as Bernhold Schmid has pointed out, the text contains many similarities to the earlier central European treatises *Tractatus de musica* “Tam post,” *Tractatus de musica mensurabili*, *De musica mensurata* and *Tractatulus de cantu mensurali seu figurativo musice artis*, this particular treatise is less than forthcoming about its smallest note values.⁵ The anonymous author gives a list of note values, beginning with the duplex longa and ending with the semiminim, fusiel, and oblique longs. However, the only durations of note values are given inside a description of perfect and imperfect mensurations, which are not extended to include the semiminim or fusiel. It is therefore unclear how they relate either

⁴ Christian Meyer, ed., *Tractatus de contrapuncto et de musica mensurabili* (Mss. Munich, Staatsbibliothek, clm. 16208 et 24809) ([United States]: American Institute of Musicology, 1995); Lorenz Welker, “Ein anonymes Mensuraltraktat in der Sterzinger Miszellen-Handschrift,” *Archiv für Musikwissenschaft*, 48. Jahrg., H. 4. (1991): 255-281.

⁵ Bernhold Schmid, “Ein Mensuralkompendium aus der Handschrift Clm 24809,” in *Quellen und Studien zur Musiktheorie des Mittelalters*, Band 8, edited by Michael Bernhard, 71-75 (München: C. H. Beck, 1990).

to each other or to the rest of the parts of prolation. Once again the semiminim is drawn with the typical right-angled ♢ common to central European sources.⁶

Figure 68: *Compendium breve artis musicae*, Semiminim Grapheme



The other two central European treatises were written later in the fifteenth century, but dating can only be approximate. In her article “*Ars organisandi* around 1430 and its Terminology,” Elżbieta Witkowska-Zaremba discusses the treatises she calls *Octo principalia de arte organisandi* and *Opusculum de arte organica*, both of which are found in the manuscript Prague M.CIII.⁷ She states that the musical portion of this source (which also contains three of the treatises discussed in Chapter V) probably dates to around 1427-36, but that these two treatises are part of a different section of the manuscript that remains undated.


The treatises with which they share the highest textual similarity are of German and Italian origin and date from the first half of the fifteenth century, thus insinuating that perhaps these treatises might also share similar provenance and dating. *Opusculum* is most closely related to works contained in Munich 7755, which dates to the first half of the fifteenth century; this manuscript also contains the first two sections of *Octo principalia*. The

⁶ While it is possible that this grapheme is meant to be a combinative note value, since this treatise offers no durations for the composite note shapes, I cannot treat this note value as an example of proportional or extra-mensural notation.

⁷ Elżbieta Witkowska-Zaremba, “*Ars organisandi* around 1430 and its Terminology,” in *Quellen und Studien zur Musiktheorie des Mittelalters*, Band 15, edited by Michael Bernhard, 367-424 (München: Bayerische Akademie der Wissenschaften; C. H. Beck, 2001).

next four sections of *Octo principalia* are practically identical to those found in Regensburg Ms. 98 th. 4^o, dating to 1450-80, but since the first two sections likely predate 1450, it is possible that the other four do as well and that the Regensburg copy is a later one.

Unfortunately, the manuscript Prague M.CIII is unavailable to me for first-hand corroboration of graphical evidence, but the texts of the two treatises here in question have been carefully edited and printed in Witkowska-Zaremba's article. In *Octo principalia*, as one might expect, the text is divided up into eight principles of musical notation; the sixth principle is the one that discusses note values, but it does so in a most cursory way. A list of names and corresponding graphemes for thirteen note values are given, but with little definition of their relationship with one another.

Witkowska-Zaremba points out that this treatise, along with the others, demonstrates Italian influence through the presence of void and semivoid note shapes, but the author does not define their durations or their proper use in notation. In her transcription, the semiminim is depicted as the common central European .⁸ Following this list of note shapes is a very brief sentence on mensural relationships, in which the author states: "Note: each double [long] is worth two longs, and each long two breves, and each breve is worth two semibreves, and each semibreve is worth two minims, and each minim is worth two semiminims."⁹

⁸ Witkowska-Zaremba, "*Ars organisandi*," 396.

⁹ "Nota: quelibet duplex valet duas longas; et quelibet longa duas breves; et quelibet brevis valet duas semibreves; et quelibet semibrevis valet duas minims; et quelibet minima valet duas semiminimas."

Witkowska-Zaremba points out that this treatise is discussing instrumental music, using the language of vocal mensural music to describe the notation of music for the organ.

She states that this treatise offers

“an insight into the constructing of tablatural system [sic] of rhythmic values, whose undoubted and obvious starting point was the mensural system linked to black mensural notation. This is most clearly indicated by the set of notational signs (*differencia notarum*) given in *Sextum principale* from the treatise *Octo principalia* ... The set of 'instrumental' mensural signs is the result of reducing the 'vocal' set to six bipartite rhythmical values.”¹⁰

Perhaps at least for some organ music, then, the predominant mensural preference was for binary note values, and ternary rhythms were not as highly favored. In any case, it is clear that at least in some contexts, the semiminim is worth half of the minim, but it is not known whether in other situations a minim could be subdivided into three semiminims.

Opusculum de arte organica also relates to organ music, but Witkowska-Zaremba believes its mensural practices to be more highly developed than those in *Octo principalia* despite it containing atypical mensural practices and terminology.¹¹ Rather, here, the semibreve is called a *nota longa*, and different combinations of these create different prolations. Minor prolation is therefore a set of binary divisions based on the number four, while major prolation based on the number three.






Witkowska-Zaremba points out that the author surprises us with his numbering of semiminims within each of these hierarchies. In minor prolation, there should be as many as sixteen semiminims per *tactus*; comparatively speaking, in major prolation, that number should be twelve. Yet the author allows up to twenty-four semiminims in major prolation, a

¹⁰ Witkowska-Zaremba, “*Ars organisandi*,” 372.

¹¹ Ibid., 374-75.

phenomenon that signifies Italian influence to Witkowska-Zaremba, since in some Italian practical sources twenty-four note values were used in place of minims in duodenaria.

She also states that the use of twenty-four semiminims in major prolation actually implies a divided semiminim, with these new note values being akin to the semifusiel semi that was discussed in prior chapters. However, as I have shown, when a duration for that note value is given, it is *equivalent* to the semiminim, not a subdivision of it, and it is used to distinguish note shapes in cases of polymensuralism. Also, and more importantly, the author does not call the twenty-four note values used in these prolations ‘semiminims;’ they are unnamed. In fact, the author mentions the semiminim only once; immediately following this discussion of prolations, he lists the names and durations for the note values he uses:

- “The forms of each [of these figures] and each of their values:
- the minim, of which two are worth a long in all prolations;
 - the long , of which four are said to be 4 notes and three of three notes [either three or four longs create one *tactus*]
 - the semiminim , of which 4 are worth a long in all prolations;
 - the duplex long , which is worth two longs. The rest for this long is formed as such:   . And it is worth two notes.”¹²

Again, the semibreve is what is known here as a long or a note, so regardless of prolation, four semiminims or two minims constitute one such long. Since the prolations are binary, then the division of major prolation, or three longs, into six creates the minim, and




¹² “Forma earum <scilicet figurarum> et valores earum:

- minima, quarum due valent longam in omni prolacione;
- longa, quarum quatuor dicuntur 4 notarum et tres trium notarum;
- semiminima, quarum 4 valent longam in omni prolacione;
- longa duplex, que valet duas longas. Ista <scilicet longa> cum pausa sic formatur. <Et> valet duplicem notam.”

http://www.chmtl.indiana.edu/tml/15th/ANOODAO_TEXT.html


into twelve the semiminim. But nothing smaller than the semiminim is named, nor is it graphically distinguished. I caution, here as elsewhere, against applying terms borrowed from other treatises when they are not explicitly offered in the given text itself; as I have shown, these terms not only had multiple definitions but carried philosophical and notational baggage that may not translate to a different text. In this instance, at least, Witkowska-Zaremba's use of semifusiel semi is a misreading of sources that do explain the term.

These five central European sources show us several things. The previous generation's flexibility toward the subdivision of the minim seems to have disappeared; in all cases, the semiminim is described as being worth half of a minim. Even in those treatises that only discuss certain types of mensural schemes, namely the latter two organ treatises, the overwhelming preference is for binary organization.

While three of the treatises exclusively use the more traditional right-angled , one, *Opusculum de arte organica*, apparently uses the rounder right-flagged , and as I showed earlier, *Tractatus de contrapuncto et de musica mensurabili* varies in that one of its sources uses only the right-angled shape while the other uses both graphic options. Lastly, while it is clear that French theory is still a predominant influence in the area, the latter treatises demonstrate Italian influence as well through their use of void and semivoid graphemes. Overall, the trend presented by these treatises is toward a (solely) duple note value that is called semiminim and which has begun to be represented more by the right-flagged  so preferred elsewhere.

VI.2.3: Italian Sources

The last treatises to be discussed here are those representing the Italian developments in theory. Prosdocimo de Beldemandis authored all three between 1404 and 1418. The earliest is his *Expositiones tractatus practice cantus mensurabilis magistri Johannis de Muris*, an annotation of the *Libellus cantus mensurabilis* that he wrote while still a student. The topic representing a large portion of the discussion was, in fact, the semiminim, which is mentioned no less than one hundred and twenty-three times. Since Muris (or the author of the *Libellus*, whom Prosdocimo believed to be Muris) had not listed the semiminim as a part of prolation, but other contemporary theorists believed it should be the sixth part of prolation, Prosdocimo attempted to rationalize whose view was correct. While his ‘conclusions’ are basically that both views are correct, the context of his conversation is enlightening, as is his later explanation of the note value.

The semiminim, to Prosdocimo, was neither perfect nor imperfect, nor could it be altered or perfected through the addition of a *punctus*. However, it could, in groups of two, imperfect a note value larger than the minim, which was also neither perfect nor imperfect. While the duration for the semiminim is not explicitly stated anywhere in the treatise, this description implies that the semiminim was a duple proportion, such that two were equal to one minim in duration. The semiminim was described as being shaped like a minim but with a “*cauda retorta*,” a twisted stem, which is the right-flagged  commonly used in Italy and elsewhere; the grapheme for the rest was the same flagged minim rest shown in Chapter IV.

Prosdocimo describes other proportional durations, in particular sesquitertia, but in those cases it is enacted through the use of void, red, or void red minim figures that are

given no separate names. However, he doesn't particularly agree with this practice. Since the minim and semiminim are neither perfect nor imperfect, applying coloration cannot imperfect them or in any way change their duration, so if the minim and/or semiminim are written as red or void graphemes, they then reflect a shift to minor prolation. Lastly, the minim and semiminim replace one another in instances of diminution and augmentation.

The same ideas are put forth again in his 1408 *Tractatus practive cantus mensurabilis*.¹³ Once again, no explicit statement is made about the duration of the semiminim, but two semiminims are able to imperfect a semibreve, thus reinforcing the idea of a semiminim in a binary relationship with the minim. The notion of red or void minims and semiminims changing prolation is reiterated, as is their replacing each other in instances of augmentation or diminution. The semiminim is again drawn as a right-flagged ♩ , and its rest is the similarly flagged ♭ .

His last treatise, the *Tractatus practive cantus mensurabilis ad modum Ytalicorum*, is the most interesting for the present discussion. It has been dated to 1414 by Jan Herlinger, though the explicit states 1412, and is referred to as the last major treatise discussing Italian Trecento-style mensural theory.¹⁴ Clearly, Prosdocimo's other treatises reflect his grounding in French theory, since he was thoroughly acquainted as a student with the works of Muris. In his opening statements in this treatise, as I quoted above, he remarks that even the Italians had adopted French practice to the exclusion of their own. Because of this, he says, he

¹³ Coussemaker labeled this treatise *Tractatus practive de musica mensurabili*.

¹⁴ Jan Herlinger, "Prosdocimus de Beldemandis," *New Grove*, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/22430> (accessed July 6, 2012).

reinvestigated the Italian mensural tradition and found it in fact to be superior to the French, and therefore he has written this treatise in order to prove that very opinion.

He starts immediately with a presentation of the mensural note values at use; with regard to the semiminim, his explanation is worth citing in full:

“The sixth and last is called the semiminim, and it is written in two ways, first like a minim except that a flag with no upward hook is appended to the stem, thus: ♪. Semiminims of this sort are sung in duple proportion to minims, e.g., two of these semiminims to one minim. The second way is also like a minim, except that a flag with an upward hook is appended to the stem, thus: ♪̣. Semiminims of this sort are sung in *sesquialtera* proportion to minims, i.e., three of these semiminims to two minims. And the reason semiminims of the first group have less value than semiminims of the second group is because semiminims of the second group have the flag with the upward hook. By virtue of that hook, which represents their effort to return to the value of a minim, they acquire some additional length, and therefore they are made somewhat longer than semiminims of the first group. However, there seems to be no reason why semiminims of the second group are more often sung in *sesquialtera* proportion than in *sesquitercia*, or some other, apart from the authority of the early writers, whom it is not for us to contradict. We should, rather, hold them in respect and esteem for opening up to us the possibilities of mensural music and thereby conferring a great benefit upon us. And this sixth note is named semiminim either in the sense of an incomplete minim (*semiminima*) or because it is sometimes half a minim, as I said above.”¹⁵

In this description we can see Prosdócimo’s French and Italian worlds colliding. He does not specify all of the sources he used for his Italian investigation, though he mentions

¹⁵ “*Et semiminima que duobus modis figurari habet, primo cum cauda retorta sine caude reflexione ad superius, ut hic; et tales semiminime ad minimas in dupla proportionem cantantur, ut gratia exempli due de illis pro una minima. Secundo modo figuratur cum cauda retorta, cum ipsius caude reflexione ad superius, ut hic; et tales semiminime ad minimas in sexquialtera proportionem cantantur, ut gratia exempli tres ipsarum pro duabus minimis, et causa quare semiminime primi ordinis sunt minoris valoris quam semiminime secundi ordinis est hec, quia semiminime secundi ordinis habent reflexionem sue caude ad superius, ex qua reflexione aliquantulum sumunt augmentationem, eo quod per talem reflexionem ad superius ad valorem minimarum reddere conantur, et ideo aliquantulum augmentantur ultra valorem semiminimarum que in dupla proportionem cantantur. Sed causa quare plus cantantur iste semiminime secundi ordinis in sexquialtera proportionem quam in aliqua alia, non videtur esse nisi sola auctoritas veterum. Sed ipsos in bonorem et reverentiam habere debemus, eo quod nobis viam cantandi in cantu mensurato tali apperunt, et nobis tam bonum obtulerunt. Et dicitur talis sexta figura semiminima quasi semiminima, vel quia aliquando est medietas minime ut iam paulo ante habitum est.*”

http://www.chmtl.indiana.edu/tml/15th/PROTRAY_TEXT.html; trans. Huff, 12-13.

Marchetto's *Pomerium*, which has little bearing on the semiminim. It is obvious, though, that he is aware of the Italian predilection for using the semiminim as a proportion and for the graphical distinction between semiminim-family durations. While in the previous two treatises he never explicitly stated that he believed the semiminim to be a proportion, here he does. However, at the very end of this statement, he also calls the semiminim half a minim, something only Anselmi, among Italian theorists to date, has done.

The duple semiminims are given the right-flagged \blacklozenge^{p} now so commonly used, but the particularly Italian \blacklozenge^{p} is now clearly linked to the non-duple proportions, namely sesquialtera. However, these two graphemes were never compared to one another in this way; the graphical distinction made in other treatises was with the direction, not the shape, of the flag. Also unlike all other Italian theorists, he explains that there is a reason for the shape of the flag of the grapheme \blacklozenge^{p} : the extra flourish on the flag represents a lengthening of the semiminim such that that shape is larger than the duple semiminim but still smaller than the minim. This rationalization draws on the types of explanations used in the creation of the composite note shapes discussed in Chapter V, though it is not as mathematically specific as explanations found in *Tractatus figurarum* and so forth. The equivalent shapes for flags are also applied later in the treatise to the rests for the different semiminims. However, with regard to diminution and augmentation, which he discusses later on, he states that the type of semiminim used is always the one that creates the duple proportion.

Prosdocimo is aware of the use of sesquitercia proportions; he says that he sees no reason why the flourished semiminim grapheme should not signify them, but that “the

authority of the early writers” informs us that the semiminims shaped as \blacklozenge^p are to be used for sesquialtera alone.¹⁶ However, no such writers have come to light in this section; instead, the previous generations of Italian theorists examined in Chapters II-V have all offered numerous graphemes for that proportion. Later on, Prosdocimo clarifies that this proportion is created through the simultaneous use of octonaria or duodenaria with another of the divisiones, reflecting a particularly Italian polymensural approach to proportionality that would not necessarily require separate or distinct graphemes.¹⁷

Also interesting is that the last portion of his statement is quite similar to the interpretations of the prefix semi- that I discussed in Chapter III. While he is not so explicit as to give the prefix a definition, he does link the term *semaminima* to the sense of incompleteness, and implies that semiminim is therefore akin to the idea of halving the minim. What is fascinating about this implication is that the only Italian treatise to have discussed the meaning of the prefix semi- was the late fourteenth-century *De musica mensurabili*, in which the author stated that the derivation of the term semiminim came from semus, meaning imperfect. This is the only treatise in which the author used an alternate prefix; both of the others redefined the prefix semi-. Prosdocimo also uses a different prefix, here sema-, to create the term semaminima, which means incomplete. However, it is unlikely that Prosdocimo knew *De musica mensurabili*, since that author specifically stated that the idea

¹⁶ Huff, MSD 29, 13.

