

Chapter 4 : *The notational grammar of the ars subtilior*¹

In Chapter 1, I discussed the role of significative precision in musical notation and its role in defining the style of the *ars subtilior*. I also identified an anxiety in the author of the *Tractatus Figurarum* regarding the representation of musical events through notation. Composers and musician scribes from this period also shared this anxiety, although many individuals exhibited a confidence in their own masterly abilities, for example Jacob de Senleches, at both a musical and intellectual level, which resulted in their developing or adopting a standard grammar for notational representation. This and the subsequent two chapters detail elements of the semiotic system which composers and scribes developed in the late fourteenth century and used to record or represent musical compositions (or even improvisations) employing refined divisions of musical time. This chapter retains an emphasis on the fundamental elements of this system, the actual note shapes.

It is difficult for a citizen of the twenty-first century, especially one literate in Western musical notation(s), to appreciate the vibrant energy which resides in the notational practices of this period, an energy whose radiance has been dimmed by the space of more than six hundred years. More than half of this expanse of time has been witness to a musical notational system, which might be called common practice notation. Certainly this more recent notational system, as especially distinct from the many experimental types proposed in the twentieth century, is continually evolving and subject to the demands of its users and readers. Yet it is underpinned and maintained by a body of established repertoire, which continues to be performed in the concert hall and influence pedagogic activity. Its fundamental principles of inherently and singularly binary division and a predominant focus on the crotchet as a unit of measurement have remained unchallenged. The notational system of the fourteenth century, the mensural system, embodied a somewhat different set of fundamentals that distinguishes it from the later systems.

¹ The reader should note that parts of this current chapter draw on and develop the views published in Stoessel, *op.cit.*, pp. 136-164.

The mensural system of musical notation came into existence during the second half of the thirteenth century and is most famously and succinctly codified in the treatise of Franco of Cologne.² Rather than relying on the prescriptive realisation of patterns of notes and ligatures as in the earlier modal notation, the system codified by Franco sought to express discretely the durations themselves. Yet, it is only in the early decades of the fourteenth century that the mensural system developed in France into a particular form that was to remain fundamental for the next two centuries. I have already discussed a central aspect of this development in Chapter 1 in relation to the invention of the *minima* in the second phase of *ars nova* notation. In Italian regions, an equally viable, arguably more expansive, alternative system developed from the same origins, which, despite its subsequent extinction, may have conceptually influenced the French mensural system in the later part of the fourteenth century. At their very creation or evolution, both French and Italian mensural systems were inherently ambivalent, each of their durational signs able to represent a division into three or two parts. The Italian system actually went further by proposing divisions into up to nine parts, a principle sustained from late manifestations of the Franconian system. In both systems, the division into three or two parts was referred to on a regular basis as respectively perfect and imperfect.

Unlike the later repertoire utilising common practice notation, music recorded in mensural notation forms part of a discontinuous tradition, replaced by subsequent systems and the repertoires largely forgotten until their slow revival over the past one hundred years or so. The recognition of this discontinuation forces today's music historians to reconsider the assumptions they might bring from their musical experience, often founded in repertoires employing common practice notation, and to admit that the conceptual hiatus between it and mensural notation may be considerable.^{2a}

It is the purpose of this chapter to detail concepts that lay at the heart of the French mensural system and their role in the music of the *ars subtilior* style. For this reason and in the absence of any possible aural record of music from this period, I turn to the two most

² Gilbert Reaney and André Gilles, (eds), *Franconis de Colonia Ars Cantus Mensurabilis*, Corpus Scriptorum de Musica 18, s.l., 1974. For an overview of the development of the mensural system *vid.* Margaret Bent, 'Notation, §3, 3: Polyphonic mensural notation c. 1260-1500', in *The New Grove Dictionary of Music and Musicians*, 2nd edn, ed. S. Sadie, London, 2001, vol. 18, pp. 129-140.

^{2a} For a discussion of the challenges involved in editing early music into modern notation, *vid.* Margaret Bent, 'Editing Early Music: the dilemma of translation', *Early Music*, vol. 22, no. 3, 1994, pp. 373-392.

invaluable resources at hand: the practical musical sources containing the notation and the writings of musical theorists who discuss the various elements of musical notation. Admittedly, this approach is restricted by the very process of writing and cannot answer every question concerning this repertoire. Nonetheless, musical and theoretical sources are often the only first hand witnesses, the closest in most cases to the creators or practitioners of this music, not always in relation to space, but undoubtedly in time. The present chapter is not concerned with the actual aural landscape of this music, although it will consider some of the implications of various concepts on our re-creation of a lost aesthetic. Instead, it seeks to answer the question of what concepts lay behind the notational processes of the late fourteenth century in relation to musical rhythm and were factors in its formation on the page. This approach might form the basis for further inquiry, in particular, providing answers to questions concerning how the notation is a response to musical demands, notions which might lie at the heart of the performance of music in the *ars subtilior* style.

A constant distinction encountered in musical theory, and one which I believe is useful to the present study, concerns intrinsic and extrinsic modes of signification. To a certain extent, this reflects intellectual tendencies during this period that I will detail in subsequent paragraphs. Predominantly, this intellectualisation of a symbol system arose out of medieval theories of metalanguage, which were closely entwined with philosophical thought at that time. This situation can also be viewed as a response to this new symbol system whereby it is resident in, and respondent to, theories of language or meaning. What I wish to emphasise is the view that the intellectual culture behind musical notation is not merely confined to musical circles, but like composers from this period, it operates in a broader context subject to the influence of the other six liberal arts. In what follows, I will demonstrate how intrinsic elements of music notation include the properties of the notes themselves, while extrinsic elements are exterior to, but give additional meaning to, those note shapes.

The *Expositiones tractatus practice cantus mensurabilis magister Johannes de Muris*, a gloss by the early fifteenth century Paduan polymath Prodocimus de Beldemandis on Johannes de Muris' *Libellus cantus mensurabilis*,³ not only contains direct references to the

³ Prodocimus' version of the *Libellus* corresponds closely with *Recensio major A* as found in the edition Christian Berkold, (ed.), *Ars practica mensurabilis cantus secundum Iohannem de Muris: Die Recension maior de*

works of the Ancient Greek philosopher Aristotle, but reveals thought processes imbued in an ontological framework inherited from Aristotle's *Metaphysica*. In chapter LVII of the *Expositiones* Prosdocimus distinguishes mensuration signs and the like (*prima signa*) from the coloration and variation of note forms (*secunda signa*) with the following statement:

...*prima signa extrinseca nomenavi, quoniam totaliter cantui extranea et extrinseca et non de essentia cantus; secunda vero signa intrinseca nominavi, quoniam bene sunt de essentia cantus. Quot patet, quia ista signa secunda sunt ipsemet figure sic variate in colore vel evacuatione et plenitudine. Sed cum ipse figure sive note sint bene de essentia ipsius cantus in quo sunt, sequitur quod ista signa secunda sunt etiam de essentia ipsius cantus et per consequens intrinseca...*⁴

The key to this passage rests in the term *essentia* (essence). The distinction between intrinsic nature belonging of the essence of something and extrinsic or accidental nature belonging not to that “thing’s” essence rests firmly in concepts derived from Aristotelean metaphysics.⁵ In *Metaphysics*, Book Zeta, Chapter 4, Aristotle defines the essence of each “thing” as what it is said to be by its own nature (*propter se*).⁶ Furthermore, “cause” is defined as the form or pattern, which is in turn the definition of essence.⁷ By following the terminology of the *Metaphysics*,⁸ Prosdocimus can define a note form or shape as its essence, which in turn is part of the musical substance or the cause of the song’s actuality. In terms of mensural theory, the shape of a *semibrevis* represents a *semibrevis*, but its substantiation is only possible in conjunction with other elements including the mensuration, the pitch and other complex physical manifestations. However, the passage cited above reveals a critical element in

sogenannten "Libellus practice cantus mensurabilis", Veröffentlichungen de Musikhistorischen Kommission 14, München, 1999.

⁴ “I have called the first signs <sc. mensuration signs> extrinsic since <they are> totally extraneous and extrinsic to the song and not of the essence of the song; I have called the second signs intrinsic since they are correctly of the essence of the song. This is obvious because those second signs are the very figures thus varied in colour, hollowing out and fullness. But since the figures or notes themselves are correctly of the essence of their song in which they occur, it follows that those second signs are also of the essence of their song and as a consequence are intrinsic”; F. Alberto Gallo (ed.), *Prosdocimi de Beldemandi Opera I: Expositiones tractatus practice cantus mensurabilis magister Johannes de Muris*, chap. LVII, sent. 10-12.

⁵ On problems associated with the translation of Aristotle’s term οὐσία into both Latin and English, *vid.* Joseph Owens, *The Doctrine of Being in the Aristotelian 'Metaphysics'*, 3rd edn, Toronto, 1978, pp. 137-154; on the reception of this term in medieval philosophy, *vid.* John F. Wippel, ‘Essence and existence’, in *The Cambridge History of Later Medieval Philosophy*, eds N. Kretzmann, A. Kenny and J. Pinborg, Cambridge, 1982, pp. 385-410.

⁶ W. D. Ross (trans.), *The Works of Aristotle*, Oxford, vol. VIII - *Metaphysica*. Q.v David Bostock, (ed.), *Aristotle: Metaphysics Books Z and H*, Clarendon Aristotle Series, Oxford, 1994.

⁷ Ross, *op.cit.*, Book Delta, ch. 1.

⁸ On the translation of Aristotle into Latin and the availability of his writings during the middle ages, *vid.* Bernard G. Dod, ‘Aristoteles latinus’, in *The Cambridge History of Later Medieval Philosophy*, eds N. Kretzmann, A. Kenny and J. Pinborg, pp. 45-79.

Prosdocimus' (and his contemporaries') conceptualisation of written note forms. That figures are considered part of the essence of the song (*de essentia cantus*), presupposes a conceptual link between the song itself (as a physical, that is audible, manifestation) and the actual notation. While this situation is perhaps an oversimplification on the basis that the actual manifestation of a notated pitch-duration would be correctly considered an *accidentia* which maintains its *essentia* but also includes separable, individual parts not proper to its *essentia*, the distinction stems from the Aristotelean precept that knowledge resides in the recognition not of *accidentie*, as these do not define a thing, but in its *essentia*. Thus, knowledge of the essence of a thing can only be gained through *accidentie*.

Prosdocimus is not alone in his application of Aristotelean ontology to musical notation. The very structure of Marchettus de Padua's *Pomerium* resides in the distinction between the accidental and extrinsic, and the essential and intrinsic. This is made clear in the introductory sentence at the beginning of the first part of the *Pomerium*:

Quoniam, dicente Philosopho in prooemio de Anima, accidentia multum conferunt ad cognoscendum quod quid est, id est, per cognitionem accidentium devenimus in cognitionem essentiae rei. Cum igitur in praesenti opere nostrae intentionis sit cognitionem tradere per rationes essentiae musicae mensuratae, igitur primo de accidentibus sive de accidentalibus concurrentibus in musica mensurata principaliter est tractandum, deinde de essentialibus musicae praelibatae.⁹

The first part of the *Pomerium* concerns itself with the *cauda* and related notions of propriety, the *pausa*, the *pontellus* (*punctus divisionis*) and *musica ficta*. The second concerns itself with time, and its applications to music (the *divisiones*) and the proportions of various notes within it. The *Pomerium*'s principles of organisation are appropriate for the Italian system of notation, but would not be followed by a French theorist. This can be concluded from the remarks of the early *ars nova* theorist Anonymous OP:

Item caudatum et incaudatum non accidunt notulae, sed sunt differentiae specificativae et de essentia notarum, prout contingit in hiis reperire ordinem generis vel speciei.¹⁰

⁹ "Since, as the Philosopher <sc. Aristotle> says in the introduction to *De Anima*, accidentals contribute much to knowing what a thing is, that is, by the comprehension of accidentals we arrive at an understanding of a thing's essence. Since in the present work it is our intention to lay down by means of reason the essence of measured music, therefore the accidentals or accidentals occurring principally in measured music must be covered first, before the essences of music are examined"; Joseph Vecchi, (ed.), *Marchetti de Padua Pomerium*, Corpus Scriptorum de Musica 6, s.l., 1961, p. 39.

¹⁰ "Likewise being tailed or not tailed do not belong to the note, but are specific things that differentiate and pertain to the essence of notes, as is contingent in discovering the order of genus or species in these things";

Unlike Marchettus' conceptualisation of early *trecento* notational system where tails (*caude*) are indicators of accidental manifestations of major *semibreves* (downwards tail) or *minime* (upwards tail) dependent on context within the *tempus*, the upwards tailed *semibrevis*-shape in the *ars nova* system is distinct and always a *minima*. This distinction is an important one in relation to the discussion below regarding special note shapes and their various forms.

The connection between an ontological framework and a metalinguistic model occurs at the earliest stages of *ars nova* theory. In 1321, Johannes de Muris in his *Notitia artis musicae* premises his discussion of the various note forms (*de protractione figurarum*) with the following statement:

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. Et licet signa sint ad placitum, tamen quoniam omnia sibi invicem consonant quodammodo signa convenientiora vocibus signandis debent a musicis inveniri.

In quorum inventione figuras geometricas sisse signa vocum musicalium iam diu est antiqui sapientiores unanimiter concesserunt, quas puncta non pro indivisibili, sed ut medicus nunc pro die voluerunt appellare. Figura autem scripturae aptior superficies quadrilatera est, cum ex sola calami linea procreetur. In qua tamquam in genere convenit omnis notula musicalis per eamque formis essentialibus variatam omnis modus cantus cuiuslibet explicatur, essentialibus dico, id est naturalibus figurae post impositionem, vel essentialibus, id est de forma essentiali notulae, id est figurae significativae.¹¹

De Muris acknowledges that even in previous times there was some consternation over new note shapes among their inventors. He also observes that notes should to be easy to write and able to express every manner of song. This gloss-like clarification makes it clear that De Muris regards the form/shape of a note, that is its very essence, to be tantamount to the

Ulrich Michels, 'Der Musiktraktat de Anonymus OP: Ein frühes Theoretiker-Zeugnis der Ars nova', *Archiv für Musikwissenschaft*, vol. 26, 1969, p. 62.

¹¹ "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. Granted that signs should please, however, since all agree with one another in as much as signs more appropriate for indicating tones, they ought to be invented by musicians. In the invention of these signs, the wiser men of old for a long time unanimously agreed that geometric figures are themselves signs of musical tones, which they desired to call "points" not for their indivisibility, but as a physician <does> now for a moment of time. A figure more suited to writing, however, is the square two-dimensional form (*superficies*), since it is generated from a single stroke of the pen. In which, as every musical note agrees in general and through its variation of essential form, every manner of any song can be represented: I say essential in that it pertains to the nature of a figure after being set down <on the page>, or it is of the essential form of a note, that is a significative figure."; Ulrich Michels, (ed.), *Johannes de Muris: Notitia artis musicae et Compendium musicae practicae*, Corpus Scriptorum de Musica 17, s.l., 1972, pp. 74-75.

significant character of the note.¹² In other words, the shape of a note or figure has a direct bearing on its meaning.¹³ But the arrival at this truism is through an ontological framework, similar to that articulated later by Prosdocimus above, which provides a useful departure for my discussion of the notation of the *ars subtilior*.

While the division proposed by Prosdocimus of notational devices into intrinsic and extrinsic forms can seem artificial to the modern reader, who might conjecture that such a distinction was brought about more by the theorist's desire to aspire to a learned audience than any concern for reality, one must not be quick to overlook the fact that this artifice is representative of a culture that also fostered the development of *musica mensurata*. Aristotelianism was viewed by many writers from the fourteenth century, including several musical theorists, as an appropriate means of providing the ontological framework for musical notation and events. To dismiss this distinction as inconsequential is to separate the music itself from one facet of its very context, and to deny a cultural truth which ties into the notion of increased significant precision in the musical notation of the *ars subtilior*.

The distinction between intrinsic and extrinsic modes of signification also reflects the developments in French notation during the fourteenth century. While theorists discuss modes of extrinsic signification (and there are some instances of their use in practical sources before 1400), the actual and therefore practical manifestation of musical notation before this date was almost totally reliant upon intrinsic modes of signification. As I argue in the next chapter, seldom were mensuration signs used in the early French mensural system. Instead, the mensural context was determined through intrinsic elements, such as coloration, the *punctus divisionis* (p.d.), the *punctus perfectionis* (p.p.) and the grouping of note forms. Much of the music of the *ars subtilior* still relied on intrinsic modes of signification, which included coloration and the modification of note forms through *differentia*. In so far as special note shapes are concerned, it is only through the use of mensuration and proportion signs that intrinsic modes of signification were challenged and eventually succumbed to extrinsic modes of signification. Such was the state of affairs that, by the last third of the

¹² Cf. F. Alberto Gallo, 'Die Notationslehre in 14. und 15. Jahrhundert', in *Die mittelalterliche Lehre von Mehrstimmigkeit*, ed. F. Zamminer, Geschichte der Musiktheorie 5, Darmstadt, 1984, pp. 273-274.

¹³ Cf. F. Alberto Gallo, 'Figura and regula: Notation and theory in the tradition of *musica mensurabilis*', in *Studien zur Tradition in der Musik: Kurt von Fischer zum 60. Geburtstag*, eds H. Eggebrecht and M. Lütolf, Munich, 1973, pp. 43-48.

fifteenth century, mensuration signs were a dominant and inseparable aspect of a work's notation.¹⁴

This distinction between intrinsic and extrinsic forms of signification, which runs through this and the next two chapters, resides in a progress of cultural values among the practitioners of the *ars subtilior* repertoire. These values themselves appear to overlap: resistant to change in one place, while in another, developments take place, and *vice versa*. Perhaps one of the strongest examples of the meeting of both systems occurs in Bartholomeus de Bononia's *Que pena maior*, where special note shapes (◻, ◊ and ◌) occur alongside signs of proportion (Indo-Arabic numerals 2 & 3). As such, there exists a level of semantic equivalence (as equivoques) between both systems, so that, for example, the third special note shape given above is also expressed as a dotted *semibrevis* after the duple proportion sign 2. Similarly, the *semiminima* is equal in duration to the *minima* in the sections governed by the proportion indicated by 2. This situation contrasts with the music of Jacob de Senleches in which proportional relationships are always expressed by special note shapes whose natures are purely intrinsic. Significantly, the Senleches' notation lacks the equivoques found in *Que pena maior* which result from the conflation of extrinsic and intrinsic modes of signification.

Throughout the fourteenth century and into the fifteenth century, *ars nova* and *ars subtilior* theorists identify five fundamental note types, the *maxima* (◻), the *longa* (◻), the *brevis* (■), the *semibrevis* (◊) and the *minima* (◌). Each note shape, shown here proceeding from the largest to the smallest duration, denoted a step in the *gradus* system whose duration was divisible into three or two of the immediately lesser magnitude. The second, third and fourth note shapes were already available in the second half of the thirteenth century, but the first and last types are inventions of the *ars nova*, whose very names represent a conceptual leap beyond the essentially qualitative names of the inner three notes.¹⁵ They denote respectively the longest duration and the shortest duration available in the *ars nova* mensural system. However, unlike the *maxima*, the *minima* in the French system was of an equivalent duration over all the mensurations (a feature not shared by the Italian system) and predominantly considered indivisible by *ars nova* theorists. Indeed, the notation of an

¹⁴ I thank Dr Eakins for this observation, made in a private communication, 8th November, 2001.

¹⁵ For the proposition that the terms are connected with developments in natural philosophy in the fourteenth century, particularly in relation to the Oxford calculators, *vid.* Dorit Tanay, *op.cit.*, pp. 82-84.

absolute value for the *minima* remains a theoretical tenant far beyond its actual application, as is testified by its obstinate centrality in the writings of late fifteenth century theorists Johannes Tinctoris and Franchinus Gaffurius.¹⁶

The concept of *minima*-equivalence was central to the formation of the four mensurations of the French *ars nova* notational system. It may be seen as an attempt to remove the dominance of the *longa-brevis* relationship central to modal and Franconian notation. While I will reserve a discussion of mensurations until next chapter, it should be noted that in the four mensurations of the French *ars nova* system, the equality of *minime* was responsible for the different and therefore unequal durations of the *semibrevis* (=3 or 2 *minime*), *brevis* (=4, 6 or 9 *minime*) and *longa* (=8, 12, 18 or 27 *minime*). The obstacle of *minima* equivalence can be seen as one of the major factors contributing to the developments in musical notation of the late fourteenth and early fifteenth centuries,¹⁷ although it would be rash to exclude new stylistic demands as a major cause behind such notational experimentation.

Before proceeding, it is useful to recall two further principles of French *ars nova* notation: alteration and *syncopa*. Alteration, which was inherited from Franconian notation, involved instances where two notes belonging to a distinct level of mensuration (*gradus*) preceded a note of the next order of magnitude. If the large note was perfect according to the mensuration, then the second of the two smaller notes was double in its length. Thus, if two *minime* preceded a *semibrevis* in major or perfect prolation, the second *minima* would be altered and sung with the duration of two *minime*. It should be noted that alteration could only occur when the division of the *longa*, *brevis* or *semibrevis* (which are called respectively *modus*, *tempus* and *prolatio*) is perfect.

A *syncopa* is the division of a note into smaller values such that they are interpolated by other notes or imperfections.¹⁸ In its earliest guise, this device was dependent on the *punctus*. In the *Libellus*, it is stated that there are two types of *puncti* namely the *punctus perfectionis* (p.p.) and the *punctus divisionis* (p.d.).¹⁹ The p.p. is also called the *punctus*

¹⁶ Vid. Bonnie J. Blackburn, 'Did Ockeghem listen to Tinctoris?', in *Johannes Ockeghem: Actes du XLe Colloque international d'études humanistes*, ed. P. Vendrix, Paris, 1998, pp. 618-619; Busse Berger, *op.cit.*, pp. 72-77.

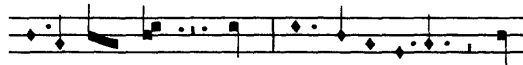
¹⁷ Margaret Bent, 'Notation, §3, 3: Polyphonic mensural notation c. 1260-1500', pp. 129-140.

¹⁸ Cf. Wolf Frobenius, (ed.), *Johannes Boens Musica und seine Konsonanzenlehre*, Freiburger schriften zur Musikwissenschaft 2, Stuttgart, 1971, p. 163.

¹⁹ Berktold, *op. cit.*, p. 42; cf. Prosdocius de Beldemandis gloss on this passage in Gallo, *Prosdocius de Beldemandi Opera 1: Expositiones*, Chap. XLIX.

additionis. The p.p. is used after a note that is imperfect according to the mensuration to make the note perfect, that is to increase the note's value by half, similar to the dot in common practice notation. The p.d. serves to separate one note from the other, usually to prevent the alteration or imperfection of an adjacent note. The p.d. is put to use in *syncopa* or *syncopatio*, as illustrated by the anonymous author of the *Ars cantus mensurabilis mensurata per modos iuris* treatise, who writes:

In maiori prolatione multe syncopae inveniuntur et varie, quamvis sint idem in substantia, et primo inveno in motetto Ida capillorum talem syncopam ut hic:



*Illa prima minima reducitur cum illis duabus posterioribus, scilicet cum pausa minime et minima.*²⁰

In conjunction with the definition given by this theorist that

*...syncopa est quo ad totum alicuius note mediante imperfecto vel divisio facta in modo, tempore, vel prolatione. Dixi imperfectio quo ad modum, tempus, vel prolationem perfectam; dixi divisio et hoc quo ad modum, tempus, vel prolationem imperfectam...*²¹

it can be concluded that *syncopa* is the process whereby a perfection is divided into smaller values. This may be achieved by imperfection in the case of a perfect duration or division in the case of an imperfect duration. By extension, the example given by this theorist shows that, by effectively protecting each division of a 'syncopated' perfection from adjacent notes, the p.d. allows these divisions to be interpolated by other notes or perfections. This device, which Willi Apel termed displacement syncopation,²² is first found in the late works of Machaut, which suggests its development after *circa* 1360 within the French tradition.

As will be discussed below, coloration brought about new strategies in relation to the avoidance of alteration and use of syncopation. It should not be forgotten, however, that these processes evolved as a response to developing stylistic features, especially the use of long phrases of often-complex *syncopa* that required notational clarity beyond that offered by the

²⁰ "In major prolation many and varied syncopations are found, although they are the same in their substance, and I first found this kind of syncopation in the motet *Ida capillorum* as here...the first minima is grouped together with the later ones, that is the minima rest and the minima"; C. Matthew Balensuela, (ed.), *Ars cantus mensurabilis mensurata per modos iuros*, Greek and Latin Music Theory 10, Lincoln and London, 1994, p. 212.

²¹ "Syncopa is made in *modus*, *tempus*, or prolation whenever the whole of any note is split by imperfection or division. I have said imperfection whenever *modus*, *tempus* or prolation are perfect. I have said division and this is whenever *modus*, *tempus* or prolation are imperfect"; Balensuela, *op. cit.*, pp. 212.

²² Apel, *Notation of Polyphonic Music*, pp. 395-402, 414-417.

p.d. The proportional use of coloration marked another level stylistically in that it facilitated scribes with the ability to notate syncopation of three or more proportional divisions of time. The next section outlines the various guises in which coloration can be found in extant sources from this period.

4.1. Coloration

The use of coloration in the music of the *ars subtilior* is a subject that has already received much attention.²³ Rather than repeating the findings of previous scholarship, the following paragraphs serve to outline the fundamental elements of coloration in the musical notation of the late fourteenth and early fifteenth centuries and then further discuss its neglected aspects.

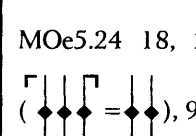
The origins of coloration coincide with the evolution of the *ars nova* style. Already in the early fourteenth century (c. 1318), red coloration appears in the T of Philippe de Vitry's *Garrit gallus/In nova fert/Neuma* in Pn 146 to indicate a shift from major to minor *modus*, that is perfect *breves* become imperfect. *Thalamus puerpere thronus salomonis/Quomodo cantabimus* also uses the same device in Pn 146. At a proportional level, a *sesquialtera* relationship operates relative to the *brevis*. Black and colored *minime* are still equal. The same device occurs later in the works of Guillaume de Machaut.²⁴ The last decades of the fourteenth century are witness to an expansion of the principle of coloration to signify other proportional relationships and the diminution of note values. Rather than indicating diminution of the note's duration, coloration could indicate augmentation. While equivalence of the *minima* remained a fundamental principle in many forms of coloration, there is a particular emphasis on the use of coloration to circumvent this effect which resulted in new forms of coloration and experimentation in the manner of coloration.

Four principal types of coloration may be identified in the extant repertoire. Three additional phenomena also exist which, although distinct, are derived from the six principal types. Table 4.1 catalogues the various coloration types that occur in the two principal sources of the *ars subtilior*, MOe5.24 and CH 564.

²³ Wolf, *Geschichte der Mensural-Notation*, pp. 141-146, 174, 305-313, and especially 340-349, 370-373; Apel, *The Notation of Polyphonic Music*, pp. 126-144, and especially 405-406; Robert Davis Reynolds, "Evolution of Notational Practices in Manuscripts Written between 1400 -- 1450", Ph.D. thesis, Ohio State University, 1974, pp. 66-73. An extensive discussion of the use of coloration in relation to diminution in CH 564 is found in Günther, 'Die Anwendung der Diminution in der Handschrift Chantilly 1047', pp. 1-21 and *eadem*, 'Der Gebrauch des *Tempus perfectum diminutum* in der Handschrift Chantilly', pp. 277-297. For coloration used in MOe5.24, *vid.* Stone, "Writing Rhythm in Late Medieval Italy", pp. 92-98.

²⁴ Wolf, *op. cit.*, p. 174.

Table 4.1: Coloration types in CH 564 and MOe5.24.²⁵

Coloration type	Ink colour	Occurrences
Type 1a: imperfecting 3:2 Sbr (<i>minima</i> equivalent)	Red	CH 564 2, 4, 7, 11, 13, 19, 23, 24, 27, 28, 29, 31, 34, 35, 36, 37, 38, 40, 42 ²⁶ , 44, 45, 49, 50, 52, 53, 54, 55, 57, 60, 61, 62 (+O), 64, 65, 66, 68, 70, 72, 73, 74, 75, 76, 77, 80, 81, 90, 91, 92, 93, 97, 98, 99, 101, 104, 106 (@Br only), 107, 109, 110, 111 (+C=C); MOe5.24 4, 6, 13, 15, 16, 18, 20, 22, 23, 25, 31, 32, 35, 42, 46, 48, 50, 53, 62, 65, 68, 72, 74, 75, 76, 79, 81, 82, 102
	Void black	CH 564 67, 69, 70; MOe5.24 2, 3, 7, 9, 10, 41, (58), 69, 73, 85, 89, 91, 96, 104.
Type 1b: perfecting/augmenting (2:3 Sbr) (<i>minima</i> equivalent)	red	CH 564 5, 33, 43, 48, 63, 105*, 113 (@Br only); MOe5.24 27, 61, 72, 73, 74
Type 2a: 3:2 Min/Smin+	Void black	MOe5.24 11, 14, 28, 43 (Smin only), 63, 84, 88, 93, 95, 98, 99, 100;
	red	CH 564 1, 9*, 25 (d), 71, 75 & 76 (=2:1 with \circ); MOe5.24 18, 20, 24, 36 (\blacklozenge), 60, 62, 77, 80?, 82  (\blacklozenge), 90, 97
Type 2b: 2:3 Min/Smin	red	CH 564 69; MOe5.24 18, 20
	Void black	MOe5.24 62
Type 3: 4:3 Min	Void red	CH 564 4, 35, 36, 37, 42, 55, 57, 68, 70, 72, 75, 76; MOe5.24 16, 22, 32, 48, 63, 79
	Void black	MOe5.24 94.
	red	CH 564 10, 39 (on 2:1); MOe5.24 34.
Type 4: 2:1	Void black	CH 564 71 (Min only), 72
	red	CH 564 47*, 54 (Smin); MOe5.24 17*, 48
Type 5: Compound (9:4 = 3:2 x 3:2)	Void red	CH 564 71 (Brevis only), 76 (relative to red in \circ), 77?, 110; MOe5.24 62 & 102.
Type 6: Particoloration	Brevis+ ²⁷	MOe5.24 23 & 62 (b/w)
	Semibrevis+ ²⁸	CH 564 69 (b/w), 77 (r/vr);
Type 7: Special	Red	CH 564 42 (Smin), 67* (1:2), 77 (tenor); MOe5.24 29 (Smin).
	Void black	CH 564 68=MOe5.24 79 (special note shape);

Coloration Types 1a and 1b represent complementary opposites (as inverse proportions), as do Coloration Types 2a and 2b. The first four types are related semantically in that they express the relationship of 3 to 2 or vice versa, although *minima* equivalence in Types 1a and 1b distinguishes them from Types 2a and 2b. Types 1a and 2a represent diminution, Type 1b and 2b augmentation. Types 3 and 4 represent discreet meanings that are separate from

²⁵ An asterisk denotes coloration whose meaning is explained by an canon.