¹⁷ In fact, he uses this example as proof of the superiority of Italian notation over the French, because their notation does not inherently allow for mensural combinations that demonstrate sesquitercia; therefore, they require special signs or note shapes to designate something that naturally occurs in Italian music.

of the semiminim as an imperfect value created the sesquitertia proportion for which Prosdocimo claimed the semiminim should not be used.

These three treatises by Prosdocimo reveal that French theory was, in fact, becoming the most predominant influence on and basis for mensural theory across western and central Europe. While in the latter treatise he discussed the semiminim as a proportion, he also specifically called it half a minim, reflecting for the first time the concept of a subdivided minim in Italian theory, and in the two earlier treatises his discussion of the semiminim do not allow for any speculation about whether he felt that the semiminim was a proportion or a subdivision. The right-flagged ♩^{p} was linked specifically to this duple semiminim in all three treatises, while the more ornamented ♩^{p} was given for the sesquialtera proportion. In the earlier two treatises he described, then criticized, the use of red, void, and red void proportional minim and semiminim graphemes, stating that instead they reflected a change in prolation, an idea that will be discussed further in my concluding statements. In short, despite his attempts to rationalize the previous century of Italian mensural theory as better than French practice, it was too late; his own explanations of Italian notational practices were already so imbued with French concepts that they might have further reinforced French theoretical dominance in Italy.

VI.3: Conclusions

The five treatises reviewed in this chapter demonstrate that over the course of the seven decades between the writing of the *Tractatulus de cantu seu figurativo musice artis* and *Tractatus figurarum* around 1370 and the *Regulae de contrapuncto* of Antonius de Leno around

1440, local notational styles were largely subsumed by the massive importation of French mensural theory, especially works linked to the names of Philippe de Vitry and Johannes de Muris. As a result, the semiminim, once a conglomerate of names, note shapes, durations, and substances, was funneled through a series of interpretations and reinterpretations, resulting in an eventual narrowing of its definition.

By the mid-fifteenth century, the semiminim was overwhelmingly called ‘semiminim’ (except in England, where the term *crocheta* never fell out of style), it was more and more consistently drawn with a right-flagged note shape, and it continued to be linked specifically to a duple relationship with the minim. While in Italy the concept of the semiminim as a proportion remained a part of theory even as late as Tinctoris, the treatises by Prosdocimo make it clear that the idea of it as a subdivision of the minim was one that was slowly working its way into the theoretical mindset of Italian theorists. The use of the semiminim or other related semiminim-family units to create other types of proportions was not nearly as popular in theory as it had been only generations before. The *additae* is barely mentioned, if at all, and colored or voided minims and semiminims were not given specific names, nor did their coloration necessarily even affect their duration. It is apparent that after almost one hundred and fifty years of debate, discussion, and development, a united definition of the semiminim was beginning to emerge. In my conclusions, I will discuss briefly the next stages in the semiminim’s theoretical life.

EPILOGUE:


“Nor (what cannot astonish me enough) does there exist anything that was composed more than forty years ago which is deemed, by those who are trained (*eruditi*), to be worthy of the hearing. At this very time, if I may pass over the countless singers who perform most beautifully, there flourish – whether due to the power of some heavenly influence or to a fervor of constant exercise – infinitely many composers such as Joannes Okeghem, Joannes Regis, Anthonius Busnois, Firminus Caron, and Guillermus Faugues, who take pride in having had as teachers (*praeceptores*) in this divine art Joannes Dunstaple, Egidius Binchois, and Guillermus Dufay, [who have] recently passed from life. Almost all the works (*opera*) of all these men are redolent of such sweetness that in my opinion they are to be judged most worthy not only for men and demigods, but even for the immortal gods.”

✠ Johannes Tinctoris, *Liber de arte contrapuncti*, 1477¹

Writing from Naples in late 1477, the theorist Johannes Tinctoris proclaimed (indirectly) that a change had occurred in music some forty years ago. He marks the 1430s as the time in which both composed and performed music had reached unforeseen heights of beauty, yet modern scholarship remains stymied as to whether his words pointed to something specific or a more general atmosphere. Tinctoris lists those composers who, in his opinion, were examples of erudition and musical excellence; his list includes French, Flemish, and English composers, but no Italians.






¹ Rob C. Wegman, Rob C. “Johannes Tinctoris and the ‘New Art,’” *Music and Letters* 84, no. 2 (May 1, 2003): 173.

Over the course of this dissertation, I have used the semiminim (or, as I now believe is more appropriate, I have used semiminim-family units) as a means of investigating the evolution of mensural notation across the fourteenth and early fifteenth centuries. Overwhelmingly, the extant theoretical literature that discusses these small note values demonstrates an ongoing refinement of the definition(s) for the semiminim and other related durations. Localized notational preferences for these note values in Italy gradually succumbed to the continual adoption and adaptation of French theory, namely works associated with Johannes de Muris. By the time of Tinctoris's seachange in the 1430s, the philosophical ideas underlying notation, the language used to describe them, and the graphemes upon the page, were predominantly grounded in the reworking of Murisian theory.


In the ensuing decades, notation continued to develop in new and varied ways. Treatises describing the complex 'ars subtilior' systems discussed in Chapter V were no longer newly composed, though the *Tractatus figurarum* continued to circulate, sparking scribal updates to its complicated note shapes. The new, more narrow definition for the semiminim proper – as a binary note value, but more importantly, as a subdivision of the minim, generally written as  but occasionally void – was stable enough now in theory to allow for the description of even smaller note values.

While Johannes Hanboys described a subdivided semiminim (semiminor) in his late fourteenth-century *Summa*, his system seems to have been based on an intellectual exploration of the possibilities inherent in the Murisian gradus system, and not so much on describing – or even prescribing – such small durations. However, the by now normal

practice of applying diminution and other proportions had opened the door for a subdivided semiminim, since the written semiminim would thus be performed as a note value half its theoretical length. Around the 1440s, Nicasius Weyts listed the *croma* as a binary subdivision of the semiminim; by the end of the century, the new note value was most often called the *fusa*.²

It was not just French practice that took root in other locations; the merger of Murisian theory and regional Italian practices in turn spread back into central and western Europe in a variety of ways. In Chapters IV and V, I demonstrated how some of the central European small note values were designed specifically to handle sesquitertia proportions, something almost exclusively seen in the inherent relationships in the Italian divisiones. But in the practical sources that were copied around the 1430s and 40s, a new, somewhat surprising set of graphemes begin to be used for the semiminim. In black notation, the more common note shape was the ; red ink or voiding was used in French style to enact imperfect mensurations or to imperfect individual note values, along the way creating proportional relationships. The French use of coloration as a proportion and as a means of superimposing other mensural hierarchies combined with the Italian conception of the semiminim as a proportion that could be used in multiple combinations. As a result,  or  were found in Italian copies of treatises such as *Tractatus figurarum*, *Tractatulus de figuris et temporibus*, and Anselmi's *De musica*. But in manuscripts of practical music, scribes began to use not only those void graphemes but even  or . These colored graphemes were not an

² No secure dating for Weyts beyond the mid fifteenth century is known, but his treatise, *Regule*, is found in the late fourteenth-century Faenza 117 and Bologna A 32.

Italian phenomenon; already by the 1430s, the  is used for the semiminim in the French manuscript Cambrai 11.³

My investigation of the semiminim in theoretical literature has uncovered a wealth of options for related small note values. ‘The semiminim’ can no longer act as a pillar by which scholarship can judge issues of provenance or dating, and we can no longer marginalize other related units as anomalies or evidence of improper education. Instead, we must take all of these semiminim-family units into consideration as real and viable options. We must approach each of them as products of particular regional traditions, for in so doing we can understand more about the philosophical and musical backgrounds of the scribes and theorists about whom we often know so very little.

We can now also use this information as a starting point for a reexamination of current scholarship on these theoretical treatises. Several times throughout this dissertation, I have made note of treatises that have needed more critical attention, such as the former *Ars Nova*. This project has brought to light several others that would benefit from closer study from the standpoint of both chronology and provenance: the collection of treatises in the Berkeley manuscript and the anonymous *Compendium totius artis motetorum* are two prime examples. But in the case of any other critical edition or study that has relied on semiminims in this time period to locate treatises in time or place, they too warrant reinvestigation.

Lastly, this project shows that the theoretical literature during the fourteenth and early fifteenth century can continue to shed light on the extant performance repertory in new and unexpected ways. While we can parse out rhythms and figure out the meanings of

³ Digitized on DIAMM: <http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=790>

graphemes with relative ease, even in the trickier pieces of the late fourteenth century, the concepts of terminology and philosophical substance such as I have discussed here could only be discovered in theoretical treatises. Because of that discussion, we can now more easily understand the rhythmic preferences or notational styles found in different locations: the use of ternary crochetas in England, individual semiminims in France, and proportional groups of semiminims in Italy, and the later development of superficially illogical colored semiminims across western Europe. The plethora of less common semiminim-family graphemes and complicated note shapes that are found in manuscript repositories of performed music may not always match up with the graphemes depicted in the theoretical tradition, but these shapes can now be understood as the other side of the same coin – scribal records of the search for the ‘correct’ way to notate ever more specific concepts. It is my hope that this document will add to the vast scholarly literature that connects theory with notation and with performance traditions in order to provide a richer and more contextualized understanding of music in the late medieval and early modern periods.

APPENDICES:

APPENDIX A

The Relationship between Petrus de Sancto Dionysio's *Tractatus de Musica* and *De figuris*

The relationship between these treatises is a complicated one and deserves a closer reading than what the body of this document can accommodate. In a future publication, I plan to discuss these works in much greater detail, but in this appendix I wish to accomplish two goals: to place greater emphasis on *De figuris* as a collection of five distinct and potentially separately authored mini-treatises, and to suggest potential reasons why these treatises were originally linked to the treatise by Petrus de Sancto Dionysio.

About Petrus himself, the most thorough bibliographic information is found in Carla Vivarelli's recent article on the court of Robert of Anjou.¹ Her article tells us that Petrus was an Augustinian monk, perhaps from the abbey of Saint-Denis outside of Paris, who became a member of Robert's chapel in Naples around 1317. His presence in Naples might have introduced French mensural theory to Italian theorists such as Marchetto of Padua, also a member of Robert's court. The following year, Robert's chapel moved to Provence; Vivarelli proposes that Petrus might have stayed in Avignon instead and never returned to Naples.

¹ Carla Vivarelli, "‘Di Una Pretesa Scuola Napoletana’: Sowing the Seeds of the Ars Nova at the Court of Robert of Anjou," *The Journal of Musicology* 24, no. 2 (April 1, 2007): 272–296.

She supposes that he became aware of Muris's *Notitia* in Avignon and wrote his treatise shortly thereafter. We lose track of Petrus between 1318 and 1332, when next he appears in a letter assigning him to a teaching position in Paris; it is the last biographical documentation we have for him.

To this can be added another potential reference to Petrus in Paris. William J. Courtenay's study of the University of Paris shows that a Petrus de Sancto Dionysio was "regent in the faculty of theology" in 1305 and again in May 1330, and that that name is also listed in the *computus* of 1329-30.² Courtenay supposes that these three references might be to the same man; given Vivarelli's citation of the letter appointing our theorist Petrus to a teaching position in Paris specifically because of his "laudable progress in theology," it is possible that Courtenay's and Vivarelli's Petrus de Sancto Dionysio are one and the same.³

The *Tractatus de musica* is based heavily on Johannes de Muris's *Notitia artis musicae* and may also reference the beginning of Jacobus de Liège's *Speculum musicae*. Yet Petrus, instead of revering Muris as an authority as so many later treatises do, critiques many aspects of Muris's theories, in particular his treatment of rests. Because of this close relationship to Muris's work, Ulrich Michels states that Petrus must have written *Tractatus de Musica* "shortly after 1321 in or in the vicinity of Paris, the centre of the Ars nova and the place where Johannes de Muris did his teaching."⁴ If this is true, Petrus must have returned to Paris prior

² William J. Courtenay, *Parisian Scholars in the Early Fourteenth Century: A Social Portrait* (New York: Cambridge University Press, 1999), 201-202, 232.

³ Vivarelli, "Di una pretesa scuola napoletana," 291.

⁴ Ulrich Michels, CSM 17, 39. CSM 17 contains critical editions of Muris's *Notitia* and *Compendium* as well as Petrus's *Tractatus de Musica* and the anonymous *De figuris*; Heinz Ristory's own study of Petrus de Sancto

to 1321, perhaps after leaving Robert's chapel and stopping off in Avignon. He may then have stayed in Paris through the time of his appointment and possibly his death.

The treatise is divided into two halves, a section on theoretical music and one on practical music. It was copied into Chicago 54.1, Siena L.V.30, and Washington LC J6, but the only section found in all three manuscripts is the fourth chapter of the theoretical half; the rest of the theoretical section is found in the Siena and Washington manuscripts, while the entirety of the practical half is found only in Chicago. In each of these manuscripts, portions of another treatise called *De figuris* are copied alongside the *Tractatus de musica*. There are five sections to this treatise; all five are found in the Siena and Washington manuscripts, while only the second and third were copied into Chicago. Complicating the matter further is the fact that Coussemaker, apparently familiar only with the Chicago 54.1 copies, printed *Tractatus de Musica* and *De figuris* as one work by his Anonymous VI; however, he missed the first two chapters copied in the Chicago manuscript and also rearranged the chapters such that those from *De figuris* were inserted before the last chapter of *Tractatus de Musica*, so his copy is both flawed and incomplete. Table 8 below demonstrates the organization of both treatises.

With regard to the attributions to Petrus, they are found only in the two later sources; the Chicago manuscript, the earliest of the three, does not mention him by name. The Siena and Washington copies both name Petrus de Sancto Dionysio in the prologue of

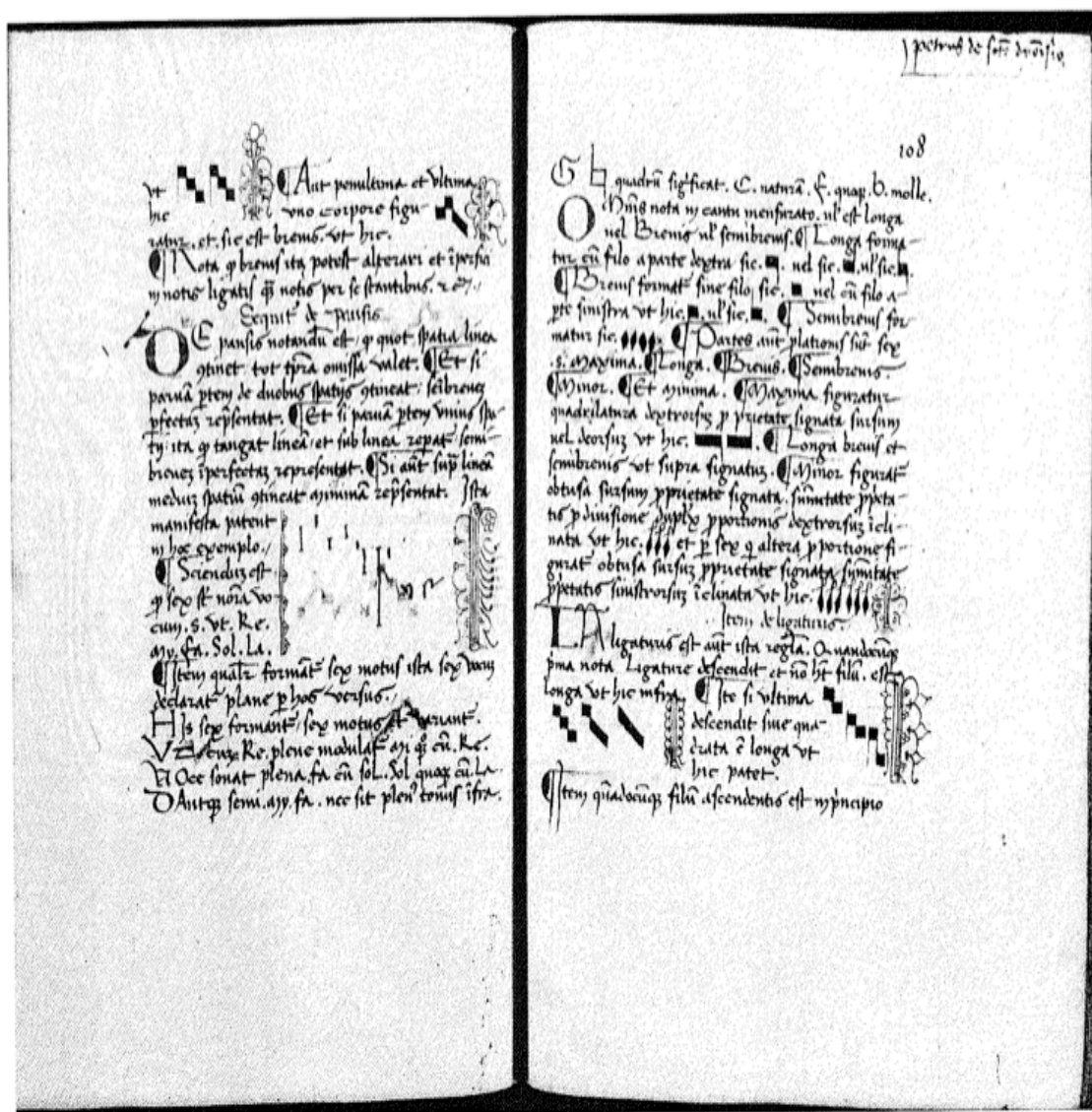
Dionysio is largely based on Michels's edition. See Ristory, *Denkmodelle zur Französischen Mensuraltheorie des 14. Jahrhunderts*. Ottawa, Canada: Institute of Mediaeval Music, 2004.