²⁶ Also uses full red *semiminima* as half a *minima*.

²⁷ Indicates only durations greater than a *brevis* are particoloured.

²⁸ *Semibrevis* or greater is particoloured.

all previous types semantically but not conceptually through their property of diminution. Types 5, 6 and 7 involve complex relationships determined by compounding the effect of Types 1-4, or association with special note shapes or verbal instructions.

Type 1a coloration is the oldest and most common form of coloration which effects a *sesquialtera* proportion at the *longa*, *brevis* and *semibrevis* level through the imperfection of perfect durations. It appears in two guises: either full red or void black note shapes. It has been suggested that the variation between red and void black coloration is indicative of nationalistic lines of division,²⁹ although the source situation would scarcely support such a proposition in light of the prevalence of both types of coloration in sources copied by Italian scribes. Whether red or void black coloration was used may have had more to do with scribal preferences and resources or demands of the repertoire on notational process. Type 1a coloration has the property of *minima* equivalence between colorated and non-colorated notes. This factor also equips this type of coloration as an alternative to changes in mensuration through mensuration signs. This occurs principally in [2,3]. Indeed, there is an exchange of mensuration signs for coloration and vice versa between multiple transmissions of certain works that supports the semantic equivalence of both devices. I discuss particular instances of the exchange of coloration and mensuration signs in the next chapter. However, when prolation is minor, an equivalence of *semibreves* also occurs. This situation results in special circumstances related to augmented notation, which will be discussed below.

Type 1(=1a+1b) coloration and its property of *minima* equivalence has a special role in the notation of the *ars subtilior* in relation to the processes of *syncopa*. It is demonstrable that scribes and composers associated with this repertoire used the property of Type 1 coloration as a substitute device for the processes of *syncopa* involving the p.d. and p.p. At the same time, this process, which will be henceforth referred to as *syncopa colorata*, greatly expanded the possibilities in the division of perfections into imperfect durations interpolated by the inherently perfect durations.

While several works use groups of colorated notes in regular *tempus* groupings, several interpolate these groupings with black notes, giving the appearance of an isolated colorated *semibrevis* here, a colorated *brevis* there. Coloration serves a double purpose. It indicates a duration that could not be contextually indicated in regular black notation. It also clearly shows the division of perfections in *syncopa*, so that in [2,3], for example, the appearance of

a colorated *brevis* at the beginning of a passage is complemented by a colorated *semibrevis* appearing after a series of interpolating black notes. It plausibly demonstrates the limits of the *syncopa* by framing black perfections that are sung against the tempus and prolation boundaries, which are frequently maintained in other parts of the polyphonic texture, inherent to the *integer valor*. The realignment of all parts after the colorated *semibrevis* would arguably act as a signpost to the performers of complex polyphonic lines.

Although most examples of *syncopa colorata* are limited to divisions at the *semibrevis* level, the notation of Jacob de Senleches especially and to some extent Trebor utilise the property of *minima* equivalence inherent to Type 1a coloration to their advantage by using isolated colorated *minime* in a process which supplants the device of the p.d. in *syncopa*. Figure 4.1 shows a diplomatic copy (which also reproduces text underlay) of the beginning of Jacob de Senleches' *En attendant esperance* which contains four instances of *syncopa colorata* in the space of twelve and a half *breves* in [2,3] (cf. Vol. II, App. A, No. 37). Each *syncopa* group is shown by a group of conjoined arrow heads which are labelled A-D.

Figure 4.1: *Syncopa colorata* in the beginning of S in Senleches' *En attendant esperance* (MOe5.24).

En attendant esperance confort lhou me qui veut
 En attendant esperance confort en a ten dant

Group A in Figure 4.1 is an example of *syncopa colorata* commonly found in the repertoire where the last red *semibrevis* is separated by a pair of black *minime* (the second of which must be altered). Group B shows the less common use of *syncopa colorata* at the *minima* level where an imperfect *semibrevis* is completed by the initial red *minima pausa* and the final red *minima*. Changing the colour of this *minima* produces two effects. In the first instance it prevents the alteration of the *minima* if, as a black *minima*, it was paired with the previous black *minima*, and, consequently, it forces the aforementioned black *minima* to imperfect the last *semibrevis* of the previous *binaria c.o.p.* Group C sees the syncopation of a red perfection by a single black *minima* which subsequently remotely-imperfects the next *brevis* (relationship shown in Figure 4.1 by a dashed slur). The use of a black *minima* in a passage of red notes conveys the need for this note to imperfect the next black *brevis*. The situation also demonstrates a playful inversion of coloration relationships. Group D illustrates a more

²⁹ Richard Rastall, *The Notation of Western Music*, London, 1983, p. 82.

advanced form of *syncopa colorata* where void red *sesquitercia* note groups are interpolated by regular black *semibreves*. The result is a temporary displacement of one-and-a-half *minime*.

I have previously argued that the process of *syncopa colorata* at the *minima* level is a particular trait of Jacob de Senleches' notational style, a position which is supported by the preservation of this special device in many of his works in their collective transmissions alongside works which use *syncopa* at the *minima* level effected by the p.d.³⁰ The observation that the same device is preserved in Trebor's *Se July Cesar* is not detrimental to my position (*vid.* Vol. II, App. A, No. 39). The styles of Senleches and Trebor show particular relationships that I view as indicative of a close musical if not personal relationship between these two composers. This is particularly the case in Senleches' earlier ballade *Fuions de ci* (Vol. II, App. A, No. 17), which laments the death in September 1382 of Alionor of Aragón, Queen of Castile, and Trebor's *En seumeillant m'a vint une vesion* (Vol. II, App. A, No. 39), which celebrates King John of Aragón's Sardinian expedition in 1388. The likely presence of Senleches in the employ of Alionor in the early 1380s and Trebor's close ties with her king-brother at Aragón may be sufficient grounds for proposing contacts between these composers in this decade. But the stylistic similarities of Senleches *Fuions de ci* and Trebor's *En seumeillant* also support this proposition.

Both works are composed in minor prolation, *Fuions* in perfect *tempus* and *En seumeillant* imperfect. A constant feature of both works is the syncopation of one or more voices. Admittedly, Senleches' work is much more liberal in its use of *syncopa* in all voices. It also uses coloration to indicate imperfect *longe* and *breves* to create a further level of syncopation. Trebor's ballade, on the other hand, makes no use of coloration and there are only occasional episodes where the T employs syncopation beyond the *semibrevis*. Common features, however, link these two works. Both works use pre-cadential melodic figures involving interlocked descending thirds, or a scale descent in *semibreves* that are displaced by one *minima*. Both works fragment the melody with rests, resulting in specific words being sung on notes separated from the surrounding phrases by rests. Beyond the level of stylistic features common to a particular composer, both works access a broader set of stylistic features, which might be called the syncopated style. In its purest form, this style does not employ devices associated with the *ars subtilior*, but it makes frequent use of *syncopa* techniques which often result in a blurring of the mensuration. This is witnessed in cadences

³⁰ Stoessel, *op. cit.*, pp. 141-142.

whose resolution occurs at locations not on the first perfection of the *tempus*. This syncopated style is also replicated in Trebor's *Se Alixandre et Hector* (Vol. II, App. A, No. 40). These distinct stylistic similarities and the use of a rare notational device suggest points of contact between these two composers. Whether these points of contact are direct (personal) or indirect (cultural) is a matter for future investigation.

Type 1b, augmenting or perfecting coloration with *minima* equivalence occurs in minor prolation. It has a special, but by no means universal, association with works in *tempus perfectum diminutum*. Semantically, this type of coloration is identical to the p.p., although it clearly serves in the ambivalent role of a proportional signifier, dependent, as is the case with Type 1 coloration, on the mensural context.

Type 2a coloration involves the use of full red, void black or void red coloration with a *sesquialtera* relationship at the *minima* level. Type 2b coloration denotes the opposite relationship of 2:3 at the *minima* level. Both forms of coloration are notable for their extension of *ars nova* principles of coloration to the level of the *minima* and *semiminima*. However, a level of ambiguity is also introduced into the notational record where the red *minima* in Type 2 (=2a+2b) coloration is indistinguishable from Type 1 coloration based on its appearance. The problem of this ambiguity can be inferred from the particular effort taken by the scribe of Tn J.II.9 to avoid the notation of *sesquialtere minime* in preference to an extrinsic proportional indicator. Context, however, plays an important role in the meaning of this form of coloration when it occurs in the remainder of the repertoire.

Table 4.1 (*vid.* p. 195) does not detail the use of coloration in a third principal source of the *ars subtilior* Tn J.II.9. In this source, coloration is for the greater part confined to Type 1a, although Type 2a coloration is found in nine chansons³¹ but only when these colorated passages contain *semiminime*. Elsewhere in this manuscript, passages requiring *minime* to be sung in a *sesquialtera* proportion use the proportion sign 3 or $\frac{3}{2}$ except in the cases where mensuration signs connected to a canon are employed instead. I suggest that these notational idiosyncrasies developed out of a scribal concern for *minima* equivalence in red coloration (the only form of coloration used in this manuscript) but that the presence of the *semiminime* acted as an additional intrinsic indication of the specific meaning of coloration required therein. The remarkable uniformity of notational devices and idiosyncrasies in this

³¹ *Je ne puis avoir plaisir* (#202, f. 112v), *Se de mon mal delivre prestement* (#230, f. 124v), *Flour de beaute* (#238, f. 128v), *La belle et la gente rose* (#252, f. 133v), *Le mois de may* (#273, f. 143v), *Il faut pour trouver un*

source suggests the strong hand of its music scribe or, as Leech-Wilkinson has broadly suggested,³² the possibility that the whole manuscript represents the works of a single composer. The total absence of concordances with other collections, despite the presence of several literary and musical *topoi*, may suggest that the collection was composed for a singular purpose, ostensibly in relation to the Cypriot Court of the Luisignans.³³

Type 3 coloration involves a *sesquitercia* relationship at the *minima* level, which also results in a false³⁴ *dupla* proportion at the *semibrevis*. Its obviation of the principle of *minima* equivalence of Type 1 coloration marks a significant shift in notational process towards the end of the fourteenth century. Red, void black or, most commonly in the principal *ars subtilior* sources, void red coloration is used to signify this proportional relationship. It is possible that the void red mode of significance developed out of a desire to distinguish Type 3 coloration from Type 1 coloration. Several late fourteenth and early fifteenth century theorists acknowledge the existence of Type 3 coloration,³⁵ although it is not always met with approval. Prosdocimus de Beldemandis, for example, objects to this mode of signification on the grounds of strict mathematical relationships. His comments on this type of coloration, in denying that they can be logically derived, indicate that this form of coloration and its realisation was perpetuated orally by musical practice.³⁶

Type 4 coloration sees the use of void black or red coloration to indicate a *dupla* relationship at the *minima* level. An obvious link between this form of coloration and the fifteenth century form of the *semiminima* as a colorated *minima* can be immediately drawn, although additional observations suggest the instability of this form which resided in its ambiguous nature in relation to Coloration Types 1 and 2. In the two instances only found in CH 564 where void black *minime* are written to indicate *semiminime*, their realisation is assisted by the presence of Type 2a (red) and Type 3 (void red) coloration. As the number of decisions regarding the meaning of void black coloration is thereby reduced, context

bon port (#313, f. 153v), *Je prens d'amour noriture* (#315, f. 154r), *Il n'ai pas celui* (#316, f. 154r), *Quant Dieu vora de qui vient tout grace* (#317, f. 154r)

³² Daniel Leech-Wilkinson, 'Review: *The Codex J.II.9, Torino, Biblioteca Nazionale Universitaria: Facsimile Edition*', *Plainsong and Medieval Music*, vol. 10, no. 1, 2001, pp. 91-94.

³³ *Vid.* Richard H. Hoppin, 'The Cypriot-French repertory of the Manuscript Torino, Biblioteca Nazionale, J.II.9', *Musica Disciplina*, vol. 9, 1957, pp. 79-125; Barbara Wiemes, 'Historical figures from Cyprus mentioned in the Manuscript Torino J.II.9', in *The Cypriot-French Repertory of the Manuscript Torino J.II.9*, eds U. Günther and L. Finscher, Neuhausen-Stuttgart, 1995.

³⁴ False because the relationship between the prolation of the black and red *semibreves* is not preserved. As Type 2 coloration occurs exclusively in works with major prolation, the change of the prolation in a passage of Type 2 coloration is always in a minor prolation (relative to the *semibrevis* in Type 2 coloration).

³⁵ *Vid.* Stoessel, *op. cit.*, pp. 143-144.

coupled with repertorial knowledge may have been sufficient to render their meaning. In the four cases of red *dupla* coloration in CH 564 and MOe5.24, two instances (CH 564 47 and MOe5.24 17) also contain a canon which verbally specifies the meaning of this coloration. While the lack of additional signifiers may be a factor in the inclusion of a canon and, despite the fact that CH 564 54 contains red coloration that must be rendered as either Type 1a or Type 4 relationships without verbal clarification, the presence of canons suggests that this form of coloration was far from an established notational norm. At the same time, the lot of this particular note shape, especially in relation to its use to indicate the duration of a *semiminima*, is tied to the scribal struggle alluded to earlier concerning the division of the *minima*. *Dupla* coloration's role relative to the *semiminima* must be regarded as one facet in notational experimentation, which, despite an apparent but teleological potential, appears only to succeed as a dominant form after the third decade of the fifteenth century.

Type 5 coloration is compound coloration. Six instances can be distinguished in MOe5.24 and CH 564, all making use of void red coloration. Type 5's coloration of coloration, that is the voiding of red coloration, is distinct from Type 3 void red coloration. As Type 1a coloration prevents the division of the *minima* by coloration, and Type 2a coloration consists solely of *sesquialtera* relationships at all levels of mensuration, Type 5 coloration marks a compromise where red coloration retains *minima* equivalence of Type 1a coloration, while the application of void coloration functions as Type 2a coloration. Examples of this form of coloration may be found in CH 564 110 and MOe5.24 102.

Type 5 coloration also exists as a double application of Type 2a coloration that results in a 9:4 proportion in relation to the *minima*. Perhaps the most interesting example of this compound coloration occurs in two out of three transmissions of Philipoctus de Caserta's *Par les bons Gedeon et Sanson*. In the S at BB. 59-60 (Vol. II, App. A, No. 33), two sources, CH 564 and Tn T.III.2 transmit void red *ternaria* indicating that three imperfect *breves* must be sung in the duration of two perfect *breves* in the mensuration [2,3]. The implication is that there is equivalence between black and red *breves*. In the third transmission of this work found in MOe5.24, the same *ternaria* is written merely using red ink, the implication being that red *breves* are also sung in a 3:2 proportion. Another example of this latter variation may be observed in the S of Matheus de Perusio's *Le*

³⁶ Stoessel, *op. cit.*, p. 143-144.

greynour bien (MOe5.24 62) at BB. 62-64 where it is applied at the *minima* level (*vid.* Vol. II, App. A, No. 41).

Type 6 coloration is particoloration, or the half-coloration of a single note form.³⁷ This coloration is always executed with a vertical division of the body of the note shape, so that the left side is drawn in one colour of ink, the right in another. The particoloration of the *semibrevis* is unique to two works that occur in CH 564 ascribed to Senleches and Rodericus (as S. Uciredor) respectively. In Senleches' *Je me merveil* a black and white *semibrevis* indicates the duration of two-and-a-half *minime* in [2,3]. In Rodericus' *Angolorum psalat*, a half-void red *semibrevis* indicates the duration of one-and-three-quarters *minime*, through the combination of Type 1a and Type 3 colorations.

Type 7 coloration involves a group of compositions whose notation use coloration in a special role. Jacob de Senleches' *La harpe de melodie* (Vol. II, App. A, No. 42) is accompanied by a canon which, besides indicating the resolution of a second canonic voice, specifies that black and white notes in the S are sung at half their usual duration. The *minime* of red notes in the S are equivalent with the black *minime* in the T. A similar relationship exists in the relationship between black and red notes in Rodericus' *Angolorum psalat* where red *minime* in the T are equivalent to black *minime* in the S, but black notes in the T only are sung at half the duration of their red counterparts. The interpretation of this relationship is not readily apparent to the reader of the notation in the form of a canon, although the situation of a portion of the S's text laden with biblical references below the T, *Retro mordens ut fera pessima* ("Biting back like the fiercest of beasts"), may suggest the unusual relationship between colorated and non-colorated note shapes in the T.³⁸

The prominence of Coloration Types 1-3 in practice is clearly demonstrated in Table 4.1. While several ink types are used across several different Coloration Types, their distinctive meaning, with some decision-making and experimentation, is arrived at firstly in relation to their context denoted by mensuration and, secondly, the presence of other forms of coloration or notational devices such as special note shapes and/or mensuration signs. Scribes and composers, in seeking means by which they could notationally represent their intentions, also used additional meanings of coloration, but as the scribal record indicates, often clarified their intention by the application of verbal instructions.

³⁷ Cf. Stoessel, *op. cit.*, p. 146.

³⁸ NORS S. Josephson, 'Rodericus, Angolorum psalat', *Musica Disciplina*, vol. 25, 1971, pp. 113-126.

Before proceeding to a discussion of the role of special note shapes in the notation of the *ars subtilior*, mention should be made of one further notational development that can be observed in the notational record of the *ars subtilior*. The phenomenon of substitute coloration involves the use of mensuration signs in quick succession in a procedure that might otherwise be expressed through coloration. A clear example of the exchange of coloration and mensuration signs occurs in the collective transmissions of Philipoctus de Caserta's *En remirant*. In CH 564 and Pn 6771, void red Type 3 coloration is used in the S. In the MOe5.24 transmission of this work, instances of this proportional relationship are written in black notation preceded by the *sesquitercia* mensuration sign \circ (*vid.* Vol. II, App. B, No. 15, *Variants* S 12.1, Ct 5.4, T 14.2 *et passim*). The same equivalence of meaning is also witnessed in the two transmissions of Johannes Suzoy's *Prophlias, un des nobles de Roume* (*vid.* Vol. II, App. B, No. 43, *Variants*). While the reading at S 11.1 and 38.1 in CH 564 (f. 35v) employs the sign \circ to indicate the *sesquitercia* proportion, the fragmentary Lowlands source NL-Uu 1846² (f. 20v) employs void red Type 3 coloration.

The previous paragraphs, in their systematisation of coloration in the music of the *ars subtilior*, also demonstrate several weaknesses that may have been the catalysts for further experimentation. Evidence suggests that before the stylistic demands of the *ars subtilior* style, Type 1a coloration was only occasionally used. On the basis of extant repertoire and its historical references already detailed in Chapters 2 and 3, all remaining Coloration Types appear to have been developed in the last quarter of the fourteenth century in response to musical developments which sought to express a greater number of temporal divisions or proportional relationships. The mere diversity of meanings of coloration suggests experimentation in notational devices that could hardly confine itself to the single device of coloration. In parallel and often in concert with developments in coloration techniques, composers sought to express temporal divisions using other principles of notation. These additional but no less important devices are the use of special note shapes and mensuration signs. While discussion of the latter device is reserved for the next chapter, this chapter will continue with an examination of perhaps the most complex element of the various notational practices associated with the *ars subtilior*: special note shapes.

4.2. Special note shapes

One of the most fascinating elements in the notation of the music of the *ars subtilior* is the proliferation of special note shapes used to denote various durations. Attention³⁹ has been drawn to a remark on the diversity of note shapes made by Walter Odington in his *De speculatione musice* where he wrote there are:

...magna figurarum diversitas quae in melodiis istius temporis reperitur quia quot
<sunt nota>tores tot sunt novarum inventores figurarum.⁴⁰

However, despite his colourful simile, it is unlikely that the early fourteenth century Englishman Odington was referring to note shapes of the *ars subtilior*.⁴¹ It is possible that he was referring to new notes such as the *minima* and the swallow-tailed *semibrevis* of English notation practice.

On the other hand, Guido's well-known ballade *Or voit tout en aventure* (CH 564, f. 25v; *vid.* Vol. II, App. A, No. 44) appears to refer to this aspect of notational development in the later fourteenth century if one considers the use of litotes in the text in conjunction with the special note forms used to record the music itself.⁴² Line 10 of the text of *Or voit*

³⁹ *Vid.* Busse Berger, *op.cit.*, pp. 179-180.
















⁴⁰ "...a great diversity of note shapes which are discovered in the today's melodies since there are as many writers of music as there are inventors of new note shapes."; F. Hammond, *op.cit.*, p. 42.

⁴¹ Cf. Oliver B. Ellsworth, (ed.), *The Berkeley Manuscript, University of California Music Library, MS. 744 (olim Phillipps 4450)*, Greek and Latin Music Theory 2, Lincoln and London, 1984, p 125, fn. 8.

⁴² The text with translation is as follows:

<i>Or voit tout en aventure</i>	Now everything seems left to chance
<i>Puis qu'[a]insi me conveient fayre</i>	Since I must thus compose
<i>A la nouvelle figure</i>	with the new figures
<i>Qui doit a chascun desplayre.</i>	which displease everyone.
5 <i>Que c'est trestout en contraire</i>	It is completely contrary
<i>de bon art qui est parfayt:</i>	To the good art which is perfect.
<i>Certes se n'est pas bien fayt.</i>	Certainly, if it is not done well.
<i>Nos faysons contre nature</i>	We compose against nature
<i>de ce qu'est ben fayte deffayre;</i>	to destroy that which is done well.
10 <i>Que Philipe qui mais ne dure</i>	For which Philippe, who just died,
<i>Nos dona boin examplaire.</i>	gave us a good example.
<i>Nos laisons tous ses afayres</i>	We lay aside all his rules
<i>Por Marquet le contrefayt.</i>	Because Marchettus does the opposite.
<i>Certes se n'est pas bien fayt.</i>	Certainly, if it is not done well.
15 <i>L'art de Marquet n'a mesure,</i>	Marchettus' art has no measure
<i>N'onques riens ne sant parfayre;</i>	and never can anything be perfected.
<i>C'est trop grant outrecuidure</i>	It is very presumptuous
<i>D'ansuir et de portayre</i>	to follow and to draw
<i>Ces figures, et tout traire</i>	these figures, and all varied, drag away
20 <i>L'oull varieus de bon trayt.</i>	the eye from the good manner.

tout suggests that it was written after the death of Philippe de Vitry (1291-1361), although how much later remains to be determined. Although the inclusion in the ballade's text of the names of two contemporary, leading musician-theorists Marchettus de Padua and Philippe de Vitry may be due more to the influence a musico-literary *topos* as also found in works such as Jacopo da Bologna's *Oselletto selvazo*,⁴³ several elements of the text refer to musical notation. On its surface, the text of *Or voit tout* complains that the musician must use new note shapes to compose music, figures which meet with the disapproval of many because they appear contrary to the art of both De Vitry and Marchettus.


Yet, *Or voit tout* is notated in the "good art" or mensural notation of De Vitry. It also uses two additional special note shapes:  and .⁴⁴ Both figures represent the duration of half a *minima*, that is a *semiminima*, which at first glance would support a literal reading of the text. However, by noting that each figure is used in a specific manner which implies a different division of the *semibrevis*, a clue to the more subtle meaning of the text of *Or voit tout*, which is on an equal footing with its rhythmic subtleties, becomes apparent. The figure  represents a division of the perfect *semibrevis* into two groups of three (as    where  =  ) and the figure  a division into three groups of two (as     ). Statements concerning their apparent redundancy have usually arisen more out of a concern for their transcribed meaning, rather than the meaning of these note forms in the context of their original notation.⁴⁵ The very fact that such fine distinction in the division of musical time

Certes se n'est pas bien fayt.

Certainly, if it is not done well.

For other readings, translations and discussions of this work cf. Günther, 'Das Ende der ars nova', pp. 107-108; Stone, 'Che cosa c'è di più sottile riguardo l'ars subtilior?', pp. 6-7; *eadem*, "Writing rhythm in late medieval Italy", p. 170; Stoessel, *op. cit.*, pp. 138-139. One should note the Middle French reading of the refrain given here reflects that found in its sole transmission in CH 564. While preserving the original reading, Günther proposed that *se* was a phonetic variant of the demonstrative pronoun *ce*, in 'Das end der ars nova', p. 107, fn. 20. *Se* is silently emended to *ce* in Greene's edition in *French Secular Music: Manuscript Chantilly Musée Condé 564, First Part*, pp. 80-82, notes: p. 155. This reading is also adopted by Stone, 'Che cosa c'è di più sottile riguardo l'ars subtilior?', pp. 6-7. *Se* might be read as a phonetic variation of the adverb *si* (<Latin *sic*, "thus"), which is often common in the Picard dialect, and assumes that the subject neuter pronoun (*il*) has been suppressed. However, I have chosen to translate the refrain simply by attributing *se* with its usual significance of a conditional conjunction ("if"). This reading maintains the ironic reading of this work and adds an additional level to the reading by suggesting that while the art of the new note shape might be poorly handled by some and criticised for several reasons, this is not the case when in the hands of Guido. Concerning the translation of *afayres*, I have extrapolated the idea of *afayre* as "something to be done" to "rule" in the broadest sense.

⁴³ Nino Pirrotta, (ed.), *The Music of Fourteenth Century Italy*, Corpus Mensurabilis Musicae 8, Amsterdam, 1954, p. ii; Richard H. Hoppin, *Medieval Music*, p. 445.

⁴⁴ *Semiminime* () are also found in this work, but always in single pairs.

⁴⁵ Cf. Anne Stone, 'Che cosa c'è di più sottile riguardo l'ars subtilior?', p. 11.

is clearly intended in the original notation through the use of these new figures as an extension of *ars nova* notational processes supports an ironic reading of the text.

This reading of *Or voit tout* is enhanced by considering the evolution of a sixth simple note shape during the fourteenth century. The *semiminima* shared with the *minima* in the *ars nova* mensural system the property of equivalence between mensurations. Yet, its absence or formal variation in theoretical and practical sources of the fourteenth and fifteenth centuries suggests that the *semiminima*'s development was neither uniform nor universal in this period.⁴⁶ Guillaume de Machaut appears to have never used the *semiminima*. In as much as it attests to the variability of forms as well as the lack of scribal intervention, Codex Chantilly, for example, contains no less than ten different note shapes which express the duration equal to the *semiminima* (See Table 4.4, p. 217). This variability is replicated throughout theoretical literature (See Table 4.3, p. 213). This situation is also illustrated by the presence of a different *semiminima* shape in each of the three transmissions of Philipoctus de Caserta's *En remirant*.⁴⁷ While the *semiminima* eventually achieved formal stability in the fifteenth century, despite continued oscillation between the flagged and colored *minima* types,⁴⁸ its development in the fourteenth century is closely tied to the processes of special note shapes through its differentiation from the *minima* by the addition of a flag, tail, or change of colour. Guido's *Or voit tout* is but another (even if relatively early) manifestation of this experimentation. The difficulty with the *semiminima* demonstrated by theoretical and practical records was itself responsible for the processes of augmented notation.⁴⁹

⁴⁶ Cf. Stoessel, *op. cit.*, pp. 147-48, where I draw attention to the absence of the *semiminima* in the writing on music by Johannes de Muris and the difficulty of attributing the invention of the form to Philippe de Vitry on the basis of the disparate *Ars Nova* treatise tradition. Q.v. Michael Walter, 'Kennt die *Ars nova*-Lehre die *Semiminima*?', *Acta Musicologica*, vol. 66, no. 1, 1994, pp. 41-58. One should take into account the cautious note of the late fourteenth century anonymous author of the *Quatuor principalia musicae* which includes the well-known statement: *Qui autem dicunt predictum Philippum crochutam vel semiminimam aut dragmam fecisse, aut eis consensisse, errant, ut in motetis suis intuenti manifeste apparet.* ("He, who however says that the aforementioned Philippe <de Vitry> made or approved of the crochet, *semiminima* or *dragma*, is incorrect, as is clearly apparent to anyone considering his motets."); Luminita Florea Aluas, "The *Quatuor principalia musicae*: A Critical Edition and Translation, with Introduction and Commentary", Ph.D thesis, Indiana University, 1996, p. 382.

⁴⁷ *Vid.* Chapter 3, p. 160.

⁴⁸ Charles Hamm concluded that the shift from flagged to colored *semiminime* occurred in the works of Du Fay c. 1431, in *A Chronology of the Works of Guillaume Dufay based on a Study of Mensural Practice*, Princeton Studies in Music 1, Princeton, 1964, pp. 26-27; q.v. *idem*, 'Dating a group of Dufay's works', *Journal of the American Musicological Society*, vol. 15, no. 1, 1962, pp. 65-71. However, according to Hamm (*A Chronology of the Works of Guillaume Dufay*, pp. 53-55), the flagged form was often maintained in augmented major prolation, the colored form in minor prolations.

⁴⁹ Günther, 'Der Gebrauch des *Tempus perfectum diminutum* in der Handschrift Chantilly', pp. 277-78.

The special note shapes⁵⁰ can be explained in terms of a limited number of notational processes. This presents a situation which removes any notion that the scribes of the *ars subtilior* were inconsistent and replaces it with the proposition that these notational systems resulted from creative problem solving and extension of an established system of notation in order to represent a greater variety of rhythmic nuances. Besides the device of coloration, as discussed above, notational processes in relation to special note shapes can be reduced to two systems: the first is proportional, that is multiplicative and divisive; the second is arithmetic, in that it employs additive or subtractive processes.