Table 8: Sources for *Tractatus de Musica* and *De figuris*

<i>Petrus de Sancto Dionysio: Tractatus de Musica and [Anonymous]: De figuris</i>							
<i>Tractatus de musica</i>							
Part I: "Musica Theorica"	Prologue	<i>Incipit Tractatus fratris Petrus de Sancto Dionysio</i>				Siena	Washington
	Ch. I	<i>De sono</i>	(Notitia)			Siena	Washington
	Ch. II	<i>De proportionibus numerorum</i>	(Notitia)			Siena	Washington
	Ch. III	<i>De inventione musicae</i>	(Notitia)			Siena	Washington
	Ch. IV	<i>Quod semitonium</i>	(Notitia)		Chicago	Siena	Washington
Part II: "Musica Practica"	Ch. V	<i>Quid sonus, quid tempus, quid mensurae</i>	(Notitia)		Chicago		
	Ch. VI	<i>De virtute numeri ternarii</i>	(Notitia)	Anon VI ch.1	Chicago		
	Ch. VII	<i>De forma figurarum</i>	(Notitia)	Anon VI ch.2	Chicago		
	Ch. VIII	<i>De nominibus ipsarum figurarum</i>	(Notitia)	Anon VI ch.3	Chicago		
	Ch. IX	<i>De perfectio et imperfectio et differentia unius ad alterum</i>	(Notitia)	Anon VI ch.4	Chicago		
	Ch. X	<i>De pausis</i>		Anon VI ch.5	Chicago		
	Ch. XI	<i>Conclusiones perfectio et imperfectio et alterario</i>	(Notitia)	Anon VI ch.8	Chicago		
<i>De figuris</i>							
	1	<i>De figuris</i>				Siena	Washington
	8	<i>De ligaturis</i>		Anon VI ch.6	Chicago	Siena	Washington
	18	<i>De pausis</i>		Anon VI ch.7	Chicago	Siena	Washington
	23	<<De figuris>>				Siena	Washington
	27	<i>Item de ligaturis</i>				Siena	Washington

Tractatus de Musica, but only the Washington scribe, Johannes Franciscus Praettonus da Papia, names Petrus also as the author of *De figuris*. He does so in two places. In his explicit, Johannes references Petrus's 'ars cantus,' perhaps implying that he thought of the *Tractatus de Musica* and *De figuris* as a complete work by Petrus. He also names Petrus de Sancto Dyonisio once in the top right-hand corner of folio 108, as shown below, but the folio on which this

Figure 69: Washington LC J6, f. 108



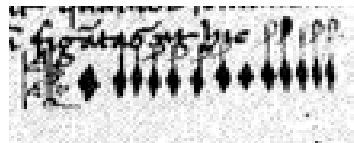
name is found contains parts of the last three sections, so it is unclear whether Johannes meant for the ascription to refer to the entirety of *De figuris* or to one or more of the sections found on this folio.

The linking of *De figuris* to Petrus's authorship based simply on attributions found in the theoretical sources is therefore weak. Despite the copying of the two treatises in conjunction with one another in every extant source, the only explicit attribution to Petrus comes from the latest manuscript source, dating almost one hundred years after the earliest source, Chicago 54.1. If Petrus's treatise and any of the portions of *De figuris* could be shown to be related in content, then of course the attribution would be greatly strengthened; however, I follow Ulrich Michels's lead and will show, through an exploration of both works, that they are quite dissimilar.

With regard to semiminim-family units, Petrus's treatise does not make mention of them, at least by name. The minim is listed as the smallest of the parts of prolation, and no terms or rhythmic definitions for anything smaller than the minim are given. Petrus, like Muris in the *Notitia*, explains the relationships between the parts of prolation according to a 'gradus' system. In Muris's theory, each gradus consisted of the perfect and imperfect values of two adjacent note values, such that the *primus gradus* contained the longissima and the longa, the *secundus gradus* the longa and breve, the *tertius gradus* the breve and semibreve, and the *quartus gradus* as the semibreve and minim. Yet Petrus modifies this system; he breaks down each gradus into five modes, expanding his second, third, and fourth gradii to include three, not two, levels of note values. His fourth gradus therefore contains an otherwise undescribed note value drawn with the typical right-flagged figure shown in Figure IV.18. Given the pattern Petrus sets forth in his gradii, we can reasonably presume that this grapheme is meant to represent a note value smaller than the minim; we cannot call it a semiminim, but it is surely a member of the semiminim family.

In contrast to Petrus's treatment of small note values, *De figuris* provides several different names and durations. In the first section on figures, the semiminim is the note value that creates a sesquitertia proportion with the minim: "*Aliqui ponunt quatuor semiminimas pro tribus minimis diversimode tamen figuratas.*"⁵ These diverse figures for the semiminim are not shown in the Siena manuscript (since the scribe left spaces for the later inscription of graphemes that was never completed), but in the Washington source, the grapheme given is that of the right-flagged figure whose flag continues through its stem. The text clearly states that four semiminims should be placed for three minims and that they should be figured differently, yet this scribe has written a series of notes in which first four, and then five, identically shaped semiminims are grouped together:

Figure 70: 'De figuris,' *De figuris*, Washington LC J6, fol. 106v




It is possible that in whatever original version of this treatise may have existed, two or more sets of 'differently figured' graphemes were given; Ulrich Michels, in his critical edition, assumes this very thing. He provides first four void minims, then four of the Washington right-flagged figures with the flag continuing through the stem of the grapheme. But there is nothing concrete on which to base this speculation, given that the Siena manuscript provides no graphemes and that this section of treatise is not found in any other sources; it appears that Michels chose these specific note shapes for a more general reason,

⁵ http://www.chmtl.indiana.edu/tml/14th/ANODEF_TEXT.html

perhaps simply that such graphemes are used for this proportional note value in other theoretical and/or practical sources. Whatever diverse figures were originally implied by the text of the treatise, we only have the somewhat flawed testimony of the Washington source that the right-flagged figure was a sesquitertia semiminim.

In the fourth section, also on figures, the terminology is confusing. The author states that there are six parts of prolation: maxima, longa, brevis, semibrevis, minor, and minima. This statement brings to mind the early fourteenth-century notions of renaming both the minim and the semiminim in order to overcome any logical roadblocks posed by inappropriate terminology. If this is the intent here, then the minor should be the note value immediately smaller than the semibreve, while the minima should be the smallest permitted note value. But the definition that this author gives for the minor makes it the smallest note value:

“The minor is figured with an obtuse sign above its propriety; the top of its propriety for the division into duple proportion leans to the right, as shown here: , and for the sesquialtera proportion [the minor] is figured with an obtuse sign above its propriety; with the top of its propriety leaning to the left, as here: ”⁶

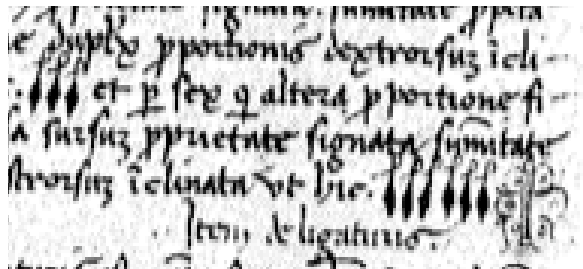
It is possible that the author or scribe of the treatise became confused by the possibly renamed terminology and wrote ‘minor’ here when he or she meant ‘minima,’ but given that there is no definition for the minima, it is hard to say with certainty that this is the case. Still, the text is clear that the minor is a proportional unit with two different durations. It also

⁶ *Minor figuratur obtusa sursum proprietate signata, summitate proprietatis pro divisione <<duplicis>> proportionis dextrorsum inclinata, ut hic, et <<pro sesquialtera>> proportionis figuratur obtusa sursum proprietate signata summitate proprietatis sinistrorsum inclinata, ut hic:*

The Washington source uses the word ‘duplex’ in place of <<duplicis>> and ‘per sex qui altera’ for <<pro sesquialtera>>; Michels, 164.

implies that the minor should have two different graphemes, but again the Siena manuscript provides no note shapes, and the Washington source shows the same grapheme for both the duple and sesquialtera note values:

Figure 71: 'De figuris,' *De figuris*, Washington LC J6, fol. 108



All five sections of the Washington copy of *De figuris* were written by the same hand, and in both ‘De figuris’ sections the scribe has apparently ignored the textual descriptions of the smaller note values and instead used only one grapheme to depict multiple durations. This is a clear-cut case of scribal editing, and this observation informs my speculation on the relationships between these manuscripts, as I explain below. But regardless of stemmatic issues leading to the differences in the Siena and Washington copies, the treatment of small note values in the two ‘De figuris’ sections points toward them both being of Italian origin. They both treat the semiminim or minor as a proportional figure, they both suggest the possibility of multiple graphemes, the former depicts the semiminim as a sesquitercia note value (found only in Italy) and the latter section states that the minor can be used for two different proportional durations. But it is unlikely that the same author wrote these two sections of *De figuris*, given the level of conflict between them. The only similarity in the two

sections is that the small note values are proportions, not subdivisions, but their names, graphemes, and proportional rhythms all differ.

It is also unlikely that Petrus de Sancto Dionysio wrote either of these sections. In both cases, the note values match neither the *Notitia* of Muris nor Petrus's gloss in *Tractatus de Musica*. The first 'De figuris' section lists only four parts of prolation, the long, breve, semibreve, and minim, but then describes both the triplex and duplex longs and adds the sesquitertia semiminim. The second 'De figuris' is even more conflicted; at first this author states that there are only three notes in mensurable song, the long, breve, and semibreve, but then says there are six parts of prolation, namely the aforementioned maxima, long, breve, semibreve, and the confusing minor and minima. These two sections derive at least in part from Murisian theory; the second in particular is reminiscent of the similarly named chapter 'De figuris' in Muris's *Compendium*. But the internal inconsistencies in both sections coupled with the Italianate treatment of the semiminim-family units lead me to believe that these are Italian interpretations of Murisian mensural theory dating after the mid-fourteenth century, more likely 1370 at the earliest.

As for the two sections on ligatures contained in *De figuris*, they neither resemble each other closely nor do they appear to be directly derived from the chapter on ligatures in Muris's *Compendium*.⁷ While the information given in all three of these sources is similar, Muris continuously speaks of the presence or absence of propriety and perfection in ligatures, but neither of the *De figuris* portions mentions these terms. The information is presented in different orders in both of the latter sections and each uses a different term for

⁷ Muris's *Notitia* does not discuss ligatures, and therefore neither does Petrus's *Tractatus de Musica*.

the stem on the ligature: the first uses ‘*tractum*’ while the second uses ‘*filum*.’ It is probable, then, that these two sections are also separately authored.

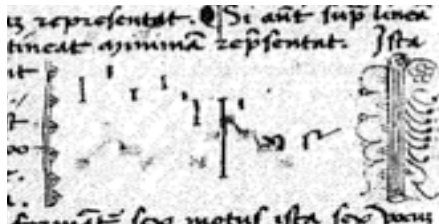
The third section, on rests, requires a closer look. This text states that the duration of the rest depends on the length of the rest grapheme as determined by the number of spaces it crosses; the long crosses two or three spaces depending on its quality, the breve only one space, and the minim and imperfect semibreve each take up half of a space. The unique rest grapheme here, found in the earlier Chicago copy, is that for the perfect semibreve, which is the same length of the breve rest but which is written across a line on the staff such that each half occupies part of a different space.

This system is not at all like either the section on rests in Muris’s *Notitia* or those rests found in the copies of Muris’s *Compendium*. The *Notitia* and several copies of the *Compendium* show rests as being increasingly smaller lines written within the span of one space; this concept irked Petrus, who called attention to the fact that not only was the span of a single space not large enough to accommodate all the different gradations of rests, but that identifying an individual rest without the other rests around it for context was practically impossible. He showed a different system, in which his rests crossed over different numbers of spaces and lines to graphically distinguish their respective durations. Interestingly, in all the copies of this section, his major or perfect semibreve rest is also written as a rest crossing a staff line and entering halfway into the spaces on either side, corresponding to the unique rest grapheme in ‘De pausis.’ Also interesting is the use in both Petrus’s description and ‘De pausis’ of the term *parva* for the semibreve, a term that Muris also uses in the *Notitia* but not with regard to his rests. It is possible, therefore, that ‘De pausis’ might reflect Petrus’s

theories, although it is not probable that Petrus was himself the author; despite some shared terminology and graphemes, the overall system of rests does not completely match, and the textual description of the rests utilize completely different language than does Petrus in the *Tractatus de Musica*.

One last observation about this section should be noted. In the Washington copy of ‘De pausis,’ the scribe has included two unique rests: one flourished to the left, the other flourished to the right, as shown here:

Figure 72: ‘De pausis,’ *De figuris*, Washington LC J6, fol. 107v



The scribe of this section, writing toward the end of the fifteenth century, was clearly aware of the use of smaller note values, and had copied them into the other portions of *De figuris*. Perhaps because he had included his own graphemes for the semiminim and minor in the other sections, he added their respective rests in this table, though without naming or otherwise describing them. But these rests look nothing like the small note values copied into the two ‘De figuris’ sections; in both of the other cases, as shown above, the grapheme given for the semiminim or minor is a right-flagged figure with the flag continuing through the stem of the grapheme. Yet here, one of the rests faces left, and both of them have a different Italianate outward flourish instead. A different scribe might have inserted the table of rests found in this section, but given the identical margin or border decorations that

surround this table and the other mensural examples (which can be seen in the above figures), that notion seems unlikely. Instead, perhaps Johannes copied the rest table just as he did the right-flagged graphemes for the semiminim and minor – verbatim from a missing secondary exemplar.

To summarize, it is now even clearer that the five sections of the treatise known as *De figuris* are largely unrelated to one another and to the *Tractatus de Musica* of Petrus de Sancto Dionysio. The two sections on figures do not relate the same information, and neither do the two sections on ligatures; the section on rests stands alone but also does not match the information found in any of the other four sections. Each of the five sections clearly draws upon French or Murisian theoretical principles, but none is derived directly from either the *Notitia* or the *Compendium*, and with regard to the treatment of smaller note values in the two ‘De figuris’ sections, the author relied specifically on Italian mensural theory.

How, then, did any of these sections come to be linked together and also to Petrus’s treatise? The second and third sections on ligatures and rests were the earliest to be copied, if not written, as they are the only two found in the Chicago manuscript. There, they were actually inserted into Petrus’s treatise as distinct chapters. Whether this was an initiative taken on the part of the Chicago scribe, Frater G. da Anglia, or whether the Petrus treatise was already circulating in tandem with these two mini-treatises is unknown. Michels believes that there must have been an earlier version of the *Tractatus de Musica* that was circulating with the two *De figuris* chapters already inserted into the text; given the seventy-year gap

between Petrus's authorship of *Tractatus* and G. da Anglia's copy into Chicago, this seems likely.

Since Petrus's treatise does not discuss ligatures, it is possible that someone along the way either wrote or copied the mini-treatise on ligatures as an accompaniment to the *Tractatus de Musica*. It is also possible that the section on rests, being the most similar of the five from *De figuris* to Petrus's treatise, was included as a simplification or practical explanation of his discussion. Those two sections, therefore, were in all probability already linked to Petrus by 1391, and G. da Anglia copied them in situ into Chicago.