Both systems involve the modification, and thereby differentiation, of the set of basic note shapes outlined at the beginning of this chapter. Already, the use of coloration to modify intrinsically the nature of these same note forms has been described. In the case of special note shapes of a proportional nature, intrinsic differentiation occurs through the addition of stems, of flags, of *virgule* (short curved stems), or other shapes. Arithmetic note shapes on the other hand involve the use of various parts of simple note forms, which are in turn composed into a single shape. But this group also includes a sub-group whose note shapes are created by the graphical subtraction of part of a simple note. Both arithmetic sub-groups – composite and reduced respectively – involve the addition or subtraction of an invariable unit from a whole.

A central problem in the discussion of special note shapes is determining their ethnographic origins. From a practical perspective, special note shapes are not confined to sources of the *ars subtilior* but are frequently found throughout collections of *trecento* repertoire. Yet, the unusual note shapes in the *trecento* repertoire, despite their general graphical affinities, seldom achieved the same degree of complexity with respect to the division of musical time as in the repertoire of the *ars subtilior*. Any observation made in the present day is also skewed by the fact that most of the collections of the *ars subtilior* repertoire originated in Italy from the hands of Italian scribes. There is a lack of significantly complete collections from this period copied north of the Alps which might be used to test in the first instance notions that special note shapes are exclusively Italianate. At the same time most collections of *trecento* music are considerably later than the composers whose works they represent. The diversity of special note shapes preserved by Italian scribes

⁵⁰ Cursory treatments of special note shapes are found in Apel, *Notation of Polyphonic Music*, pp. 371-73; *idem*, *French Secular Music of the Late Fourteenth Century*, p. 8; Reynolds, "Evolution of Notational Practices in Manuscripts Written between 1400 -- 1450", pp. 75-79.

from work to work in the sources of the *ars subtilior* style, itself suggests that the situation is perhaps more complex than has been hitherto proposed. It appears more likely that the situation represents a set of reciprocal influences whose origins lie in notational and musical developments on both sides of the Alps and beyond. Theoretical literature, though often articulated by Italians, is not so one sided in its outlook and bespeaks of several note systems in terms of their ethnographic basis. Thus, the remainder of this section challenges the appellation “Italianate” which is frequently applied to these special note shapes. The central proposition of what follows is that the description Franco-Italian can be applied to many of these special note shapes in order to account for their apparently broad distribution and various semantic guises.

Several contemporary theorists acknowledged the existence of additional note shapes beyond the standard 5 (or 6 including the *semiminima*). The use of an additional upwards or downwards stem to differentiate note shapes was one particular form of *differentia* which had its basis in the mensural system in relation to the properties of various ligatures and *longa-brevis* forms.⁵¹ As already discussed in Chapter 1, it was through the addition of a superior stem to the *semibrevis* that the *minima* evolved in the second phase of *ars nova* notation. The early use of inferior stems is evidenced in the music accompanying the *Roman de Fauvel* in Pn 146, and it and the superior stem also formed the basis of distinguishing durational patterns in the earliest musical notation of the *trecento* according to the *via artis*, that is when durational patterning deviated from the prescriptive patterns associated with undifferentiated *semibreves* of the *via nature*.⁵²

Through an analogy with the device of the superior stem, theorists sought to explain the creation of the new note shapes of the *semibrevis caudata* (♠) and *dragma* (or *fusa/fuisel*) (♣). In a lengthy digression in the commentary on the section of the *Expositiones* regarding distinguishing perfect and imperfect durations from one another, Prosdocimus de Beldemandis in 1404 quite explicitly refers to a practice of creating new forms using the tail or stem when he writes:


⁵¹ Gallo, ‘*Figura and regula: Notation and theory in the tradition of musica mensurabilis*’, p. 46.

⁵² *vid.* Vecchi, *op.cit.*, pp. 97ff. For a practical manifestation closely resembling this system, one should look to the manuscript, Rome, Biblioteca Apostolica Vaticana, Rossiano 215 (=Codex Rossi). Q.v. Chapter 5, p. 252 of the present study.

*Possumus etiam per appositionem caudarum extraneas figuras fabricare, hoc est extraneorum valorum, et hoc bene et cum rationibus satis evidentibus...*⁵³

Concerning the effect of various tails, Prosdocimus offers the following statement:

*Sed cum cauda superius tracta et cauda inferius tracta sint opposita et cauda superius tracta habeat diminuere, ut patere bene consideranti, sequitur quod cauda inferius tracta habeat suum oppositum operari, scilicet augmentare...*⁵⁴

In a passage describing the logic behind the value of the figure , which its author terms a *fusa*, the third Berkeley Anonymous treatise in 1375 states that:

*Nam sicut cauda sursum alleviat aliquando pro medietate, sic cauda deorsum tendens debet pro medietate per oppositum aggravari, si sursum tollat per oppositum deorsum debet augere.*⁵⁵

Using this principle, the theorist then explains that the *fusa* or *dragma* should have the duration of one-and-a-half *minime*, adding that the downward tail can also add a third of the value to the figure.

While Prosdocimus' use of *diminuere* ("to diminish") and *augmentare* ("to augment") gives no explicit proportional relationship that defines how he believes either stem diminishes/augments the note, he does refer to the practice of his contemporaries, with a great amount of vituperation for their *irrationabilis truffe* ("thoughtless swindles"), who assign proportional diminution to upper or lower stems. Furthermore, his discussion of these figures occurs in the context of a response to his "contemporaries' extraneous methods for proportioning figures" (Chap LXI, sent. 101). The terms *alleviare* ("to lighten"), *pro medietate* ("by a half"), *aggravari* ("to make heavy") and *augere* ("to increase") used by the Berkeley Anonymous cannot be easily singled out as terms of proportionality, and may indeed tend towards ambivalence. Perhaps the only treatise to articulate the meaning of note shapes clearly in relation to proportional concepts occurs in the case of the early fifteenth century *Regule de Contrapunto* by a certain Antonio de Leno. This vernacular

⁵³ "We are also able by the application of tails to make extraneous note shapes, that is of extraneous durations, and this is good and satisfactory in its evident rationality..."; Gallo, *Prosdocimi de Beldemandi Opera 1: Expositiones*, chap. LXI, sent. 52.

⁵⁴ "But since the tail drawn above <a note> and a tail drawn below are opposite and the tail drawn above has to diminish, it follows that the tail drawn below has to operate as its opposite, namely to augment..."; Gallo, *Prosdocimi de Beldemandi Opera 1: Expositiones*, chap. LXI, sent. 55.

⁵⁵ "For just as a stem above <a note> sometimes lightens by a half, so too a stem hanging below (a note) ought to do the opposite and make it heavier by a half: if it reduces above, in the opposite manner below it ought to increase"; Ellsworth, *op. cit.*, pp. 126.21-128.2.

treatise sets out various note shapes in a system of notation that has fully succumbed to French *ars nova* principles such as alteration of the *minima* and the p.d.⁵⁶

Although there are difficulties in the single surviving transmission of Antonio de Leno's *Regulae de contrapuncto*, especially in relation to the passage concerning *proportio sesquialtera*, the relationships shown in Table 4.2 are apparent in relation to proportional note shapes.

Table 4.2: Proportional note shapes in Antonio de Leno's *Regule de contrapuncto*.⁵⁷

Proportion (<i>minima</i> level)	Note shape	Comments
<i>Proportio sesquitercia</i>		pp. 32-33.
<i>Proportio sesquialtera</i>		pp. 33-34. Text describes 3:2 proportion at <i>minima</i> level, although the following musical example appears to demonstrate the <i>sesquitercia</i> proportion.
<i>Proportio dupla</i>		pp. 34-35. <i>Croduze che hanno croduzo el revolto de sopra</i>
<i>Proportio superbiciens</i>		pp. 35-36. More correctly <i>proportio dupla superbipartiens tercia</i> (8:3).
<i>Proportio tripla</i>		pp. 36-37. <i>...sono croduze di sopra et hanno la coda de soto despicata senza crocimento nessuno.</i>
<i>Proportio quadrupla</i>		pp. 37-38. <i>...sono croduze di sopra et di soto cola coda langa de soto quanto di sopra collo crocimento a l'una et a l'altra.</i>

The use of stems and flags as indicators of proportional relationships is central to Antonio's system. The upper right-hand flag indicates a 2:1 relationship, the lower stem a 3:1, and the lower flagged stems a 2:1, which when multiplied by the 2:1 relationship evident in the *semiminima*, results in the 4:1 proportion. Through these various *differentia*, significative and therefore semiotic distinctions reflective of proportional concepts are thus achieved.⁵⁸

⁵⁶ *vid.* Albert Seay, (ed.), *Antonio de Leno: Regulae de contrapuncto*, Colorado College Music Press Critical Texts 1, Colorado Springs, 1977, pp. 28-29 (=A. de Leno).

⁵⁷ Page numbers given in the table reflect the location of relative passages in the edition of Seay, *op. cit.*

⁵⁸ At a practical level, the system discussed by Antonio corresponds with that found in Bu 2216 and the keyboard tabulations of FZc 117. For details of Antonio's notation used in Bu 2216, *vid.* F. Alberto Gallo, (ed.), *Il codice Musicale 2216 della Biblioteca Univeristaria di Bologna*, Bologna, 1968, vol. 2, pp. 14-15. On the notation of FZc 117 *vid.* Michael Kugler, *Die Tastenmusik im Codex Faenza*, Münchner Veröffentlichungen zur Musikgeschichte 21, Tutzing, 1972, pp. 23-34.

The strongest argument for the proportional nature of certain special note shapes can be arrived at through the empirical observation of scribal practices. The semantic equivalence of special note shapes and proportions achieved through mensuration signs is demonstrated in the case of the collective transmissions of Philipoctus de Caserta's *En attendant souffrir m'estuet*.⁵⁹ Whereas a 2:3 proportion in [2,3] is indicated in three sources using *dragme*, the fourth source (MOe5.24) sees the same passage written using a proportional mensuration sign and simple black note forms, resulting in the following equivalence: $[\text{C}] \downarrow \downarrow = \text{O} \blacklozenge \blacklozenge = [\text{C}] \downarrow \downarrow \downarrow$. A similar situation occurs in the mensuration [2,3] in passages in Philipoctus de Caserta's *De ma dolour* where in MOe5.24 it is written as three *dragme* but is found instead as three colored *semibreves* in CH 564.⁶⁰ However, the *dragme* in MOe5.24 are ambiguous in their nature, as one may read them as a proportional indicator (3:2) or as arithmetic forms, which, as will be explained below, are equal to two conjoined *minime*.

The consistency of the scribe of Tn J.II.9 should be again noted in this respect. As has been stated above, there is no evidence of the use of Type 3 coloration in this scribe's work. Except in the case of a handful of works which use unusual mensuration signs attached to a canon, *sesquitercia* relationships are expressed either through simple note shapes preceded by the sign O or by using the dragma (\downarrow) and what might be termed the *semidragma* (\downarrow) in the following relationship:⁶¹

$$\downarrow \downarrow \downarrow \downarrow = \downarrow \downarrow = \downarrow \downarrow$$

Table 4.3 collects together known instances of special note shapes discussed by musical theorists of the fourteenth and fifteenth centuries which are based on principles of proportional signification. Thus, it omits arithmetic note shapes, which will be discussed below. I have been careful to preserve the various modes by which the *semiminima* and related forms were indicated in Figures 1-5 of Table 4.3 in order to highlight their diversity.

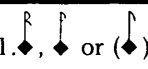
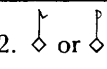










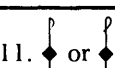

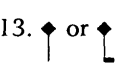
⁵⁹ MOe5.24, f. 20r; CH 564, f. 33v; Pn 6771, f. 84v; GR 197, 3r + Hdc 2387 1v.

⁶⁰ *vid.* S 21.1 and 60.1, Ct 35.2 in Vol. II, App. B, No. 31, *Variants*.

⁶¹ Cf. Reynolds, "Evolution of Notational Practices in Manuscripts Written between 1400 -- 1450", pp. 78-79.

⁶² I am aware that the issue of the *semiminima* and its duration is dependent in *trecento* notations on the *divisiones*. Moreover, the issue of substitute *quaternaria* and modes of writing the *duodenaria* in late works of *trecento* composers is an additional factor, the detailed exploration of which is beyond the scope of the present discussion.

Table 4.3: Proportional special note shapes in French and Italian *musica mensurabilis* treatises from the Late 14th and Early 15th centuries.⁶³

Figures	Value in \blacklozenge	Name	Sources	Comments
1. 	$\frac{1}{2}$ (2:1)	<i>seniminima, crozuda</i> (Leno)	BA2, 126.13-15; TPMI, 229a; Ars D, 76a & 80a; SC, p. 72; A. de Leno, 34.	Leno: <i>proportio dupla</i> (2:1) in [2,3]
2. 	$\frac{1}{2}$ (2:1)	<i>seniminima</i>	ArsM, p. 248; TF 82.4f; tFT 3b.20;	tFT: [2,2];
3. 	$\frac{3}{4}$ (4:3)	<i>addita</i> (BA2); <i>minima imperfecta</i> (TF); <i>seniminima</i> (Anon X)	BA2, 124.3-6; Anon X, 413b; Th. de Campo, 185a; TF: 84.11-14;	Anon X & Theo. de Campo: major prolation
4. 	$\frac{2}{3}$ (3:2)	<i>seniminima</i>	TPMI, CS III, 229a;	
5. 	$\frac{3}{4}$ (4:3)	<i>crozude el revolto de sopra a mane sinistra</i>	A. de Leno, 32;	Leno: major prolation, 4:3
6. 	$1\frac{1}{2}$ (2:3)	<i>fusa, minima caudata sursum et deorsum</i> (Anon X).	BA2, 126.16-18; ArsM, p. 224; A. de Leno, 31. Anon X, 414a.	BA2: major prolation; ArsM: [2,3]; Leno: ex. major prolation; Anon X: [2,3]
7. a.  or b. 	$1\frac{1}{3}$ (3:4)	(<i>fusa</i>)	BA2, 126.18-21; TF 84.6f(<i>vacua</i>); tFT 3b.19 (<i>vacua</i>)	TF: minor prolation; tFT: [2,2];
8. 	2 (3:2 \blacklozenge)	<i>dragma or (fusa); fuises</i> (BN lat. 15128)	ArsM, p. 224; TF 84.4f; SC p. 76; ArsD, CS III, 107a; BN lat. 15128, p. 88.	ArsM: [2,3]; TF: major prolation; SC: [2,3];
9.  or 	$\frac{3}{4}$ (4:3)	(<i>fusa</i>)	ArsM, p. 226 (cf. Anon V, CS III, 394a)	ArsM: <i>cum sit minoris valoris</i>
10. 	$\frac{3}{4}$, $\frac{1}{2}$, $\frac{2}{3}$, $\frac{4}{3}$ (4:3, 2:1, 3:2, 3:4)	<i>minima vacua, minima imperfecta</i>	ArsM, p. 228; TF 88.6f; tFT 3a.6, 3a.3, 3a.4; SC p.73; A. de Leno, 35;	ArsM: $\frac{3}{4}$, major prolation, $\frac{4}{3}$ -[2,2] (augment.); TF: $\frac{2}{3}$, minor prolation; tFT $\frac{3}{4}$ -[2,3], $\frac{1}{2}$ -[3,3], $\frac{2}{3}$ -[3,2]; Leno: <i>duplasuperbiciens</i> (8:3).
11. 	$\frac{1}{2}$ (2:1) (Anon X), $\frac{1}{3}$ (3:1) (Leno)	<i>minima semiminorum</i> (Anon X)	Anon X, CS III, 414a; A. De Leno, 36;	Anon X: major prolation; Leno: major prolation, <i>proportio tripla</i>
12. 	$\frac{1}{4}$ (4:1)		A. de Leno, 37;	Leno: major prolation, <i>proportio quadrupla</i> .
13. 	2 (Leno), 3 (BA2), (5,6)	(<i>semibrevis caudata</i>)	A. de Leno, 31; ArsD, 107a; BA2, 128.8; (BN lat. 15128, pp. 89-91);	Leno, BA2, BN lat. 15128: major prolation;

⁶³ The key to abbreviations used in Table 4.3 are as follows: CS III: Coussemaker, *op.cit.*, vol. 3; Anon X: Anonymous X in: CS III; A. de Leno: A. Seay (ed.), *Antonio de Leno: Regulae de contrapunto*, Colorado Springs, 1977; ArsD = Johannes de Muris, *Ars discantus* in: CS III; ArsM = C. M. Balensuela, *op.cit.*; BA2 = Ellsworth, *op.cit.*; SC = A. Gilles & C. Sweeney (eds), *Anonymus: De Semibrevis Caudatis*, CSM 13, s.l., 1971; TPMI: Prosdocius de Beldemandis, *Tractatus practice de musica mensurabili ad modum Ytalicorum*, in: CS III; Th. de Campo: (Pseudo-)Theodoricus de Campo, *De musica mensurabili* in: CS III; TF = Schreuer, *op.cit.*; tFT = *Tractatulus de figuris et temporibus* in F. Alberto Gallo, (ed.), *Mensurabilis Musicae Tractatuli*, Antiquae Musicae Italicae Scriptores 1, Bologna, 1966.

The realisation of Figures 4 and 5 in Table 4.3 demonstrates a link to the notation employed in *trecento* sources. While the simple *semiminima* (\blacklozenge) is often employed in a duple relationship to the *minima*,⁶⁴ its appearance in groups of three to indicate a *sesquialtera* proportion in relation to the *minima* as either $\blacklozenge\blacklozenge\blacklozenge$ or $\blacklozenge\blacklozenge\blacklozenge$ is a common feature of *trecento* sources.

There is a question of how musical palaeography should begin to regard special note shapes as they appear in musical sources. Johannes Wolf grouped the use of these forms according to the composer of the works in which they appeared.⁶⁵ In his study of *trecento* notational processes, Kurt von Fischer concluded that in general terms the *sesquialtera* group $\blacklozenge\blacklozenge\blacklozenge$ was typical for manuscripts with a Tuscan origin (Fn 26, Lbm 29987, Pn 568 and Fl 87) and $\blacklozenge\blacklozenge\blacklozenge$ was common in northern Italian sources (Pn 6771, Las 184, Padua A).⁶⁶ While von Fischer notes exceptions to these generalisations in Pn 568, Pn 6771 and Fl 87, his and Wolf's observations should be tempered by new methodologies, particularly those demonstrated by John Nádas in his studies of several *trecento* sources, including Pn 568, Pn 6771 and Fl 87. In the case of Pn 568,⁶⁷ the division of the use of either form down scribal lines becomes immediately apparent and suggests less uniformity in this Florentine source than von Fischer wants us to believe.

Von Fischer also comments on the use of the *dragma* in the *trecento* manuscripts Pn 568, Lbm 29987, Fl 87 and Fn 26.⁶⁸ Generally, their meaning is confined to a duration of two *minime*, often in the role of an imperfect *semibrevis* in passages of syncopation in the Italian *tempus imperfectum*.⁶⁹ Although their semiotic nature remains ambiguous, it is possible that duration of the *dragma* in *trecento* notation resides in an arithmetic process through the addition or composition of two simple note forms into one shape, i.e. $\blacklozenge = \blacklozenge + \blacklozenge$. The details of this system are given below. Already in Pn 568, French

⁶⁴ I am aware that the issue of the *semiminima* and its duration is dependent in *trecento* notations on the *divisiones*. Moreover, the issue of substitute *quaternaria* and modes of writing the *duodenaria* in late works of *trecento* composers is an additional factor, the detailed exploration of which is beyond the scope of the present discussion.

⁶⁵ Wolf, *op.cit.*, vol. 1, p. 306.

⁶⁶ Kurt von Fischer, *Studien zur italienischen Musik des Trecento und frühen Quattrocento*, Bern, 1956, p. 119.

⁶⁷ Nádas, "The Transmission of Trecento Secular Polyphony", pp. 261-271.

⁶⁸ von Fischer, *Studien zur italienischen Musik des Trecento und frühen Quattrocento*, p. 120.

⁶⁹ *Vid.* Wolf, *op.cit.*, pp. 308-9. Here, *tempus imperfectum*, often indicated by the *signa divisionis .i.*, is equivalent to the *senaria gallica* (*vid.* Chap. 5, p. 248) which has a ternary division of its two *semibreves*, and is therefore equivalent to the French mensuration [2,3].

notational process is prevalent in those works employing the *dragma* to such an extent that the role of the *pontellus* in delimiting *tempus* boundaries has been lost and the use of the *punctus* assumed the role of the p.d. and p.p. Note, for example, the realisation of the passage in *Sotto verdi fraschetti molt' augelli* by Ser Gherardello da Firenze as transmitted in Pn 568 (f. 26v):

$$[.i.] \downarrow \blacklozenge \downarrow \blacklozenge \downarrow \blacklozenge \downarrow \blacklozenge \downarrow \blacklozenge \downarrow \blacklozenge \downarrow \blacklozenge = \text{g} \text{musical notation}$$

The original notation relies upon the first *punctus* being a p.d. that causes the imperfection of the first simple *semibrevis* by the subsequent *minima*. Figure 4.2 gives the three extant readings from the beginning of the *secunda pars* of *Sotto verdi*.⁷⁰

Figure 4.2: Transmitted readings at beginning of *secunda pars* of Gherardello's *Sotto verdi*.

Fn 26 represents the reading closest to *trecento* notational processes. Unlike Pn 568 and Fn 26, Lbm 29987 makes no use of the *signum divisionis* *.i.*. Furthermore, it appears that the passage in question in Lbm 29987 has actually been rewritten in [3,2], resulting in some changes in the last part of the phrase not found in the other two sources. Pn 568 preserves the *divisio senaria imperfecta* (= [2,3]) indicated in Fn 26, but relies on alteration of the fifth *minima* immediately before the *dragma* and other French notational processes already described above. It is obvious that the reading in Pn 568, as in Lbm 29987, is a subsequent recasting of this mid-century Florentine composition by its scribe that utilises and adapts newer notational processes.

The Florentine manuscripts Pn 568 (after 1408) and Fl 87 (1410-15) all demonstrate the influence of French notational processes through the occasional use of mensuration signs rather than *signa divisionis*, the lack of the *pontellus* and French principles
























⁷⁰ The other readings are found in GB-Lbm 29987, f. 44v and Fn 26, ff. 88v-89.

of alteration and imperfection.⁷¹ The presence of French techniques as far south as Florence, and possibly further, is evident in the first decade of the fifteenth century. The Paduan source Pn 6771 presents an alternation of notation processes along scribal lines that vary between *trecento* and *ars nova* techniques. The presence of the *dragma* in the music of *trecento* sources, whose notation has already succumbed to ostensibly French processes, challenges assumptions concerning the ethnographic origin of this form. Undoubtedly the role of the scribe is a crucial factor in this consideration as is the actual dating of the copying of the source. The scribes of later manuscripts already demonstrate new influences that appear to derive from *ars nova* techniques. This aspect of the source situation questions whether particular note shapes should be referred to as “Italianate”.

Complete lists of note shapes used in the two principal sources of the *ars subtilior* CH 564 and MOe5.24 are given in Table 4.4 and Table 4.5 respectively, with forms grouped accord to their nature. Figures 1a-c, 2, 3, 4, 6d and 10b in Table 4.4 and Figures 1a-c, 2 and 14 in Table 4.5 are note shapes which are used to indicate variously the duration of a *semiminima*. To this group should be added the void black and full red *minime* which, through particular uses of coloration described in the previous section, can also denote the *semiminima*. In Figures 1a, 1c, 2, 3 of Table 4.4 and Figures 1a, 1c and 2 of Table 4.5 the principal differential is a looped flag. However, such a device is not always an indicator of a duple relationship as can be seen from the differing values of Figures 2 and 3 in Table 4.4 and Figure 2 in Table 4.5. The same note shape can also indicate a *sesquitercia* or *sesquialtera* relationship relative to the *minima*. The *dragma* form shown as Figure 6d in Table 4.4 is directly related to Figure 6c in the same table. Both note shapes occur in the same work and rely on the principles of coloration. Figure 6d is the imperfection of Figure 6c.




























⁷¹ Vid. von Fischer, *Studien zur italienischen Musik des Trecento und frühen Quattrocento*, p. 122.

Table 4.4: Special note shapes in CH 564.⁷²

Figures	Value [in \blacklozenge] (proportion)	Mensural context and comments
1. a.  (1), b.  (27,28), c.  (42), d.  (47, 54)	$\frac{1}{2}$ (2:1)	1, 42, 54: [2,3]; 27, 28: [2,3] in 3x2 groups; 47: 2:1 relative to [3,3] indicated in canon, but also 3:2 red on 4:3 sign (C).
2. 	7, 60, 92, 93: $\frac{1}{2}$ (2:1); 65: $\frac{3}{4}$ (4:3)	65, 93: [2,3]; 60, 92: [3,3].
3. 	65: $\frac{3}{8}$ (8:3); 35, 36: $\frac{1}{2}$ (2:1).	35, 36: [2,3]; 65: [2,3], 1/2 of figure 2.
4. 	27, 28: $\frac{1}{2}$ (2:1); 77: $\frac{3}{4}$	27, 28: [2,3] in groups of 2x3 as  . 77: [2,3]
5. a.  & b.  (57)	25, 50, 58: 3 (2:3 Sbr), but 58: $4\frac{1}{2}$ (2:3) also; 57: $2\frac{1}{4}$ (4:9) & $1\frac{1}{2}$ (red=3:2 ); 67: 2 (3:2); 56: $1\frac{1}{3}$ (3:4)	25, 50, [3,2] <i>dim.</i> ; 58: [3,2], sometimes <i>dim.</i> , but also [3,3]; 57: [3,3]; 67: [2,3] (<i>dim.</i>); 56: [2,2].
6. a.  , b.  (67), c.  (25, 57) & d.  (57)	42, 92: 2 (3:2 Sbr); 10, 19, 25, 45, 48, 50, 58, 60, 67: $1\frac{1}{2}$ (2:3); 50?, 67 (w): $1\frac{1}{3}$ (4:3); 25: 1; 64, 100, 57(r): $\frac{3}{4}$ (4:3); 56: $\frac{2}{3}$ (3:2); 71: $\frac{4}{9}$ (9:4); 57(v.r.): $\frac{1}{2}$.	10, 19, 42, 45, 48, 64, 100: [2,3]; 60, 92: [3,3]; 25, 50, 56: [3,2]; 67: [2,3]; 25: [3,2] + \circ , 4:3 by 3:2. 57: [3,3], v.r.=3:2 r.; 71: [2,2]; 58: [3,2] sometimes <i>dim.</i> & [3,3] <i>dim.</i>
7. a.  & b. 	77: $2\frac{1}{4}$ (4:9), $1\frac{1}{2}$ (r)	77: [2 & 3,3]
8. 	77: $\frac{1}{3}$ (3:1)	77: [2 & 3, 3].
9. 	68: $\frac{5}{6}$ (3:2 $\frac{1}{2}$)	68: [2,3].
10. a.  (67) & b.  (68)	67: $\frac{2}{3}$ (3:2); 68: $\frac{1}{2}$ (2:1)	67: [2,3] (<i>dim.</i>); 68: [2,3], indicates 3:2 on 4:3
11. 	64: $1\frac{1}{2}$ (2:3, 4:3 Sbr)	64: [3,2].
12. 	60, 66: $\frac{3}{4}$	60: [3,3]; 66: [2,3]

⁷² For abbreviations used in Table 4.4 and Table 4.5 please refer to the key found at the beginning of this study. Additional abbreviations used: r.= red coloration, v.r.= void red coloration; w.= void black coloration, *eras.*= erased. The numbers in brackets in Column 1 and before colons in columns 2 and 3 in both tables refer to the item number of the work in which the note shape occurs.

Table 4.5: Special note shapes in MOe5.24.

Figures	Value [in \downarrow](proportion)	Mensural context and comments
1. a.  (1, 2, 3, 7, 9, 10, 11, 12, 14, 43, 59, 60, 62, 65, 68, 73, 82, 87, 88, 89, 91, 93, 97, 102), b.  (17, 48), c.  (29)	$\frac{1}{2}$ (2:1)	1, 7, 11, 43, 60, 87, 97: [2,2]; 2, 3, 14, 59, 65, 89, 91, 102: [2,3]; 12, 88, 93: [3,2]; 68: [3,3]; 9: [3,2], S only; 62: [2,3] and [2,2], <i>brevis</i> equivalent; 73: [3,2] and in 3:2; 82: [2,3] and [2,2] at 4:3; 17: [2,2] and in 3:2, canon requires red = 2:1; 48: [2,3]; 29: [2,2].
2. 	65: $\frac{3}{4}$ (4:3); 43: $\frac{2}{3}$ (3:2)	65: [2,3]; 43: [2,3]; cf. 7b.
3. a.  b.  (68, 80), c.  (73)	36, 66: 3 (2:3 \blacklozenge); 68: $2\frac{1}{4}$ (4:9); 68 (r): $1\frac{1}{2}$ (4:3) 34: 2 (3:2 \blacklozenge); 73(w), 80: $1\frac{1}{3}$ (3:2 \blacklozenge)	36, 66: [3,2] <i>dim.</i> ; 68: [3,3]; 34: [2,3]; 73, 80: [3,2]
4. a.  b. 	18, 20, 27, 36, [62], 63, 66, 75(Ct), 80, 82: $1\frac{1}{2}$ (3:2); 77(r), 82(r): $1\frac{1}{3}$ (3:4); 36(r): 1 (3:2 of 2:3); 68 (r): $\frac{3}{4}$ (4:3); 60: $\frac{4}{9}$ (9:4).	18, 20, 75, 82: [2,3]; 63, 77, 80: [3,2]; 27, 36, 66: [3,2] <i>dim.</i> ; 82(r): [2,2] <i>dim.</i> ; 68: [3,3]; 60: [2,2]; 62: [2,3] Ct., <i>eras.</i> , <i>em.</i>  .
5.  (73)	$2\frac{2}{3}$ (3:2 \square)	73: [3,2], $\square = \diamond \diamond$
6. 	$2\frac{1}{2}$ (2:5?)	28: [3,2]; 65, 90: [2,3].
7. a.  (14, 28, 46, 59, [62], 65, 75, 77, 85, 87, 90), b.  (65, 43), c.  (73).	$1\frac{1}{2}$ (2:3?); 43: $1\frac{1}{3}$	14, 46, 59, 65, 75, 85, 90: [2,3]; 28, 73, 77: [3,2]; 87: [2,2]; 62: [2,3], <i>eras.</i> Ct only.
8. a.  (43) b.  (14).	$1\frac{2}{3}$ (3:5?)	14: [2,3], <i>err.</i> ?; 43: [2,2].
9. 	$\frac{3}{4}$ (4:3?)	77: [3,2].
10.a.  (91, 95), b.  (95), c.   (102)	91, 95: $\frac{1}{4}$ (4:1?), 95(w), 102: $\frac{1}{6}$ (6:1).	$\downarrow = \frac{1}{2} \blacklozenge$; $\langle = \frac{1}{2} \diamond$ ($\diamond \diamond \diamond = \blacklozenge$); 95, 102: [2,3].
11. a.  (97), b.  (102)	$1\frac{2}{3}$	97: [2,3], w. portion is red in ms. 102: [2,3].
12. 	$\frac{5}{6}$ (6:5)	79: [2,3].  <i>eras.</i>
13.  (79)	$\frac{1}{2}$ (2:1)	67: [2,3], indicates 3:2 of 4:3.