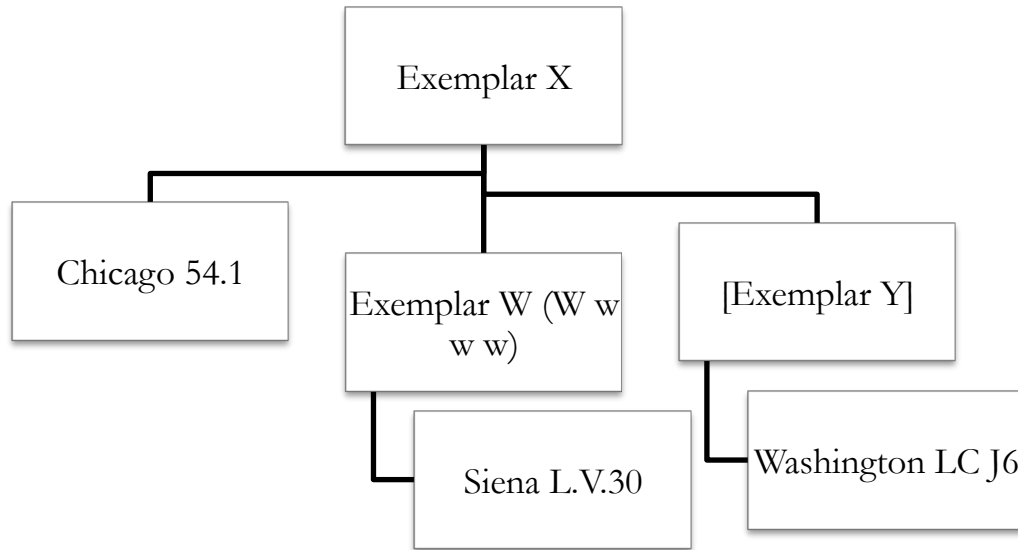
The Siena manuscript is the next earliest source, but it is a flawed copy given its lack of graphemes. Since it contains chapters of the theoretical section not found in Chicago as well as the other three sections of *De figuris*, it is only tangentially connected stemmatically to Chicago; it cannot have been copied either from Chicago or from Chicago's exemplar, unless only in part. Much more likely is that another lost exemplar had been compiled from Chicago or Chicago's original source and from another source that contained the new chapters. This source would have had the prologue ascribing the work to Petrus de Sancto Dionysio, but not only were the sections on ligatures and rests still connected to the *Tractatus*, the other three sections of *De figuris* now were as well. This scribe would have had to have compiled the sections of *De figuris* together, perhaps even from multiple exemplars. If so, then he would have had to restructure his copying order such that the sections on ligatures and rests, already connected to Petrus, were removed from their former place within the section of Petrus's treatise that the later Siena and Washington scribes did not copy and were instead inserted in between the new sections of *De figuris*. It is possible that

the Siena scribe himself was responsible for this compilation, but I find this answer unlikely given the relationship between the Siena and Washington copies.

The Washington copy is at some distance from any original treatise or treatises, given that it dates to almost a century after Chicago. By the late fifteenth century, when Washington scribe Johannes Franciscus Praettonus de Papia copied these treatises, void notation was de rigueur and the Italianate flourished figure shown above was already becoming a thing of the past. It contains, in the same order, the exact same chapters from both *Tractatus de Musica* and *De figuris* as the Siena manuscript, but it could not have been copied directly from the Siena manuscript, given the lack of graphemes there. Therefore it must have been copied from Siena's exemplar, or from another copy made from it. In that case, it is likely that the Siena exemplar(s) for the 'De figuris' sections had already updated or altered the graphemes to those shown in Johannes's copy.

In theory, then, Michels's stemma holds true, though his diagram on p. 42a of CSM 17 accidentally left out the Siena manuscript. However, his argument is largely based on the connection of the sections on ligatures and pauses to Petrus in the Chicago manuscript; the investigation of the sections on figures and the treatment of small note values within them not only supports his view of multiple lost exemplars for all three sources, but mandates at least one, if not two or more, lost exemplars for the Siena and Washington sources, as shown here:

Figure 73: Possible New Stemma for *Tractatus de Musica* and *De figuris*



As for how the other three sections became linked to Petrus and the two sections on ligatures and rests, my hypothesis is as follows. In all the copies of the Petrus/*De figuris* complex, it appears that the scribes or compilers were aware of the heavy reliance on Muris's *Notitia*. No manuscript containing Petrus's treatise also contains a separate copy of the *Notitia*, although some contain portions of the *Libellus* or other Murisian works. Interestingly, no manuscript containing Petrus's treatise contains a copy of the *Compendium*, either. The *Compendium* is a collection of short chapters explaining the basics of mensural notation; after the sections on each of the note values come three chapters on figures, rests, and ligatures. Could it be possible that a later scribe or compiler, looking at the mini-treatises on ligatures and rests in Chicago 54.1, thought them to be related to the *Compendium* – in organization if not in content – and provided them with the 'missing' chapter on figures (either the first or fourth chapter in *De figuris*)?

Perhaps this scribe or compiler had at his or her disposal the other mini-treatises on figures and ligatures and, because of the similarity in their subject matter to the *Compendium*, transcribed them together, regardless of the fact that they contained different or conflicting information. Knowing that Petrus's treatise was a gloss on the *Notitia*, these mini-treatises may have been meant as a sort of gloss on the Italian interpretation of the *Compendium*. This may explain the absence of both the *Notitia* and the *Compendium* from the manuscript sources of Petrus's *Tractatus de Musica*, and it might also explain how these five separate mini-treatises became both linked together and to Petrus.

APPENDIX B

Shields or Triangles in English Treatises

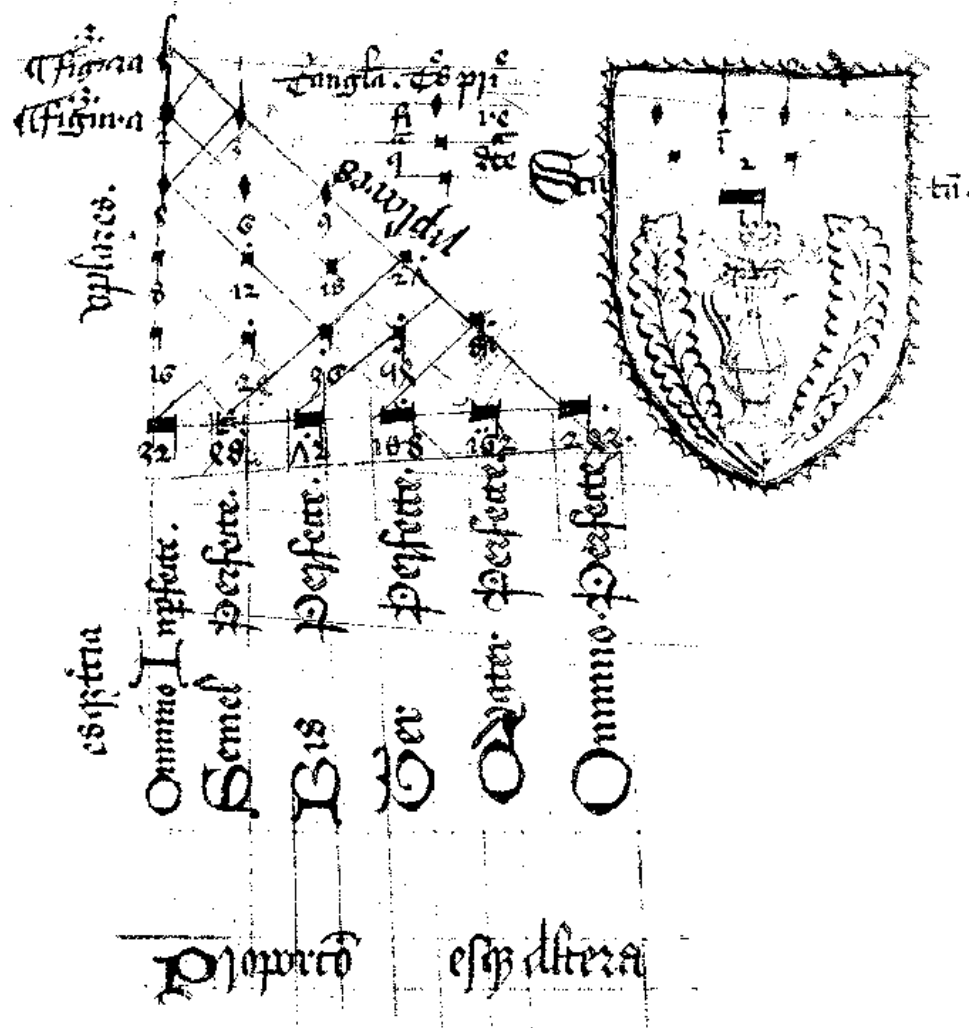


Figure 74: Johannes Torkesey, *Declaratio Trianguli et Scuti*, London 763, f. 89v
http://www.chmtl.indiana.edu/tml/14th/TORKDEC_01GF.gif

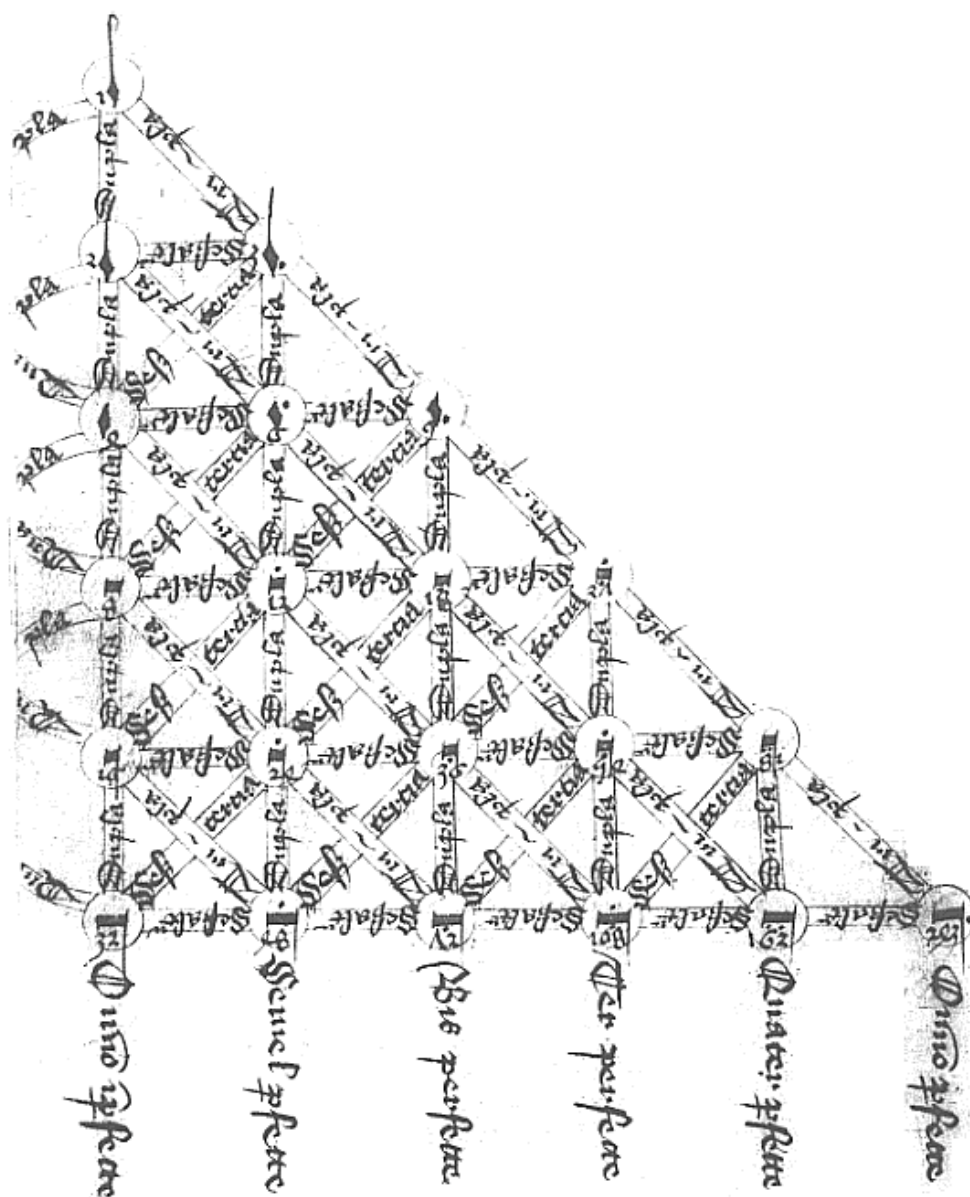


Figure 75: Johannes Torkesey, *Declaratio Trianguli et Scuti*, Rome 1146, fol. 55v
http://www.chmtl.indiana.edu/tml/14th/TORKDEC1_01GF.gif

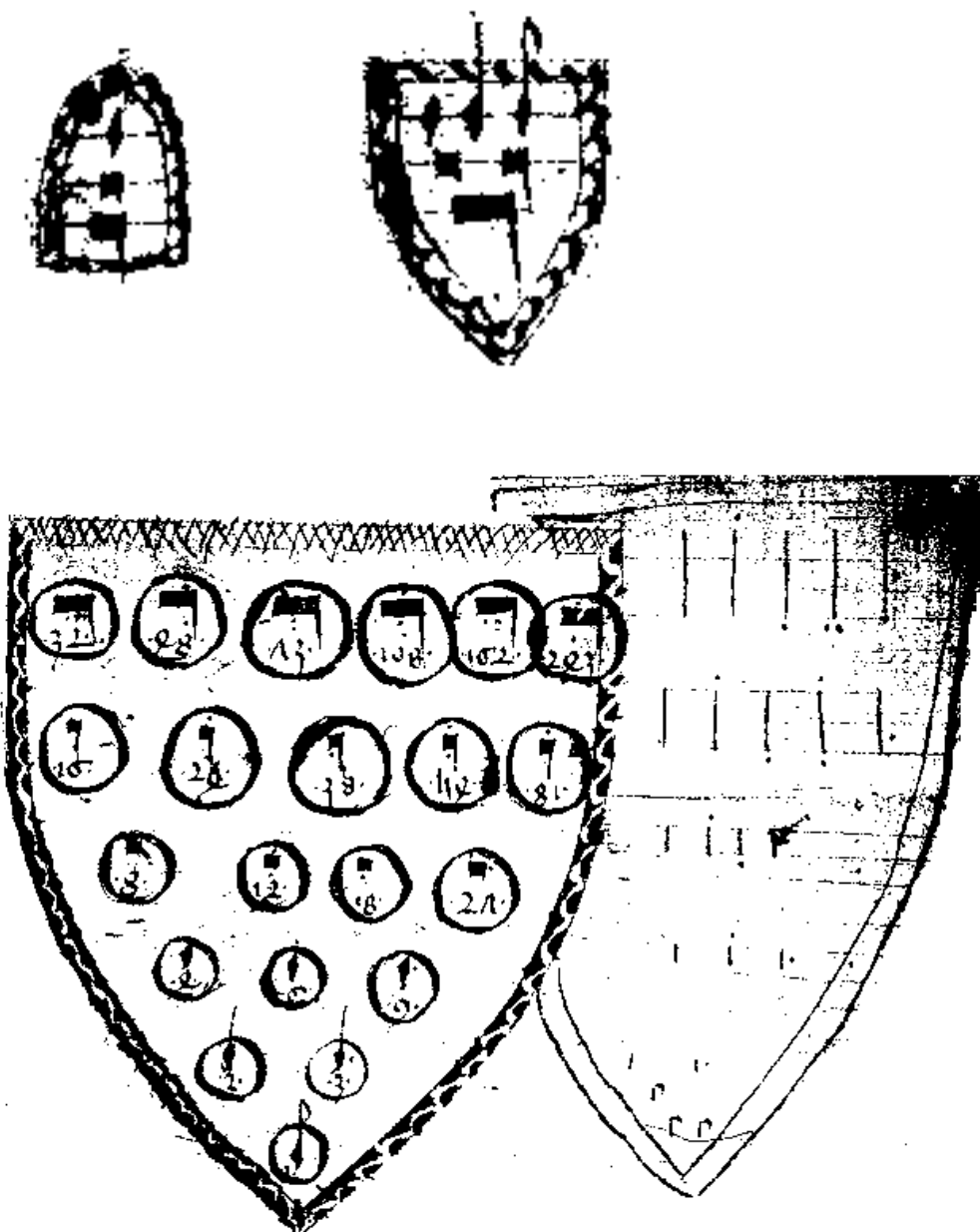
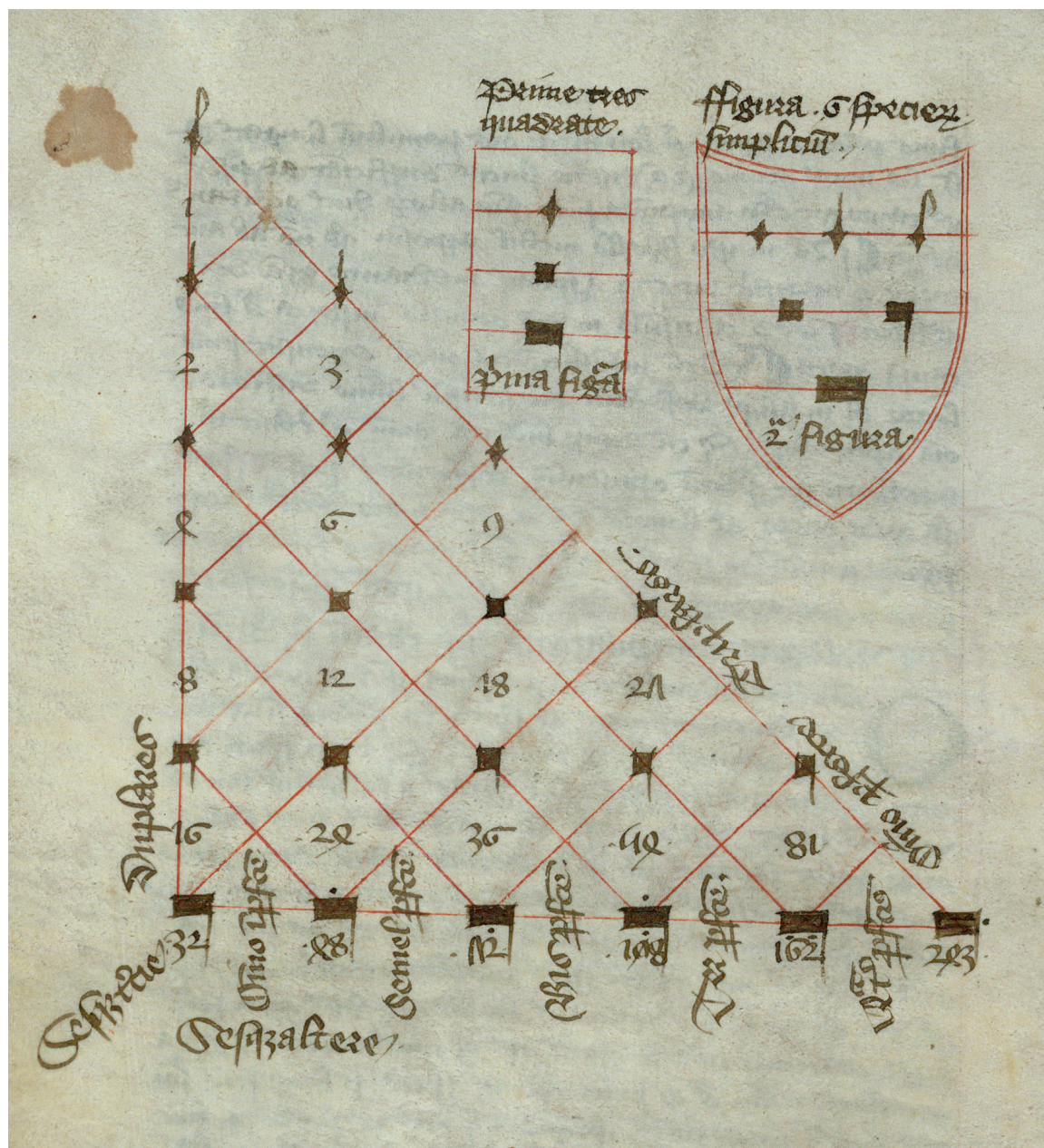
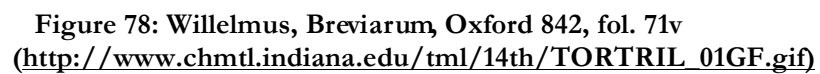


Figure 76: Johannes Torkesey, *Declaratio Trianguli et Scuti*, London 21455, fols. 7v-8
http://www.chmtl.indiana.edu/tml/14th/WILBREV_05GF.gif





APPENDIX C

Johannes Pipudi, *De arte cantus*, and Seville 5.2.25

The manuscript Seville 5.2.25 contains numerous treatises that have been discussed in this dissertation. Many of them, such as the *Tractatus figurarum*, *Tractatus de figuris et temporibus*, and the Murisian *Libellus*, have been well covered in scholarly literature. Yet the treatise called *De arte cantus* has hardly been mentioned. The only article to focus on this work is by Maria del Carmen Gómez, but her transcription and analysis present numerous issues.¹ She apparently transcribed certain words in the treatise incorrectly, creating nonsensical or confusing statements (especially with regard to the semiminim), but more importantly, she overlooked a second copy of the treatise in the same manuscript. Found on folios 111-114, it is labeled “*Pro introductione cognitionis habende de valoribus ...*” in RISM. This second copy is of great value, because the first folio of the copy with which Gómez was familiar was apparently torn in half at some point after the copying, and much of the initial text has been lost (see the images below). A study of the second copy both provides the missing text and clarifies the readings of the problematic statements on semiminim-family units; in so doing, it provides us with tantalizing hints about the author, Johannes Pipudi.

De arte cantus (labeled Ioh. Pipudi in RISM) is found on folios 104v-107 of the Seville manuscript; immediately following it is another treatise, which Gómez has called *Regulae*

¹ Gómez, “*De arte cantus* de Johannes Pipudi, sus *Regulae contrapunctus* y los Apuntes de teoría de un estudiante catalán del siglo XIV,” *Anuario musical* 31/32 (1976/77), 37-49. Pipudi is mentioned again in her more recent publication, *La música medieval en España* (Kassel: Reichenberger, 2001), 274. Higini Anglés also briefly mentions Pipudi but only as an otherwise unknown theorist; see “*De cantu organico: tratado de un autor catalán del siglo XIV.*” *Anuario musical* 13 (1958): 18-24.

contrapunctus (Trad. Pipudi in RISM). In the exposition in *Regulae contrapunctus*, the scribe attributes both it and the preceding treatise to Pipudi. Following that treatise are a set of notes written in the same hand in both Latin and Catalán; they gloss Pipudi's and Muris's ideas and also may refer to Pipudi as this scribe's teacher.

Of Pipudi himself, little is known.² The ascription refers to him as a *magister*, a “*canonicus Sancti Desiderii Avinionensis*” – a canon of the church of Saint Didier in Avignon. This reference tells us where Pipudi worked, but it says nothing else about his life or from where he may have come. The fact that the writer of the two treatises and the set of notes or glosses wrote in Catalán suggests that perhaps both he and his teacher were from Spain, yet Gómez wonders whether the works of Muris, so clearly discussed in Pipudi's treatises, were known in Spain.³ Late fourteenth-century Avignon certainly attracted people of all nationalities. The surname Pipudi seems more Italianate than French, and plenty of Italian musicians were known to have been active in Avignon at this time; however, Pipudi does not appear to be a place-name or a reference to any sort of location. In Spanish, the word ‘pipudo’ is slang for great or awesome, so it is possible that Pipudi is not a surname at all but the Catalán scribe's friendly (or ironic?) nickname for his teacher. Still, that only informs us about the scribe's background, not Pipudi's; without more documentation about Pipudi himself, an Italian or Spanish background can only be a speculation.

² There is no entry for him in *New Grove*, Gómez's and Anglés's articles remain vague as to any speculation about Pipudi's background, and neither he nor the church of Saint Didier is mentioned in Anthony Tommasello's *Music and Ritual at Papal Avignon, 1309-1403*, SIM 75 (Ann Arbor, MI: UMI Research Press, 1983).

³ “*La influencia de Johannes de Muris en los círculos musicales avinioneses se hace patente a través de los tratados de Pipudi, pero no está claro si se extendió a latitudes hispanas.*”

Gómez, *La música medieval en España*, 274.

There is also a paucity of information about the church of Saint-Didier that would help us to understand Pipudi's background or career there. A church dedicated to Saint Didier had been in Avignon since at least 1008 and probably some centuries before. Cardinal Bertrand de Deaux, who died in 1355, left a stipulation in his will that a new church be built; the new church of Saint Didier was consecrated on September 20, 1359. Yet little has been written about the history of this church, and I have not been able to uncover any information about its musical life or populace. However, if the scribe of these treatises and the accompanying glosses was Pipudi's student, then it is possible that he was both a canon at the church and a professor at the university. Josep Rius Serra discussed the influx of Spanish and Catalán students to the university at Avignon in the fourteenth century; perhaps our scribe was one of them.⁴ In that case, Pipudi's treatises and the class notes may be witnesses to late fourteenth-century musical pedagogy at the university.

With regard to *De arte cantus*, Gómez states that it largely follows the Murisian *Libellus* in scope and outlook, and as such dates to the second half of the fourteenth century. She points out Pipudi's inclusion of both the semiminim and the fusa, neither of which she thinks Muris to have known; because of this, Pipudi's extension of perfect and imperfect

⁴ Josep Rius Serra, "Estudiants espanyols a Avinyó al segle XIV," *Analecta Sacra Terraconensis*, 10 (1934): 87-112. Looking at Marcel Fournier's study of the archival materials at the University of Avignon, though, no one named Johannes Pipudi is named in any of the surviving lists of students or teachers. Yet such lists are only available for a very few years at the end of the fourteenth century, and his absence from them does not mean he was not there at a different time. Also complicating the situation is the aforementioned conjecture about the surname Pipudi; if in fact it is a nickname derived from the Spanish 'pipudo,' then any one of the multitude of men named Johannes listed in Fournier's records might be our theorist.

Marcel Fournier and Charles Engel, *Les statuts et privilèges des universités françaises depuis leur fondation jusqu'en 1789* (Paris: L. Larose et Forcel, 1890).

quality to mode, and his discussion of *talea* and *color*, she feels that the treatise dates to the last decades of the century.

Gómez argues that the latter two concepts link Pipudi to Italian theorists familiar with Murisian theory, namely Anonymous V and Prosdócimo de Beldemandis. Yet she was unaware of three things: that she had mistranscribed certain portions of folios 99-99v of the first copy of *De arte cantus* that deal specifically with semiminim-family units, that there was a second copy of this treatise in the Seville manuscript that clarifies those portions, and that the resultant descriptions of semiminim-family units serve as a third link to Muris-influenced Italian music theory.

Gómez provides the following transcription for the descriptions of the semiminim, fusatae, and additas, from folio 99v of Seville 5.2.25:

*“Dicitur item cantatores alliqui ponunt quatuor tales figuras additas appellatas et biscantatas partibus minimis. Item duas tales fusatae etiam ponunt partibus minimis. Item duas tales seminas appellatas vel tales ponunt quia una minima.”*⁵

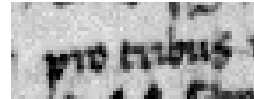
According to this transcription, four additas are sung for parts of the minim, while two fusatae are placed for parts of the minim.⁶ Neither of these descriptions makes much sense, for it is not at all clear what a ‘part’ of a minim means, or what the resultant rhythm or duration for the new note values would be. A closer look at this copy of the treatise and at

⁵ Gómez, “*De arte cantus*,” 40-41.

⁶ This reading of the treatise assumes that ‘biscantatas’ stems from ‘biscantare’ used as a variant form of ‘discantare,’ simply meaning to sing (polyphonic music). However, the scribe of this copy of the treatise copies the word across a line break without any joining hyphen, so it is possible that it is in fact two words, ‘bis cantatas,’ which would mean something like ‘sung twice.’ That option makes little sense, though; *what* would be sung twice: a single addita or the group of additas? Given the confusion, I lean toward the first explanation of the word, and I thank Kerry McCarthy for her discussion of this section with me.

the corresponding portion of the second treatise on folio 111 shows that the word ‘partibus’ has been transcribed incorrectly.

Figure 79: Pipudi, *De arte cantus*, Seville 5.2.25, Close-up of fols. 99v and 111



Rather than ‘*partibus*,’ the correct phrase is actually ‘*pro tribus*.’ This makes much more sense, as the additas are now in a clear sesquitertia relationship with three minims, while each fusata can now be equated to a minim and a half, as in many other treatises discussed in Chapter V.

A comparison of the two portions relevant to semiminim-family units may also help us to understand the relationship between the two copies:

fol. 99v

Dicitur item cantatores aliqui ponunt
 quatuor tales figuras additas $\text{♩} \text{♩} \text{♩} \text{♩}$
 appellatas et biscantatas pro tribus
 minimis. Item duas tales fusatae $\text{♩} \text{♩}$ etiam
 ponunt pro tribus minimis. Item duas
 tales $\text{♩} \text{♩}$ seminas appellatas vel tales $\text{♩} \text{♩}$
 ponunt quia una minima.

fol. 111

dicitur Item cantores aliqui ponunt $\text{♩} \text{♩} \text{♩} \text{♩}$
 tales figuras additas $\text{♩} \text{♩} \text{♩} \text{♩}$ pro tribus
 minimis. Item duas fusas tales $\text{♩} \text{♩}$ ponunt
 pro tribus minimis. Item duas tales $\text{♩} \text{♩}$
 ponunt pro una minima.

The conciseness of the second copy suggests that it may either have been made from the first copy or from another unknown, perhaps lost, exemplar. The descriptive language surrounding the additas is not present, and the phrase “*appellatas et biscantatas*” is not included. It makes more sense for this phrase, being redundant and slightly confusing, to have been excised from the original text than for the first scribe to have added it later. Also,

the last sentence in the second copy is truncated; the name of and the second grapheme for the duple proportion note value are missing. The explanation seems clear: the scribe, writing the sentence through to the first grapheme, copies the note shape and then returns his or her gaze back to the original text. But instead of resuming copy from the proper point, his or her eyes skip ahead to the second grapheme and he or she mistakenly starts from a later point in the sentence, thus accidentally skipping over a rather crucial portion of text.

Copy 1: “Item duas tales $\frac{p}{p}$ $\frac{p}{p}$ seminas appellatas vel tales $\frac{p}{p}$ $\frac{p}{p}$ ponunt quia una minima.”
 “Item duas tales $\frac{p}{p}$ $\frac{p}{p}$ ~~seminas appellatas vel tales $\frac{p}{p}$ $\frac{p}{p}$~~ ponunt quia una minima.”

Copy 2: “Item duas tales $\frac{p}{p}$ $\frac{p}{p}$ ponunt pro una minima.”

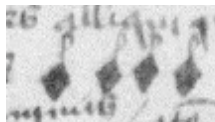
We can assume, then, that the scribe of the second copy was working from an exemplar that contained both a name and a second grapheme for these smaller note values. But we cannot assume either that this exemplar was the first copy, or that it contained the same information as the first copy.¹ Therefore, we cannot call the note values in the second copy ‘seminas’ with any degree of surety; they must remain unnamed.

In both copies of the treatise, then, the term *additas* is used to describe one type of relationship, that of *sesquitertia*, while the term ‘seminas’ is found in the first copy for the two note values that are placed for one *minim*. Evaluating both the treatise’s textual content and the graphemes found in the two copies (as shown in the below examples), it becomes

¹ In fact, one tantalizing hypothesis is that the second copy was made specifically because the first copy had been damaged, but that option necessitates a third, lost copy of the treatise from which the scribe might have obtained the lost text. Also, since there are multiple copies of *Tractatus figurarum* and other portions of treatises in the Seville manuscript, it is not at all necessary to justify the presence of the second copy. Whatever the reason for its inclusion, we are fortunate for its survival given the damage to folios 99-99v.

Figure 80: Pipudi, *De arte cantus*, fol. 99v, Graphemes for Additas and Seminas

a. Additas



b. Seminas

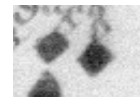


Figure 81: Pipudi, *De arte cantus*, fol. 111, Graphemes for Additas and Unnamed (Seminas)

a. Additas



b. Unnamed (Seminas)



immediately apparent that Pipudi's (and our scribes's) treatment of semiminim-family units matches the late fourteenth-century Italian conception of these smaller note values. As in *Tractatus figurarum* and Anonymous V's *Ars cantus mensurabilis mensurata per modos iuris*, Pipudi distinguishes by name the two small note values that replace one minim (seminas) and the four note values that replace three minims (additas); this has already been shown to be consistent with French theoretical practice and with the works of Italian theorists who were highly influenced by Murisian theory. But like the authors of these two Italian treatises and many others, he also uses the verb 'to place,' here 'ponunt,' to describe the way these note values relate to each other. Two seminas are placed for one minim, four additas are placed for three minims, and so forth, thus linking the semiminim-family units to the Italian notion of proportion and not to the Murisian idea of subdivision.

Furthermore, each of the graphemes used for the semiminim-family units are Italianate; the common right-flagged unit is found everywhere, including Italy, but the shapes with the flag shaped like the numeral 2, with the flag that continues through the stem of the

grapheme, or which is turned to the left-hand side, are all exclusively Italian with the exception of the anomalous Berkeley treatise. While the idea of graphically distinguishing additas from semiminims or seminas is found in non-Italian theory (see Chapter IV for examples of these graphemes), the same right-flagged figure appears to be used for both the additas and seminas in the first copy; this is more in line with Italian practice, in which different durations of semiminim may be given different graphemes for ease of recognition.

Bearing all of these elements in mind, it appears that *De arte cantus* is very closely aligned with Italian theoretical norms, as far as semiminim-family units go. Two points may be drawn from this observation. One is that it seems even more likely, given this new information, that Johannes Pipudi was himself of Italian origin, perhaps receiving his musical education in Italy before moving to Avignon to pursue his canonry. The other is that Avignon has become more and more central in our understanding of how some of these theories were dispersed.