Figures 1b and 4 in Table 4.4, which I have already mentioned in relation to Guido's *Or voit tout*, rely on proportional signification through the use of two different inferior stems: one with a flag, the other without. Although these note shapes bear semblance to those given by Antonio de Leno, it is apparent the inferior stem does not modify the nature of the *semiminima* form, but further clarifies the proportional relationship of either note shape to the *semibrevis*. The simple downward stem indicates a duple division of a tripartite *semibrevis*, the flagged inferior stem the triple division of the bipartite *semibrevis*. However, Figure 4 also has a different meaning that derives from the flagging of the *dragma* (Figure 6a). I will postpone discussion of Figure 10b until a subsequent paragraph.

The note shapes which appear to have the most variable nature in the repertoire of the *ars subtilior* are the *semibrevis caudata* and the *dragma*, shown in their essential form as Figures 5a and 6a in Table 4.4 and Figures 3a and 4a in Table 4.5. However, if one considers these note shapes according to the context of their mensuration (shown after the item number of each work in the right-most column of each table) and separates those forms found transmitted in the music of Philipoctus de Caserta, a systematic application of these forms based on a proportional meaning of their stems can be observed. The basic, uncolored form of the *semibrevis caudata* (◆) represents an inverse relationship relative to the division of the *tempus* in a work. Thus, while in [3,2] and [3,3] one finds two *semibreves caudate* in the place of three *semibreves*, but in [2,3] and [2,2] three *semibreves caudate* occur in the place of two *semibreves*. This explains the variable duration of this note shape relative to *minime*: four-and-a-half in [3,3],⁷³ three in [3,2],⁷⁴ two in [2,3]⁷⁵ and one-and-a-third in [2,2]⁷⁶.

At first sight, the use of the *dragma* in CH 564 (Figure 6a-d in Table 4.4) appears erratic and non-systematic. Again, temporary exclusion of the works of Philipoctus de Caserta reveals a clearer picture of the possible realisations of *dragme*, which can be confined to three types. Type I is the most frequent type and occurs in nine works⁷⁷ in CH 564. Its duration is equivalent to one-and-a-half *minime* with a *subsesquialtera* (2:3) relationship at the *minima* level usually implied by groupings of these note shapes. This usage occurs in both

⁷³ CH 564, #58.

⁷⁴ CH 564, #25, 50, 58.

⁷⁵ CH 564, #67.

⁷⁶ CH 564, #56.

⁷⁷ CH 564, #10, 19, 45 (Philipoctus), 48, 50, 58, 60 and 67.

minor and major prolations. Two works see the occurrence of the Type 2 *dragma* equivalent to two *minime*.⁷⁸ Both occur in passages in major prolation. Another two works contain Type 3 *dragme* that are realised in a *sesquitercia* proportion relative to the *minima*. Again, both works are in major prolation. Once again by excluding the works of Philipoctus de Caserta that occur in MOe5.24, one observes that simple *dragme* in this manuscript are always realised according to Type 1 (*vid.* Figure 4a&b in Table 4.5). Only Type 1 *dragme* occur in Tn J.II.9. While the Type 2 *dragme* show an affinity to notational process in late *trecento* sources discussed above, the first and third types are clearly related in their meaning and distinct from the Italian practice.⁷⁹

Of particular interest is the use of *dragme* in the multiple transmissions of Johannes Vaillant's *Par maintes foys* (for transnotation *vid.* Vol. II, App. A, No. 45). Table 4.6 compares the various note shapes used to denote the *subsesquialtera* and *sesquitercia* relationships.

Table 4.6: Note shapes found throughout the extant transmission of Johannes Vaillant's *Par maintes foys*.

Source	2:3 at \blacktriangledown	4:3 at \blacktriangledown
CH 564	$\bullet\bullet$	$\blacktriangledown\blacktriangledown\blacktriangledown\blacktriangledown$
B-MLeclercq + B-Bc 1	$\bullet\bullet$	$\lrcorner\blacktriangledown\blacktriangledown\blacktriangledown\blacktriangledown\lrcorner$
Iu ss, Wn 2777, Las 184 GR 197	$\bullet\bullet$	$\text{p}\text{p}\text{p}\text{p}$
Mbs 14274	pp	$\text{p}\text{p}\text{p}\text{p}$ or $\blacktriangledown\blacktriangledown\blacktriangledown\blacktriangledown$

The CH 564-transmission of *Par maintes foys* is the only source to use Type 3 *dragme*. Other sources use either red or flagged (imperfect) *sesquitercie minime* (BLeclercq + Bc 1, Iu ss, Wn 2777, Las 184) or transmit a different rhythm using the common full black, right flagged *semiminima* (GR 197, Mbs 14274). All other sources with the exception of CH 564 and GR 197 preserve *dragme* with a Type 1 significance. CH 564 instead takes the bold step of dotting a *minima* to increase its value by a half to achieve an equivalent duration.

⁷⁸ CH 564, #42, 92.

⁷⁹ One clear exception to this categorisation of the *dragma* occurs in a section of [2,3] in B. 26 of the S of CH 564, # 50. Here I read three *dragme* equal to four *minime*. Their value in this particular passage does not agree with the other occurrences of *dragme* in this work, and suggests in light of similar durations in CH 564 #67 and MOe5.24 #77 & 82 that the *dragme* in question were void or red in the exemplar or original.

The very idea of perfecting the “imperfectible and indivisible” *minima* is a notion foreign to French musical theory. The central Italian source GR 197 appears to prefer an arithmetic note shape, whose significance is discussed below, to indicate the same duration of one-and-a-half *minime*. This variation of note shapes in the transmissions of *Par maintes foys* is a potent example of scribal processes at work. The use of Type 1 *dragme* in the Lowlands fragment BLEclercq + Bc 1 in concert with its wide transmission throughout extant sources again questions the notion of an Italianate currency of the meaning of this form.

As can be observed in relation to Figures 6-8 in Table 4.3, all three *dragma*-types were codified by theorists during the late fourteenth/early fifteenth centuries. A tacit admission concerning the variable meaning of these note shapes occurs in the *Ars cantus mensurata per modos iuros*. The anonymous author of this treatise describes both *dragma*-Types 1 and 2.⁸⁰ That this author gives *dragme* as examples of proportional notation in parallel with different forms of coloration (void black and full red), again indicates the semantic equivalence of both notational processes. Coloration also plays a part in altering the meaning (that is signifying it through *differentia*) of the simple black note forms. Just as coloration imperfects simple note forms, coloration was also used to the same effect on the *dragma*, giving rise to the additional durations found in Figure 6 of Table 4.4 and Figure 4 of Table 4.5.

Several exceptions to the derived rules given above in relation to the *semibrevis caudata* and *dragma* are apparent in the surviving transmissions of works ascribed to Philipoctus de Caserta. All three transmissions of *En remirant* (MOe5.24, f. 34v; CH 564, f. 39r (#57); Pn6771, f. 80v) contain *semibreves caudate* which must be rendered at a 4:3 proportion relative to the *semibrevis* in [3,3], rather than the 2:3 proportion as found in all other works in *tempus perfectum*. The use of full red *semibreves caudate* at S 31 (*vid.* Vol. II, App. A, No. 15) follows the principles of imperfecting Type 2a coloration whereby two entwined relationships are observed. The former value of *caudate* is reduced by a third from $2\frac{1}{4}$ to $1\frac{1}{2}$ *minime*, a duration most frequently indicated in other works, including those of Philipoctus, by a *dragma*. At the same time, a 4:3 relationship is maintained between red, imperfect *semibreves* and red *caudate*. No full black *dragme* appear in this work. Full red *dragme* demonstrate a 4:3 relationship to *minime* and can be viewed as a logical derivative of the red *caudata*. As already stated, the CH 564 transmission of *En remirant* provides one further *dragma* that is void red and indicates the duration of half a *minima*. The additional level of coloration, voiding the body of the note, again imperfects the red *dragma* ($=\frac{3}{4}$

minima) by a third. This is a special case, as the other uses of void red coloration in *En remirant* require a *sesquitercia* proportion at the *minima* level. The notational process associated with this particular note shape relies on multiple imperfection by coloration, which also implies levels of cumulative proportions. Further discussion of this feature is found in Chapter 6 of the present study.

With due consideration to the properties of coloration, it can be concluded that all special note forms in *En remirant* indicate a *sesquitercia* relationship with their relative *gradus* (that is *caudata*->*semibrevis*, *dragma*->*minima*). At first glance, all transmissions of *En remirant* appear to indulge in clever equivoques through the use of void red coloration or the proportional mensuration sign \odot . The duration of the full red *dragme* and *caudate* are equivalent to the *minima* and *semibrevis* respectively in void red ink (CH 564, Pn 6771) or after the sign \odot (MOe5.24). Thus, the following relationships are observed:


$$\begin{array}{l} \begin{array}{c} \ulcorner \quad \quad \quad \urcorner \\ \blacklozenge \blacklozenge \blacklozenge \blacklozenge \\ \text{||} \text{||} \text{||} \text{||} \end{array} = \begin{array}{c} \blacklozenge \blacklozenge \blacklozenge \blacklozenge \\ \text{||} \text{||} \text{||} \text{||} \end{array} = \begin{array}{c} \ulcorner \quad \quad \urcorner \\ \odot \quad \blacklozenge \blacklozenge \end{array} \\ \\ \begin{array}{c} \ulcorner \quad \quad \quad \urcorner \\ \blacklozenge \blacklozenge \blacklozenge \\ \text{||} \text{||} \text{||} \end{array} = \begin{array}{c} \ulcorner \quad \quad \urcorner \\ \blacklozenge \blacklozenge \blacklozenge \end{array} = [\odot] \blacklozenge \blacklozenge = \begin{array}{c} \ulcorner \quad \quad \quad \urcorner \\ \diamond \diamond \diamond \end{array} \text{ or } \odot \blacklozenge \blacklozenge \blacklozenge \\ \\ \begin{array}{c} \ulcorner \quad \quad \quad \urcorner \\ \blacklozenge \blacklozenge \\ \text{||} \text{||} \end{array} = \begin{array}{c} \ulcorner \quad \quad \quad \urcorner \\ \blacklozenge \blacklozenge \blacklozenge \blacklozenge \\ \text{||} \text{||} \text{||} \text{||} \end{array} = [\odot] \blacklozenge \blacklozenge \blacklozenge = \begin{array}{c} \ulcorner \quad \quad \quad \urcorner \\ \diamond \diamond \diamond \diamond \end{array} \text{ or } \odot \blacklozenge \blacklozenge \blacklozenge \blacklozenge \end{array}$$

The duration of a black *caudata* could be written as a dotted (perfected) void red *semibrevis*. That this does not occur appears to be the key to this work and gives rise to the meaning of the red *caudata* and *dragma*. The necessity of rendering four black *caudate* in the space of three perfect *semibreves* is apparent through the counterpoint at S 17 and 50 (*vid.* Vol. II, App. A, No. 15). This gives a richer meaning to the notational process, as it soon becomes apparent that the special note shapes in this work do not involve equivocal relationships. That the red *caudate* and *dragme* at S 30-31 are construed in the space of a colorated, imperfect *brevis* suggests that these forms carry an additional level of meaning not resident in void red coloration. This additional level of meaning, only apparent in the original notation, resides in the fact that *tempus* is imperfect at this point of time by virtue of red coloration. The displacement of phrase/cadence structures from the beginning of the *outrépasse* (S 26) would seem to be a critical factor in the ostensibly authorial decision to practice this manner of notation.

⁸⁰ Balensuela, *op. cit.*, pp. 224-226.

Two further unique meanings in relation to the *dragma* are found in the works of Philipoctus. In all three transmissions of his *Par les bons Gedeon et Sanson* (CH 564, MOe5.24, Tn T.III.2) nine black *dragme* must be sung in the time of four *minime* in [2,2] (*vid.* Vol. II, App. A, No. 33, S 62). But the unusual nature of this reading is only arrived at by a canon found in all three transmissions which specifies that *note caudate ab ultraque parte cantentur in proportione dupla sesquiquarta* (“notes with tails from both sides are sung in a 9:4 proportion”).⁸¹ Aside from clarifying the actual intent of the note shape, the canon is significant in that it requires that these note shapes be construed proportionally.

Dragme found in Philipoctus’ *Il n’est nulz homs* (CH 564, f. 38v) appear to take their special meaning from the use of *semibreves caudate* which also occur in this work (*vid.* Vol. II, App. A, No. 46). The latter form at S 42.2 denotes an expected *sesquialtera* relationship to the imperfect *semibreves* in [2,2]. *Dragme* at S 21-23 are also to be sung in a *sesquialtera* relationship, but at the *minima* level. A parallel can be thus seen between *Il n’est nulz homs* with its application of a *sesquialtera* at both *gradus* (*semibrevis* and *minima*) and the application of *sesquitercia* in *En remirant*. In both works, the presence of the *semibrevis caudata* in a special relationship to the *semibrevis*, within the space of a *tempus*, is a key to the realisation of other special note shapes found in each work.

Hitherto, I have focused my attention on those note shapes that use a flag or a simple stem to indicate a new significance to a particular note form. Before proceeding to a discussion of one further notational process exclusively found in works ascribed to Jacob de Senleches and Rodericus, I draw attention to the hybrid note shape in Figure 11 of Table 4.4. This note form, uniquely found in Trebor’s *Helas pitie envers moy* (CH 564, f. 42r), appears to wed two notational processes. While it has already been established that the *semibrevis caudata* indicates a duration of three *minime* in [3,2] (the mensuration of *Helas pitie*), the duration of one-and-a-half *minime* is achieved through an analogy with the *semiminima*’s flag and its implicit duple relationship. The form  (S 14) is effectively a *semi-semibrevis caudata* (*vid.* Vol. II, App. A, No. 47). The answer to why the scribe or, perhaps more plausibly based on its unique nature, the composer would have used this form, resides in the presence of Type 3 *dragme* in the same work. The frequently implied relationship of

⁸¹ The reading of the canon given here is that found in Tn T.III.2, which also closely resembles the one found in CH 564. The scribe or his exemplar of MOe5.24 has omitted the adjective “dupla” in specifying the proportion. Clearly, in the contrapuntal context, a 5:4 proportion cannot apply.

dragme to *semibreves caudate* is 2:1 ($\downarrow\downarrow = \downarrow$). That the less common Type 3 *dragme* were required may have been indicated by the usual form of the *semi-semibrevis caudata* in Trebor's work. Through intrinsic modes of signification at several levels, only the full meaning of this work's notation would become apparent to readers of this work.