Out of the so-called anomalous treatises that I have brought to light in this dissertation, several have possible ties to Avignon. Pipudi was a canon at Saint-Didier and possibly also a teacher at the university in the late fourteenth century. The proposed author of *Tractatus figurarum*, Philipoctus da Caserta, worked at the papal court in Avignon in the 1370s. The composer Goscalch, whom some believe is the same as Goscalcus, author of the Berkeley treatises, may also have worked in Avignon as a member of the papal court alongside Philipoctus. Unfortunately, not much is known about the anonymous author of *Ars cantus mensurabilis mensurata per modos iuris*, but as an expert in law, perhaps he had some connections to the university there. As early as 1263, doctors of law were teaching at the

university, which remained almost exclusively dedicated to law through the early fifteenth century, though a faculty of arts is mentioned very early in the fourteenth century.² Although Rashdall believed that the arts faculty was likely connected more to grammar schools than to anything else, the witness of our scribe to Pipudi's teaching may hint at a more developed musical pedagogy. The papal court and the university at Avignon may therefore have played a much larger role in the dissemination of Murisian theory to Italy than we previously thought.

² Hastings Rashdall, A. B., Emden, and F. M. Powicke. *The Universities of Europe in the Middle Ages*, Vol. II (London: Oxford University Press, 1958), 174-76.

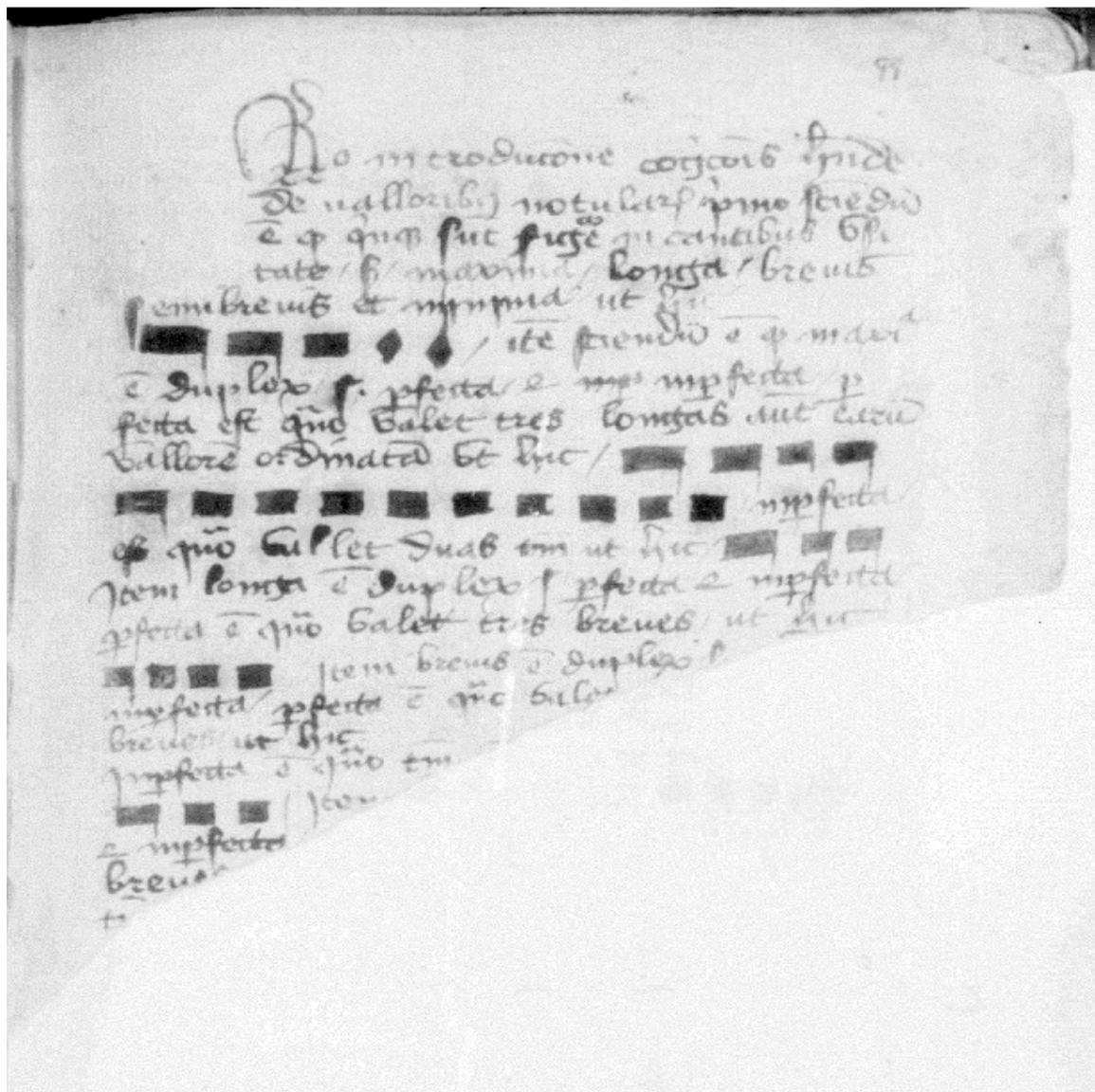






















Figure 82: Pipudi, De arte cantus 1, Seville 5.2.25, fol. 99

Dicitur ite canentes aliqui ponit quatuor
 tres figuras additas     applicatas a bis
 cantatas p^{re}bus iniquis ite duas tres a se
 fusas                

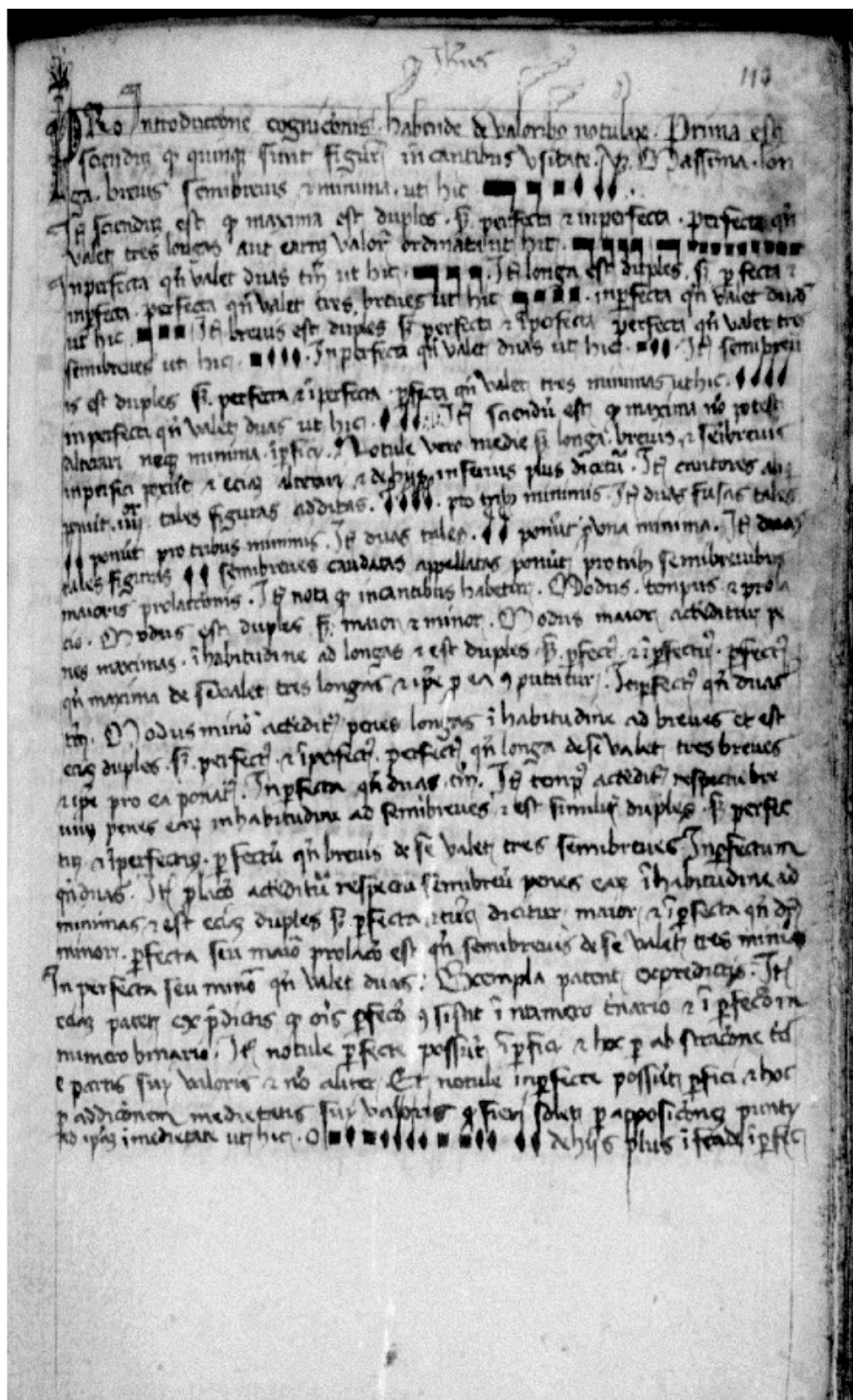


Figure 84: Pipudi, *De arte cantus* 2, Seville 5.2.25, fol. 111

Note Value Charts from Munich 16208 and Munich 24809



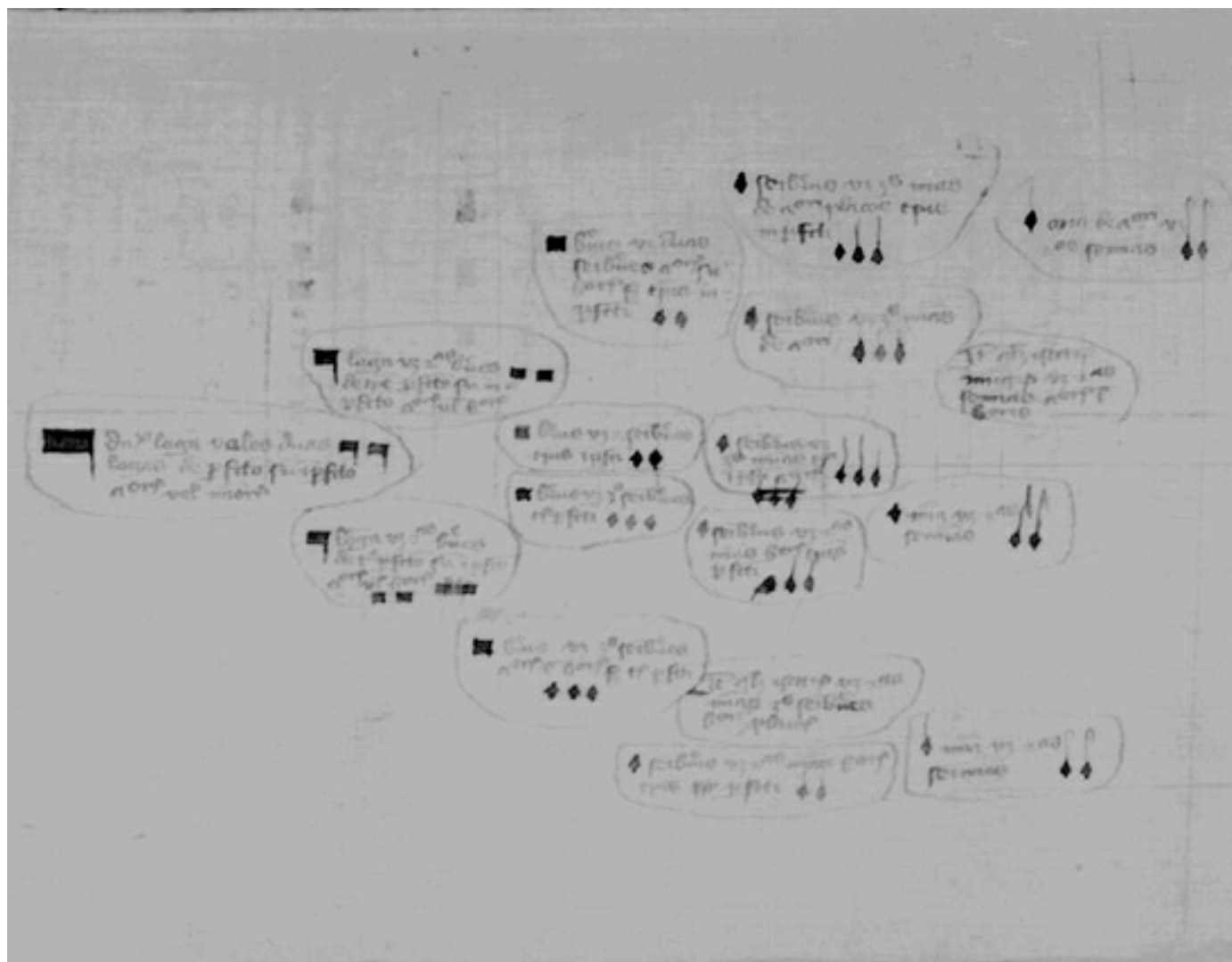


Figure 86: Munich 24809, fol. 135v

WORKS CITED:

Manuscripts & Sigla:

In this section, I provide the abbreviations I use throughout this dissertation on the left, and on the right are given the full bibliographic shelfmark as well as the commonly used RISM abbreviations. I follow Charles Hamm and Michael Scott Cuthbert in providing different, more immediately recognizable abbreviations rather than RISM sigla in my text, and provide below a reverse-index of treatises cited.¹

Musical Sources:

Aosta 15	Aosta, Biblioteca del Seminario Maggiore, Codice 15 I-AO Cod. 15
Apt	Apt, Basilique Sainte-Anne, Trésor 9 F-Apt 9
Arras 983	Arras, Bibliothèque municipale, 983 (766) F-As 983
Barc A	Barcelona, Biblioteca de Catalunya, M 853 E-Bcen 853
Barc C	Barcelona, Biblioteca de Catalunya, M 971 E-Bcen 971
Barc-Gerona	Barcelona, Biblioteca de Catalunya, M 971b / Gerona, Archivo Capitular, MS frag. 33/I E-G
Bologna 2216	Bologna, Biblioteca Universitaria, 2216 I-Bu 2216
Bologna Q 15	Bologna, Civico Museo Bibliografico Musicale, Q 15 I-Bc Q 15
Brussels 758	Brussels, Archives du Royaume, Archives Ecclésiastiques, 758 B-Ba 758

¹ Michael Scott Cuthbert, "Trecento Fragments and Polyphony Beyond the Codex" (PhD diss., Harvard University, 2006), xv-xvi.

Cambrai 6	Cambrai, Bibliothèque Municipale, 6 F-CA 6
Cambrai 11	Cambrai, Bibliothèque Municipale, 11 F-CA 11
Cambrai 1328	Cambrai, Bibliothèque Municipale, B. 1328 F-CA 1328
Cambridge 4435	Cambridge, University Library, Add. 4435 GB-Cu Add. 4435
Canonici 213	Oxford, Bodleian Library, MS Canonici Misc. 213 GB-Ob Can. Misc. 213
Chantilly	Chantilly, Bibliothèque du Musée Condé, 564 F-CH 564
Chicago 654	Chicago, University of Chicago MS 654 US-Cu 654 App
Durham C.I.20	Durham, Cathedral Library, C.I.20 GB-DRc C.I.20
Ivrea	Ivrea, Biblioteca Capitolare 115 I-IVc 115
La Clayette	Paris, Bibliothèque Nationale de France, nouv.acq.fr. 13521 F-Pn n.a.fr. 13521
Las Huelgas	Burgos, Monasterio de Las Huelgas E-BULh
Leiden 2515	Leiden, Bibliotheek der Rijksuniversiteit, Fragment B.P.L. 2515 NL-Lu 2515
Llibre Vermell	Montserrat, Biblioteca del Monasterio 1 E-MO 1
London 12.C.VI	London, British Library, Roya 12.C.VI GB-Lbl Royal 12.C.VI
London 12185	London, Westminster Abbey, 12185 GB-Lwa 12185
London 25031	London, British Library, Add. 25031 (Worcester Fragments) GB-Lbl Add. 25031
London 41667	London, British Library, Add. 41667 (I) (McVeigh fragment) GB-Lbl Add. 41667

Mod A	Modena, Biblioteca Estense e Universitaria α .M.5.25 (Latino 568; olim IV.D.5) I-MO α .M.5.25
Montpellier Codex	Montpellier, Bibliothèque Inter-Universitaire, Section Médecine, H 196 F-Mof H 196
Nuremberg Lat.9	Nuremberg, Stadtbibliothek, fragment lat.9 (olim Centurio V, 61) D-Nst lat.9
Oxford D.20	Oxford, Bodleian Library, Lat.lit.D.20 (Worcester Fragments) GB-Ob Lat.lit.d.20
Pad A	Oxford, Bodleian Library, MS Canonici Lat.Pat. [scriptores ecclesiastici] 229 GB-Ob Can. Lat. Pat. 229 Padua, Biblioteca Universitaria, Ms 658 I-Pu 684 Padua, Biblioteca Universitaria, Ms 1475 I-Pu 1475
Pad C	Padua, Biblioteca Universitaria, Ms 658 I-Pu 658
Paris 67	Paris, Bibliothèque Nationale de France, Coll. De Picardie 67 F-Pn Coll. Picardie 67
Roman de Fauvel	Paris, Bibliothèque Nationale, fonds fr. 146 P-Bn fonds fr. 146
Rossi Codex	Rome, Biblioteca Apostolica Vaticana, Rossi 215 I-Rvat Rossi 215 Ostiglia, Biblioteca musicale Opera Pia "G. Greggiati" Mus. Rari B 35 (olim MS without shelfmark) I-OST
St. Emmeram Codex	Munich, Bayerische Staatsbibliothek, Clm 14274 (olim M.mus.3232a) D-Mbs Clm 14274
Tarragona ss 1	Tarragona, Archivo Histórico Archidiocesano ss 1 E-Tc [1]
Tarragona ss 2	Tarragona, Archivo Histórico Archidiocesano ss 2 E-Tc [2]
Trémoille	Paris, Bibliothèque Nationale d France, MS fonds nouv. acq. fr. 21390 F-SERRANT

Turin	Torino, Biblioteca Nazionale, J.II.9 I-Tn MS J.II.9
Worcester Add.68	Worcester, Cathedral Library, Additional 68, fragment xxxv (Worcester Fragments) GB-WOc Add. 68
Wrocław I.F.411	Wrocław, Biblioteka Uniwersytecka I.F.411 PL-WRu I.F.411
<i>Theoretical Sources:</i>	
Aosta 15	Aosta, Biblioteca del Seminario Maggiore, Codice 15 I-AO Cod. 15 Muris, <i>Libellus</i>
Arezzo 216	Arezzo, Biblioteca Consorziale della Città, 216 I-ARc 216 Muris, <i>Libellus</i>
Bamberg Codex	Bamberg, Staatsbibliothek, Msc.Lit. 115 D-BAs Lit.115 Amerus, <i>Practica artis musicae</i>
Bergamo MAB 21	Bergamo, Biblioteca Civica “Angelo Mai,” MAB 21 (olim Σ.IV.37) I-BGc MAB 21 Gaffurius, <i>Practica musicae</i> ; Muris, <i>Libellus</i> ; Anonymous, <i>Divina auxiliante gratia</i>
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Anonymous	<p><i>De musica antiqua et nova</i> Oxford Digby 90 TML: ANO1DEM (Couss) http://www.chmtl.indiana.edu/tml/14th/ANO1DEM_TEXT.html</p>
Anonymous	<p><i>De musica mensurabili</i> Rome 307 TML: CAMDEM (Couss) http://www.chmtl.indiana.edu/tml/14th/CAMDEM_TEXT.html ANODEM (CSM 13) http://www.chmtl.indiana.edu/tml/14th/ANODEM_TEXT.html</p>

Anonymous	<p><i>De musica mensurata</i> Kremsmünster 312; Munich 24809; (Prague M.CIII); Warsaw 61? TML: ANOBRI (Kellner, "Ein Mensuraltraktat") http://www.chmtl.indiana.edu/tml/15th/ANOBRI_TEXT.html ANOBRI (Rausch, "Mensuraltraktate") http://www.chmtl.indiana.edu/tml/15th/ANOBRI_TEXT.html</p>
Anonymous	<p><i>De origine et effectu musicae</i> London Lansd. 763; Oxford 515 TML: ANOORI (London Lansd. 763) http://www.chmtl.indiana.edu/tml/15th/ANOORI_MLBLE763.html ANOOREF (Reaney, "The Anonymous Treatise:") http://www.chmtl.indiana.edu/tml/15th/ANOOREF_TEXT.html</p>
Anonymous	<p><i>De semibrevibus caudatis</i> Paris 1257 TML: ANOSEM (CSM 13) http://www.chmtl.indiana.edu/tml/14th/ANOSEM_TEXT.html</p>
Anonymous	<p><i>De valore notularum tam veteris</i> Paris 15128 TML: ANO2VAL (Paris 15128) http://www.chmtl.indiana.edu/tml/14th/ANO2VAL_MPBN1512.html</p>
Anonymous	<p><i>Divina auxiliante gratia</i> Bergamo MAB 21; Florence 1119; Florence Plut.29.48; Pisa 606; Rome B.83; Venice Correr 336</p>
Anonymous	<p><i>Liber musicalium</i> Strasbourg 222 TML: VITLIBM (Couss) http://www.chmtl.indiana.edu/tml/14th/VITLIBM_TEXT.html</p>
Anonymous	<p><i>Modus cantandi</i> Sterzinger MH TML: ANOMOD (Welker, "Ein anonymer Mensuraltraktat") http://www.chmtl.indiana.edu/tml/15th/ANOMOD_TEXT.html</p>
Anonymous	<p><i>Musice compilatio</i> Milan M.28.sup TML: ANOMUSC (Gallo, <i>Mensurabilis musicae tractatuli</i>) http://www.chmtl.indiana.edu/tml/14th/ANOMUSC_TEXT.html</p>
Anonymous	<p><i>Notitia del valore</i> Florence Redi 71</p>
Anonymous	<p><i>Octo principalia de arte organisandi</i> Prague M.CIII; (Regensburg 98 th. 4°) TML: ANOOPAO (Witkowska-Zaremba, "Ars organisandi") http://www.chmtl.indiana.edu/tml/15th/ANOOPAO_TEXT.html</p>

- Anonymous *Omni desideranti notitiae (Ars perfecta; Tractatus de Musica; Sub brevissimo compendio)*
Chicago 54.1; Seville 5.2.25; Siena L.V.30
TML: VITARSP (Ars perfecta, Couss)
http://www.chmtl.indiana.edu/tml/14th/VITARSP_TEXT.html
ANOOMDE (Sub brevissimo compendio, Siena L.V.30)
http://www.chmtl.indiana.edu/tml/14th/ANOOMDE_MSBCLV30.html
ANOOMD (Sub brevissimo compendio, CSM 8)
http://www.chmtl.indiana.edu/tml/14th/ANOOMD_TEXT.html
AGANONT (Anglès, “Dos tractats medievals”)
http://www.chmtl.indiana.edu/tml/15th/AGANONT_TEXT.html
- Anonymous *Opusculum de arte organica*
Prague M.CIII
TML: ANOODAO (Witkowska-Zaremba, “Ars organisandi”)
http://www.chmtl.indiana.edu/tml/15th/ANOODAO_TEXT.html
- Anonymous *Regule Magistri Johannes de Muris*
London Lansd. 763
TML: MURREG (London Lansd. 763)
http://www.chmtl.indiana.edu/tml/14th/MURREG_MLBL763.html
- Anonymous *Rubrice Breves*
Bologna A 44; Bologna A 45; Pisa 606; Rome 5322; Saint-Dié 42
TML: ANORUB (Vecchi, “Anonimi Rubrice brevis”)
http://www.chmtl.indiana.edu/tml/14th/ANORUB_TEXT.html
- Anonymous *Tractatulus de cantu mensurali seu figurative musice artis*
Melk 950
TML: ANOTRA (CSM 16)
http://www.chmtl.indiana.edu/tml/14th/ANOTRA_TEXT.html
- Anonymous *Tractatus de contrapuncto et de musica mensurabili*
Munich 16208; Munich 24809
TML: ANOTDCDM (CSM 40)
http://www.chmtl.indiana.edu/tml/15th/ANOTDCDM_TEXT.html
- Anonymous *Tractatulus de figuris et temporibus*
Seville 5.2.25
TML: ANOFIT (Gallo, *Mensurabilis musicae tractatuli*)
http://www.chmtl.indiana.edu/tml/14th/ANOFIT_TEXT.html
- Anonymous *Tractatus de musica* (“Iam post”)
Berlin 1590; Kremsmünster 312; Melk 950; Michaelbeuern 95; Warsaw 61
TML: ANOMIC
http://www.chmtl.indiana.edu/tml/14th/ANOMIC_TEXT.html
- Anonymous *Tractatus de musica mensurabili*
Wrocław IV.Q.16
TML: WFANON4 (Wolf, “Ein Breslauer Mensuraltraktat”)
http://www.chmtl.indiana.edu/tml/15th/WFANON4_TEXT.html

- Anonymous I *Tractatus de figuris sive de notis* (see John of Tewkesbury, *Quatuor Principalia*)
London 4909; London Royal 12.C.VI
TML: TRADEF (CSM 12)
http://www.chmtl.indiana.edu/tml/14th/TRADEF_TEXT.html
- Anonymous III *Compendiolum artis veteris ac novae*
Paris 15128
TML: ANO3COM (Couss)
http://www.chmtl.indiana.edu/tml/14th/ANO3COM_TEXT.html
- Anonymous V *Ars cantus mensurabili mensurata per modos iuris*
Bologna A 49; Florence 734; Florence Plut.29.48; Norcia 1260; Paris 7369
TML: ANO4ACM (GLMT 10)
http://www.chmtl.indiana.edu/tml/14th/ANO5ACM_TEXT.html
- Anonymous “St Emmeram” *De musica mensurata*
Munich 14523
TML: ANODMM (Yudkin, *De musica mensurata*)
http://www.chmtl.indiana.edu/tml/13th/ANODMM_TEXT.html
- Giorgio Anselmi *De musica*
Milan H.233.inf
TML: ANSDEM (Massera, *Georgii Anselmi Parmensis De musica*)
http://www.chmtl.indiana.edu/tml/15th/ANSDEM_TEXT.html
- Antonius de Leno *Regulae de contrapunto*
Venice Lat.Z.336
SMI: LENREG (Couss)
http://www.chmtl.indiana.edu/smi/quattrocento/LENREG_TEXT.html
- Johannes Boen *Ars Musice*
London 23220; Venice 3434
TML: BOENARSM (Venice 3434)
http://www.chmtl.indiana.edu/tml/14th/BOENARSM_MVBM8-24.html
BOENARS (London 23220)
http://www.chmtl.indiana.edu/tml/14th/BOENARS_MLBL2322.html
BOENMU (CSM 19)
http://www.chmtl.indiana.edu/tml/14th/BOENMU_TEXT.html
- Franco of Cologne *Ars cantus mensurabilis*
Oxford 842; Paris 11267; Paris 16667; Saint-Dié 42; St. Paul 264/4; Tremezzo; (Uppsala C 55; see Anonymous, *Ars musica mensurabilis secundum Franconem*)
TML: FRAACME (Paris 16663)
http://www.chmtl.indiana.edu/tml/13th/FRAACME_MPBN1666.html
FRAACMO (Oxford 42)
http://www.chmtl.indiana.edu/tml/13th/FRAACMO_MOBB842.html
FRAARSC (Gerbert)
http://www.chmtl.indiana.edu/tml/13th/FRAARSC_TEXT.html
FRAARS (Couss)

- http://www.chmtl.indiana.edu/tml/13th/FRAARS_TEXT.html
 FRAARSCM (Cserba, *Hieronymus de Moravia*)
http://www.chmtl.indiana.edu/tml/13th/FRAARSCM_TEXT.html
 FRAACM (CSM 18)
http://www.chmtl.indiana.edu/tml/13th/FRAACM_TEXT.html
- Franchinus Gaffurius *Practica musice*
 Bergamo MAB 21; Bologna A 69; Houghton Mus.142
 TML: GAFPM1 (Broude Bros, 1979)
http://www.chmtl.indiana.edu/tml/15th/GAFPM1_TEXT.html
 GAFPM2 (Broude Bros, 1979)
http://www.chmtl.indiana.edu/tml/15th/GAFPM2_TEXT.html
 GAFPM3 (Broude Bros, 1979)
http://www.chmtl.indiana.edu/tml/15th/GAFPM3_TEXT.html
 GAFPM4 (Broude Bros, 1979)
http://www.chmtl.indiana.edu/tml/15th/GAFPM4_TEXT.html
- Goscalcus? Berkeley II
 Berkeley 744; Catania D 39; London 23220
 TML: BERMAN (GLMT 2)
http://www.chmtl.indiana.edu/tml/14th/BERMAN_TEXT.html
- Goscalcus? Berkeley III
 Berkeley 744; Catania D 39
 TML: BERMAN (GLMT 2)
http://www.chmtl.indiana.edu/tml/14th/BERMAN_TEXT.html
- Johannes Hanboys *Summa*
 London 8866
 TML: HANSUMA (Couss)
http://www.chmtl.indiana.edu/tml/14th/HANSUMA_TEXT.html
 HANSUM (GLMT 7)
http://www.chmtl.indiana.edu/tml/14th/HANSUM_TEXT.html
- Hieronymus de Moravia *Tractatus de musica*
 Paris 16663
 TML: IERTDM1 (Cserba, *Hieronymus de Moravia*)
http://www.chmtl.indiana.edu/tml/13th/IERTDM1_TEXT.html
 IERTDM2 (Cserba, *Hieronymus de Moravia*)
http://www.chmtl.indiana.edu/tml/13th/IERTDM2_TEXT.html
- Jacobus de Liège *Speculum Musicae*
 Florence Plut.29.16; Paris 7207; Paris 7207A
 TML: JACSM6A (Couss)
http://www.chmtl.indiana.edu/tml/14th/JACSM6A_TEXT.html
 JACSM6B (Couss)
http://www.chmtl.indiana.edu/tml/14th/JACSM6B_TEXT.html
 JACSM7 (Couss)
http://www.chmtl.indiana.edu/tml/14th/JACSM7_TEXT.html
 JACSP1A (CSM 3)
http://www.chmtl.indiana.edu/tml/14th/JACSP1A_TEXT.html
 JACSP1B (CSM 3)

http://www.chmtl.indiana.edu/tml/14th/JACSP1B_TEXT.html
 JACSP2A (CSM 3)
http://www.chmtl.indiana.edu/tml/14th/JACSP2A_TEXT.html
 JACSP2B (CSM 3)
http://www.chmtl.indiana.edu/tml/14th/JACSP2B_TEXT.html
 JACSP2C (CSM 3)
http://www.chmtl.indiana.edu/tml/14th/JACSP2C_TEXT.html
 JACSP3A (CSM 3)
http://www.chmtl.indiana.edu/tml/14th/JACSP3A_TEXT.html
 JACSP3B (CSM 3)
http://www.chmtl.indiana.edu/tml/14th/JACSP3B_TEXT.html
 JACSP4 (CSM 3)
http://www.chmtl.indiana.edu/tml/14th/JACSP4_TEXT.html
 JACSP5A (CSM 3)
http://www.chmtl.indiana.edu/tml/14th/JACSP5A_TEXT.html
 JACSP5B (CSM 3)
http://www.chmtl.indiana.edu/tml/14th/JACSP5B_TEXT.html
 JACSP6A (CSM 3)
http://www.chmtl.indiana.edu/tml/14th/JACSP6A_TEXT.html
 JACSP6B (CSM 3)
http://www.chmtl.indiana.edu/tml/14th/JACSP6B_TEXT.html
 JACSP7 (CSM 3)
http://www.chmtl.indiana.edu/tml/14th/JACSP7_TEXT.html

Jacopo da Bologna² *L'arte biscanto misurato secondo el maestro Iacopo da Bologna*
 Florence Redi 71

Johannes de
 Garlandia *De mensurabili musica*
 Rome 5325
 TML: GARDEM (Couss)
http://www.chmtl.indiana.edu/tml/13th/GARDEM_TEXT.html
 GARDMM (Reimer, *Johannes de Garlandia*)
http://www.chmtl.indiana.edu/tml/13th/GARDMM_TEXT.html

Johannes de
 Garlandia *De plana musica*
 Paris 18514; Rome 5325; Washington LC J6

Johannes de
 Grocheio *De musica*
 Darmstadt 2263; London Harley 281
 TML: GRODEM (Rohloff, *Der Musiktraktat des Johannes de Grocheio*)
http://www.chmtl.indiana.edu/tml/14th/GRODEM_TEXT.html

Johannes de Muris *Compendium musicae practicae*
 Chicago 54.1; Ghent 70 (71); Paris 14741; Rome 1146; St. Paul 135/1; St. Paul
 264/4; Siena L.V.30; Washington LC J6
 TML: MURCOMP (Rome 1146)
http://www.chmtl.indiana.edu/tml/14th/MURCOMP_MBAVR114.html
 MURCOM (CSM 17)
http://www.chmtl.indiana.edu/tml/14th/MURCOM_TEXT.html

- Johannes de Muris? *Libellus cantus mensurabilis*
 Aosta 15; Arezzo 216; Bergamo MAB 21; Berkeley 744; Bologna A 29; Bologna A 32; Bologna A 48; Bologna A 56; Bologna B2/B; Brussels 785; Brussels 4149; Cambridge 410; Chicago 54.1; Catania D 39; Einsiedeln 689; Faenza 117; Florence 1119; Florence 388; Florence Redi 71; Florence 806; Ghent 70 (71); London 10336; London 23220; London 2954; London 466; Milan H.165.inf; Milan I.20.inf; Milan M.28.sup; Munich 15632; Munich 24809; Naples VIII.D.12; Paris 7369; Pavia 361; Pisa 606; Porto 714; Prague XI.E.9; Rio de Janeiro 18; Rome 36.D.31; Rome B.83; Rome 206; Rome 258; Rome 307; Rome 455; Rome 1146; Rome 1377; Rome 2151; Rome 5321; Saint-Dié 42; Seville 5.2.25; Siena L.V.30; Tübingen 48; Venice 3579; Washington LC J6
 TML: MURARSPA (Berkold, *Ars practica mensurabilis*)
http://www.chmtl.indiana.edu/tml/14th/MURARSPA_TEXT.html
 MURARSPB (Berkold, *Ars practica mensurabilis*)
http://www.chmtl.indiana.edu/tml/14th/MURARSPB_TEXT.html
 MURLCM (Rome 307)
http://www.chmtl.indiana.edu/tml/14th/MURLCM_MBAVB307.html
 MURLIBF (Florence 1119)
http://www.chmtl.indiana.edu/tml/14th/MURLIBF_MFAB1119.html
 MURLIBM (Milan I.20.inf)
http://www.chmtl.indiana.edu/tml/14th/MURLIBM_MMBAI20I.html
 MURLIBM1 (Milan H.165.inf)
http://www.chmtl.indiana.edu/tml/14th/MURLIBM1_MMBAH165.html
 MURLIBR (Rome 1146)
http://www.chmtl.indiana.edu/tml/14th/MURLIBR_MBAVR114.html
 MURLIBV (Venice 3579)
http://www.chmtl.indiana.edu/tml/14th/MURLIBV_MVBM8-85.html
 MURLIB (Couss)
http://www.chmtl.indiana.edu/tml/14th/MURLIB_TEXT.html
- Johannes de Muris *Notitia artis musicae*
 Cambridge R.14.26; Ghent 70 (71); Milan H.165.inf; Oxford 77; Oxford 300; Paris 14741; Paris 7378A; St. Paul 264/4; Tours 820; Washington LC J6
 TML: MURNOT (CSM 17)
http://www.chmtl.indiana.edu/tml/14th/MURNOT_TEXT.html
- John of Tewkesbury *Quatuor Principalia*
 Cambridge 1441; Ghent 70 (71); London 4909; London 8866; London Cott. Tib. B.IX (Anon. I); Oxford 90; Oxford 515
 TML: QUAPRIA1 (London 4909)
http://www.chmtl.indiana.edu/tml/14th/QUAPRIA1_MLBI4909.html
 QUAPRIA2 (London 4909)
http://www.chmtl.indiana.edu/tml/14th/QUAPRIA2_MLBI4909.html
 QUAPRIA3 (London 4909)
http://www.chmtl.indiana.edu/tml/14th/QUAPRIA3_MLBI4909.html
 QUAPRIA4 (London 4909)
http://www.chmtl.indiana.edu/tml/14th/QUAPRIA4_MLBI4909.html
 QUAPRIB1 (Couss)
http://www.chmtl.indiana.edu/tml/14th/QUAPRIB1_TEXT.html
 QUAPRIB2 (Couss)
http://www.chmtl.indiana.edu/tml/14th/QUAPRIB2_TEXT.html
 QUAPRIB3 (Couss)
http://www.chmtl.indiana.edu/tml/14th/QUAPRIB3_TEXT.html

QUAPRIB4 (Couss)

http://www.chmtl.indiana.edu/tml/14th/QUAPRIB4_TEXT.html

Magister Lambertus

Tractatus de musica

Berlin 1520; Erfurt 8° 94; Munich 24809; Paris 6755.2; Paris 11266; Siena L.V.30; Venice 6

TML: ARITRA (Couss)

http://www.chmtl.indiana.edu/tml/13th/ARITRA_TEXT.html

LAMTRAC (Siena L.V.30)

http://www.chmtl.indiana.edu/tml/13th/LAMTRAC_MSBCLV30.html

Marchetto of Padua

Lucidarium

Brussels 4144; Bologna A 44; Bologna A 45; Catania D 39; Chicago 54.1; Einsiedeln 689; Florence 388; Florence 734; Lodi S. Pietro; Milan D.5.inf; Milan I.20.inf; Pisa 606; Rome 5322; Saint-Dié 42; Seville 5.2.25; Siena L.V.30; St. Paul 135/I; Trezzano; Washington LC J6

TML: MARLU1M (Milan I.20.inf)

http://www.chmtl.indiana.edu/tml/14th/MARLU1M_MMBAI20I.html

MARLU2M (Milan I.20.inf)

http://www.chmtl.indiana.edu/tml/14th/MARLU2M_MMBAI20I.html

MARLU1 (Gerbert)

http://www.chmtl.indiana.edu/tml/14th/MARLU1_TEXT.html

MARLU2 (Gerbert)

http://www.chmtl.indiana.edu/tml/14th/MARLU2_TEXT.html

MARLU3 (Gerbert)

http://www.chmtl.indiana.edu/tml/14th/MARLU3_TEXT.html

MARLU4 (Gerbert)

http://www.chmtl.indiana.edu/tml/14th/MARLU4_TEXT.html

MARLU5 (Gerbert)

http://www.chmtl.indiana.edu/tml/14th/MARLU5_TEXT.html

MARLU6 (Gerbert)

http://www.chmtl.indiana.edu/tml/14th/MARLU6_TEXT.html

MARLU7 (Gerbert)

http://www.chmtl.indiana.edu/tml/14th/MARLU7_TEXT.html

MARLU8 (Gerbert)

http://www.chmtl.indiana.edu/tml/14th/MARLU8_TEXT.html

MARLU9 (Gerbert)

http://www.chmtl.indiana.edu/tml/14th/MARLU9_TEXT.html

MARLU10 (Gerbert)

http://www.chmtl.indiana.edu/tml/14th/MARLU10_TEXT.html

MARLU11 (Gerbert)

http://www.chmtl.indiana.edu/tml/14th/MARLU11_TEXT.html

MARLU12 (Gerbert)

http://www.chmtl.indiana.edu/tml/14th/MARLU12_TEXT.html

MARLU13 (Gerbert)

http://www.chmtl.indiana.edu/tml/14th/MARLU13_TEXT.html

MARLU14 (Gerbert)

http://www.chmtl.indiana.edu/tml/14th/MARLU14_TEXT.html

MARLU15 (Gerbert)

http://www.chmtl.indiana.edu/tml/14th/MARLU15_TEXT.html

MARLU16 (Gerbert)

http://www.chmtl.indiana.edu/tml/14th/MARLU16_TEXT.html

MARLUC1 (Herlinger)
http://www.chmtl.indiana.edu/tml/14th/MARLUC1_TEXT.html
 MARLUC2 (Herlinger)
http://www.chmtl.indiana.edu/tml/14th/MARLUC2_TEXT.html
 MARLUC3 (Herlinger)
http://www.chmtl.indiana.edu/tml/14th/MARLUC3_TEXT.html
 MARLUC4 (Herlinger)
http://www.chmtl.indiana.edu/tml/14th/MARLUC4_TEXT.html
 MARLUC5 (Herlinger)
http://www.chmtl.indiana.edu/tml/14th/MARLUC5_TEXT.html
 MARLUC6 (Herlinger)
http://www.chmtl.indiana.edu/tml/14th/MARLUC6_TEXT.html
 MARLUC7 (Herlinger)
http://www.chmtl.indiana.edu/tml/14th/MARLUC7_TEXT.html
 MARLUC8 (Herlinger)
http://www.chmtl.indiana.edu/tml/14th/MARLUC8_TEXT.html
 MARLUC9 (Herlinger)
http://www.chmtl.indiana.edu/tml/14th/MARLUC9_TEXT.html
 MARLUC10 (Herlinger)
http://www.chmtl.indiana.edu/tml/14th/MARLUC10_TEXT.html
 MARLUC11 (Herlinger)
http://www.chmtl.indiana.edu/tml/14th/MARLUC11_TEXT.html
 MARLUC12 (Herlinger)
http://www.chmtl.indiana.edu/tml/14th/MARLUC12_TEXT.html
 MARLUC13 (Herlinger)
http://www.chmtl.indiana.edu/tml/14th/MARLUC13_TEXT.html
 MARLUC14 (Herlinger)
http://www.chmtl.indiana.edu/tml/14th/MARLUC14_TEXT.html
 MARLUC15 (Herlinger)
http://www.chmtl.indiana.edu/tml/14th/MARLUC15_TEXT.html
 MARLUC16 (Herlinger)
http://www.chmtl.indiana.edu/tml/14th/MARLUC16_TEXT.html

Marchetto of Padua	<i>Pomerium</i> Brussels 4144; Bologna A 44; Bologna A 45; Catania D 39; Chicago 54.1; Lodi S. Pietro; Milan D.5.inf; Pisa 606; Rome 5322; Siena L.V.30; Tremezzo TML: MARPOM (Gerbert) http://www.chmtl.indiana.edu/tml/14th/MARPOM_TEXT.html MARPOME (CSM 6) http://www.chmtl.indiana.edu/tml/14th/MARPOME_TEXT.html
Petrus de Sancto Dionysio	<i>Tractatus de Musica</i> Chicago 54.1; Siena L.V.30; Washington LC J6 TML: PSDTRA (CSM 17) http://www.chmtl.indiana.edu/tml/14th/PSDTRA_TEXT.html
Petrus dictus Palma Ociosa	<i>Compendium de discantu mensurabilis</i> Erfurt CA 8° 94 TML: PETCOM (Wolf, "Ein Beitrag") http://www.chmtl.indiana.edu/tml/14th/PETCOM_TEXT.html

- Philipoctus da Caserta? *Tractatus figurarum*
Catania D 39; Chicago 54.1; Faenza 117; London 4909; Milan I.20.inf; Naples VIII.D.12; Pisa 606; (Prague M.CIII); Rome 1377; Rome 5321; Seville 5.2.25; Siena L.V.30; Washington LC J6
TML: CASTRAM (Milan I.20.inf)
http://www.chmtl.indiana.edu/tml/14th/CASTRAM_MMBAI20I.html
CASTRA (Couss)
http://www.chmtl.indiana.edu/tml/14th/CASTRA_TEXT.html
TRAFIG (GLMT 6)
http://www.chmtl.indiana.edu/tml/14th/TRAFIG_TEXT.html
RISM:
<http://www.univnancy2.fr/MOYENAGE/UREEF/MUSICOLOGIE/pr1463a.htm>
- Johannes Pipudi *De arte cantus ("Pro introduccione cognitionis ...")*
Seville 5.2.25
- Prosdocimo de Beldemandis *Expositiones tractatus practive cantus mensurabilis magistri Johannis de Muris*
Bologna A 56; Catania D 39
TML: PROEXP (Gallo, *Prosdocimi de Beldemandis opera 1*)
http://www.chmtl.indiana.edu/tml/15th/PROEXP_TEXT.html
- Prosdocimo de Beldemandis *Tractatus practice de musica mensurabili*
Bologna A 56; Florence 206; Lucca 359
TML: PROTRAP1 (Couss)
http://www.chmtl.indiana.edu/tml/15th/PROTRAP1_TEXT.html
- Prosdocimo de Beldemandis *Tractatus practive cantus mensurabilis ad modum Ytalicorum*
Bologna A 56; Lucca 359
TML: PROTRAY (Sartori, *La notazione italiana*)
http://www.chmtl.indiana.edu/tml/15th/PROTRAY_TEXT.html
PROTRAP2 (Couss)
http://www.chmtl.indiana.edu/tml/15th/PROTRAP2_TEXT.html
- Robertus de Handlo *Regule*
London 4909
TML: HANREGU (Couss)
http://www.chmtl.indiana.edu/tml/14th/HANREGU_TEXT.html
HANREG (GLMT 7)
http://www.chmtl.indiana.edu/tml/14th/HANREG_TEXT.html
- Johannes Torkesey *Declaratio Trianguli et Scuti*
Cambridge 1441; London 21455; London Lansd. 763; Rome 1146
TML: TORKDEC (London Lansd. 763)
http://www.chmtl.indiana.edu/tml/14th/TORKDEC_MLBLE763.html
TORKDEC1 (Rome 1146)
http://www.chmtl.indiana.edu/tml/14th/TORKDEC1_MBAVR114.html
TORTIL (London 21455)
http://www.chmtl.indiana.edu/tml/14th/TORTIL_MLBLE2145.html
TORTRI (CSM 12)
http://www.chmtl.indiana.edu/tml/14th/TORTRI_TEXT.html

- Johannes Vetulus
de Anagnia *Liber de Musica*
Bologna A 47; Catania D 39; Rome 307
TML: VERDMPV (Rome 307)
http://www.chmtl.indiana.edu/tml/14th/VERDMPV_MBAVB307.html
VERLIB (Couss)
http://www.chmtl.indiana.edu/tml/14th/VERLIB_TEXT.html
VERLDM (CSM 27)
http://www.chmtl.indiana.edu/tml/14th/VERLDM_TEXT.html
- Thomas Walsingham *Regule Magistri Thome Walsingham*
London Lansd. 763
TML: WALREGU (London Lansd. 763)
http://www.chmtl.indiana.edu/tml/14th/WALREGU_MLBLL763.html
WALREG (CSM 31)
http://www.chmtl.indiana.edu/tml/14th/WALREG_TEXT.html
- Walter of Evesham
(Walter Odington) *Summa de speculatione musice*
Cambridge 410 I; London 4909; London 56486 A
TML: ODIDES (Couss)
http://www.chmtl.indiana.edu/tml/14th/ODIDES_TEXT.html
ODISUM (CSM 14)
http://www.chmtl.indiana.edu/tml/14th/ODISUM_TEXT.html
- Nicasius Weyts *Regule*
Faenza 117; Bologna A 32
TML: WEYREG
http://www.chmtl.indiana.edu/tml/15th/WEYREG_TEXT.html
- Willelmus *Breviarum*
Oxford 842
TML: WILBREV (Oxford 842)
http://www.chmtl.indiana.edu/tml/14th/WILBREV_MOBB842.html
WILBRE (CSM 12)
http://www.chmtl.indiana.edu/tml/14th/WILBRE_TEXT.html

Secondary Literature:

Abbreviations:

- CCMS Charles Hamm and Herbert Kellmann, editors. *Census Catalogue of Manuscript Sources of Polyphonic Music 1400-1550*, 5 volumes. Renaissance Manuscript Studies 1. Rome: American Institute of Musicology, s.l. 1979-1988.
- CMM Corpus Mensurabilis Musicae. 112 volumes. [Rome]: American Institute of Musicology, 1954-.

COUSS	Charles Edmond Henri de Coussemaker. <i>Scriptorum De Musica Medii Aevi</i> . Hildesheim: G. Olms, 1963.
CSM	Corpus Scriptorum de Musica. 42 volumes. [Rome]: American Institute of Musicology, 1950-.
DIAMM	Andrew Wathey and Margaret Bent, directors. <i>Digital Image Archive of Medieval Music</i> . Online at http://www.diamm.ac.uk .
EECM	Early English Church Music. 53 volumes. London: Stainer and Bell, 1963-.
GERBERT	Martin Gerbert. <i>Scriptores Ecclesiastici De Musica Sacra Potissimum. Ex Variis Italiae, Galliae & Germaniae Codicibus Manuscriptis Collecti Et Nunc Primum</i> . Hildesheim: Georg Olms Verlagsbuchhandlung, 1963.
GLMT	Greek and Latin Music Theory. 10 volumes. Lincoln, NE: University of Nebraska Press, 1984-2004.
HMT	<i>Handwörterbuch Der Musikalischen Terminologie. Im Auftrag Der Kommission Für Musikwissenschaft Der Akademie Der Wissenschaften Und Der Literatur Zu Mainz</i> , edited by Hans Heinrich Eggebrecht. Wiesbaden: F. Steiner, 1972.
MGG	Ludwig Finscher, editor. <i>Die Musik in Geschichte und Gegenwart: Allgemeine Enzyklopädie Der Musik</i> . New York: Bärenreiter, 1994.
MSD	Musicological Studies and Documents. 55 volumes. [n.p.]: American Institute of Musicology, 1951-.
NEW GROVE	Stanley Sadie and John Tyrrell, editors. <i>The New Grove Dictionary of Music and Musicians</i> , second edition. 29 volumes. London: Macmillan, 2001. Also online at http://www.grovemusic.com
PMFC	Leo Schrade, Frank Ll. Harrison, and Kurt von Fischer, editors. <i>Polyphonic Music of the Fourteenth Century</i> . 25 volumes. Monaco: Éditions de l'Oiseau-Lyre, 1956-1991.
RISM B III	<i>Répertoire International des Sources Musicales</i> , Series B.III: <i>The Theory of Music: Manuscripts from the Carolingian Era up to c. 1500</i> . 6 volumes. Munich: G. Henle Verlag, 1961-2003.
RISM B IV	<i>Répertoire International des Sources Musicales</i> , Series B IV. 5 volumes. Munich: G. Henle Verlag, 1966-1991.

SHoMTL	Studies in the History of Music Theory and Literature. 4 volumes. Urbana: University of Illinois Press, 2006-.
SIM	Studies in Musicology. 110 volumes. Ann Arbor, MI: UMI Research Press, 1977-1990.
SMI	Saggi musicali italiani. Online at http://www.chmtl.indiana.edu/smi/
TML	Thesaurus Musicarum Latinarum. Online at http://www.chmtl.indiana.edu/tml/start.html

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