The notation of Jacob de Senleches and Rodericus employs a device whose uniqueness, but almost uniform transmission, can be regarded as a notational process developed by these composers and/or possibly their unknown colleagues composing music in northern Spain and southern France. I see this notational device, which is peculiar to their works, as having no relationship with added-stem forms, and therefore witness no dependence on systems that might be considered Italianate. The process of notation I have previously called *virgula*-notation is still proportional in its nature, but sees the addition of a small curved tail above or below a simple or sometimes already-complex note shape.

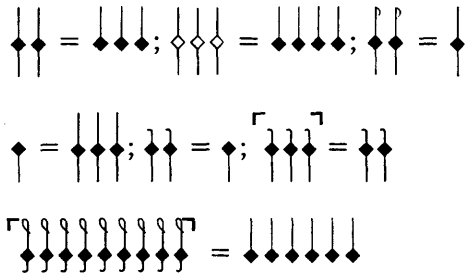
Two examples of *virgula* note shapes are found in the surviving transmissions of works by Jacob de Senleches. In both cases, these note shapes include a *virgula* facing to the right added to the bottom of a colorated *minima*. In *En attendant esperance*, the addition of the right-facing *virgula* to a void red *minima* (\downarrow [CH 564] or \downarrow [MOe5.24]) results in a duration of half-a-*minima* (*vid.* Vol. II, App. A, No. 37). The value would appear to derive from the *sesquitercia* nature of void red notes being multiplied by the *sesquialtera* nature of the lower right-facing *virgula*.⁸² In Senleches *La harpe de melodie*, three void black note shapes (\downarrow [CH 564] or \downarrow [US-Cn 54.1]) are sung in the space of two void black *minime*. (In this work, a void black *minima* is equivalent to a black *minima*.) The consistent use of this device with only slight modifications, and their consistent meaning strongly suggests that these note shapes are authorial.⁸³

The exceptional *Angolorum psalat* by Rodericus, which is transmitted only in CH 564, represents the summit of notational endeavour in its use of note shapes. Aside from red and void red coloration, particoloration (black-red and full red-void red) and Indo-

⁸² I have discussed the various readings in detail in Stoessel, *op. cit.*, pp. 156-158.

⁸³ The unique note shape which occurs in Jacob de Senleches' *En attendant esperance* as shown by Figure 9 in Table 4.4 and Figure 12 in Table 4.5 lacks any precise significance when viewed in the context of other notational devices used in Senleches' works, although it must indicate five-sixths of a *minima* and function as a memorial prompt. The appearance of the note shape found in MOe5.24 is not representative of its exemplar. Close examination of the manuscript suggests that the note shape as it originally appeared in MOe5.24 was identical to that found in CH 564. The short *virgula* at the top of the note was then erased in MOe5.24 and a

Arabic numerals, it employs no less than five different special note shapes in their basic form. (Two additional forms are derived from these note shapes through the process of coloration.) The following relationships are apparent:



The use of a Type 1 *dragma* (♣) connects this work to French usage, while the *subsesquitercia* void *dragma* is also found in Senleches' *La harpe de melodie*. The form ♣ indicates a duple division of the *semibrevis caudate* or a *subsesquialtera* relationship with the *dragme*. Thus in an analogy to the use of stems, the right-facing virgula indicates a 3:2 relationship in relation to the note to which it is added and the left facing virgula a 2:3 relationship. The coloration of ♣ results in a duration equivalent to the *dragma* in this work.

It has been shown that a limited set of *differentia* are observable in the drawing of proportional special note shapes of the *ars subtilior*, especially in its two principal sources MOe5.24 and CH 564. The significance of these *differentia* is most commonly limited to a 3:2 or its opposite 2:3 proportion. A myriad of other proportional relationships is created through additional intrinsic elements such as coloration. But this system of stems and *virgule* is sometimes subverted or given over to different meanings. In particular, the notated music of Philipoctus de Caserta demonstrates several variations of meaning which are nonetheless self-consistent. The preservation of these idiosyncrasies across collective transmissions of several works highlights a particular aspect of Philipoctus' notational style, one that is in most cases preserved by scribes.

The use of *differentia* is not limited to the music of the *ars subtilior*, although the most notable instances involve a set of *differentia* which are unique to their repertoire. The well known example of the double transmission of Lorenzo Masini's *Ita se n'era star nel paradiso* in Fl 87 (ff. 45v-46r, 46v-47r) sees, in an attempt to adapt the work to French notational processes, the first version notated with various novel note shapes (♣♣♣♣) to indicate

long stem with a looped flag drawn in its place. Several other variants which occur in the double transmission of *En attendant esperance* are discussed in Stoessel, *op. cit.*, pp. 156-158.

proportional relationships,⁸⁴ while the second transmission employs the Italian system of *divisiones* and their signs which obviate the need to signify proportional relationships inherent between the respective *divisiones*.⁸⁵ Undoubtedly the work of an imaginative scribe, the unique notational process of the first transmission of *Ita se n'era star nel paradiso* in Fl 87 also highlights the struggle of its scribes to adapt older readings into a notation readable in the second decade of the fifteenth century. What is curious about the notational processes invented by this scribe is that they avoid or are without the knowledge of the developments in French notation in the hands of both French scribes and its native Italian scribes, especially the Lombards. Yet, the scribe could not be ignorant of French modes of notation if one considers the general nature of transmissions of the *trecento* repertoire in Fl 87. All show varying degrees of assimilation of French processes, particularly the omission of the *pontellus* and the use of French mensuration signs. Furthermore, the works of Zacharias which appear in Fl 87 provide examples of notational processes, particularly the use of *sesquitercia* coloration, which might have provided a solution to some of the issues that existed in the adaptation of Lorenzo's *Ita se n'era star in paradiso* into a notation more typically French. Ironically, the avoidance of advanced French techniques produced a result that was arguably more obscure to most readers than the original.

I now turn to the theory of arithmetic note shapes. As was stated in Chapter 1, the outright purpose of the author of the *Tractatus Figurarum* was to invent a notational process, *vis-à-vis* note shapes, which might otherwise express proportional relationships in music. The treatise is invaluable for understanding notational practices in practical sources, but only one figure in the *Tractatus Figurarum* has been employed in the surviving repertoire. This perspective after centuries of evident loss and destruction of musical sources need not mitigate the system in the *Tractatus Figurarum* to being purely theoretical. In fact, the principles it sets down can be applied to several practical manifestations.

⁸⁴ For the duration of these note shapes, *vid.* Johannes Wolf, *op.cit.*, vol. 1, p. 331. Nino Pirrotta tentatively attributes the first version of *Ita se n'era star nel paradiso*, which he assesses as the rewriting of *duodenaria* and *octonaria* as *senaria perfecta* and *quaternaria*, to Lorenzo's hand in his 'On Landini and Ser Lorenzo', *Musica Disciplina*, vol. 48, 1994, p. 7. This view is affirmed in Marco Flisi, 'Notazione francese e italiana: Lorenzo da Firenze e la sperimentazione notazionale', in *Problemi e metodi della filologia musicale*, ed. S. Campagnolo, Didattica della filologia musicale II, Lucca, 2000, pp. 21-27: On the literary context of this work's text and a comparison of its setting by Lorenzo Masini and Vincenzo da Rimini, *vid.* Michael Long, 'Ita se n'era star nel paradiso: the metamorphoses of an Ovidian madrigal in Trecento Italy', in *L'ars Nova del Trecento VI*, eds G. Cattin and P. D. Vecchia, Certaldo, 1992, pp. 257-268.

Two devices are employed to create new durations in the *Tractatus Figurarum*. The first is the use of the *ars nova* device of *punctus perfectionis* (p.p.) or *punctus additionis* that increases the duration it follows by a half. Although this device was developed in *ars nova* notation to perfect imperfect durations, its use towards the end of the fourteenth century, particularly in relation to the *minima* whose nature is neither perfect or imperfect, appears to have loosened earlier precepts. However, this device is also extended to include a hollow *punctum* (°) that adds the value of half a *minima* to the note it follows.⁸⁶ Both types of *puncti* are used to modify the value of note shapes. The second device fundamental to the various note shapes developed in the *Tractatus Figurarum* is the practice of composite note shapes. Principally by the addition of the *minima* or *semiminima*, the latter of which takes on a void black form in the *Tractatus Figurarum*, to various simple note shapes, new durations were formed. This composition of note shapes is achieved by taking the note form to be added, rotating it 180 degrees and combining the two forms so that they share a common body that exhibits the traits of both note shapes. Table 4.7 contains a list of special note shapes found in the *Tractatus Figurarum*, including a *resolutio* showing their composite parts, their duration, proportional relationship with the *minima* and name or description.

⁸⁵ For a discussion of the problems of adapting the *divisiones duodenaria* and *novenaria* to French notation, *vid.* Long, “Musical Tastes in Fourteenth-century Italy”, pp. 88-92.

⁸⁶ Q.v. Prodocimus’ condemnation of the practice of hollowing the dot based on properties of the indivisible point in Euclidean geometry in Gallo, *Prodocimi de Beldemanti Opera 1: Expositiones*, chap. LXI, sent. 94-99.

Table 4.7: Special note shapes in *Tractatus Figurarum*.

Figure	Resolutio	Duration and proportion ($\blacklozenge = 1$)	Name/Description
	-	$\frac{3}{4}$ (4:3)	<i>minima imperfecta</i>
	$\frac{2}{3}$ of (i.e. imperfected)	$\frac{1}{2}$ (2:1)	<i>semiminima</i>
	\blacklozenge (3) + ($\frac{1}{2}$) + \cdot (1)	$4\frac{1}{2}$ (2:9, 2:3 Sbr)	-
	\blacklozenge (1) + \blacklozenge (1)	2 (2:2, 3:2 Sbr)	<i>minima caudata superius et inferius</i>
	($\frac{2}{3}$) + ($\frac{2}{3}$)	$1\frac{1}{3}$ (3:4)	[<i>minima caudata superius et inferius</i>] <i>evacuata</i>
	\blacklozenge (1) + \blacklozenge ($\frac{3}{4}$)	$1\frac{3}{4}$ (4:7)	<i>Figura superius et inferius caudata et inferius retorta</i>
	\blacklozenge (1) + \blacklozenge ($\frac{3}{4}$) + \circ ($\frac{1}{2}$)	$2\frac{1}{4}$ (4:9)	-
	\blacklozenge (1) + ($\frac{1}{2}$)	$1\frac{1}{2}$ (2:3)	<i>Minima semiplena et inferius semivacua superius et inferius caudata et inferius retorta</i>

The presentation of these special note shapes in the *Tractatus Figurarum* is followed by a discussion of their use in the various *ars nova* mensurations. The epilogue to the treatise contains a telling phrase in reference to the use of these signs in discant:

*Ponendo rubeas de modo discandi qui dicitur secundum illos de francia vulgariter trayn vel traynour est fortior modus quam syncopare.*⁸⁷

It is clear from the examples that follow this statement that *traynour* refers not only to the use of red notes to sing proportionally, but to special note shapes such as the void *dragma* (). *Trayn* or *traynour* must be related to the French verb *trainer* ('to draw out, to drag'), and must refer to how singing proportionally (by lengthening or shorting durations pulls) against the normal divisions of musical time in other voices. The manner in which these terms are spoken of appears to distance the scribe from French musicians, particularly the use of the demonstrative pronoun of the third person *illi* ("those men, those men over there") which always denotes separation and greater distance from the subject in both classical and medieval Latin (as opposed to the first person *hi*).

⁸⁷ "Placing red notes in the manner of descanting which is called in the vulgar tongue according to those from France *trayn* or *traynour* is a mannei more bold than to syncopate."; Schreuer, *op. cit.*, pp. 99.13-100.2.

Philip Schreur draws attention to the use of similar terminology in the fourth part of the *Quatuor principalia musice* and the *Tractatus figurarum*. In the *Quatuor principalia musice*, an extensive music treatise likely compiled by monk John Tewkesbury at Oxford in 1351,⁸⁸ the concept of singing four against three *minime* includes a reference to the French (*Gallice*) term *treyn*, Latin *tractus*, which is often called *syncopa*.⁸⁹ Luminita Aluas' conclusion that the probable autograph of the *Quatuor principalia* is dated to 1351⁹⁰ suggests that its reference to *treyn* is a very early reference to this French musical term. The shift in the *Tractatus Figurarum*, which sees *trayn* or *traynour* separated from *syncopa*, may represent a chronological development in the separation of polymetricism from displacement syncopation, or it may indicate that the term *syncopa* was applied more freely at times than defined in theoretical circles. Essentially, the equivalence of *treyn* and *syncopa* in the *Quatuor principalia* might be understood as indicative of the increased complexity of polymetricism beyond the original 3:2 proportion at the *semibrevis*, which could also be achieved in certain instances by the processes of displacement syncopation (*syncopa*). The concept of *tractus*, *trayn* (*treyn*) or *traynour* appears to refer to a rhythmic aesthetic which resided in the increased proportionality or polymetricism evident in the music of the late fourteenth century and onwards. The association of this aesthetic with French music and its wider dissemination beyond the geographical confines of French speaking regions is clear in both the *Tractatus Figurarum* and the *Quatuor principalia musice*.



A second treatise on arithmetic note shapes, the *Tractatulus de figuris et temporibus*, appears to be a commentary on, or derivative of, several music treatises, one of which appears to be the *Tractatus Figurarum*. It is perhaps notable that the *Tractatulus de figuris et temporibus* appears in the same manuscript in which three copies of the *Tractatus Figurarum* are contained.⁹¹ After introducing the four prolations of the *ars nova* and discussing coloration, including *sesquialtera* and *sesquitercia* at the *minima* level, the author of the

⁸⁸ For the strong suggestion that this treatise, at times considered anonymous or by Simon Tunstede, was by John of Tewkesbury, *vid.* Aluas, *op.cit.*, pp. 5-29.


⁸⁹ *Equipollencie enim supradicte atque reduxiones musicam pronunciandi, difficultates causant, que quidem difficultates tractus gallice treyns et sincope a multis nominantur.* See the recent edition in Aluas, *op. cit.*, p. 455.

⁹⁰ Aluas, *op. cit.*, p. 13.

⁹¹ Seville, Catedral Metropolitana, Biblioteca Capitular y Colombina, 5.2.25, ff. 93r-94v; *Tractatus figurarum*: ff. 84r-85v, f. 87 (partial), f. 114r-116r. Edition: Gallo, *Mensurabilis Musicae Tractatuli*, pp. 75-89. Described with inventory by *idem*, 'Alcune fonti poco note di musica teorica e pratica', in *L'Ars nova italiana del Trecento: Convegno di studio 1961-67 [=Ars nova italiana del trecento II]*, ed. F. A. Gallo, Certaldo, 1968, pp. 59-73. This manuscript is actually a collection of fascicles bound together in the second half of the seventeenth century.

Tractatulus de figuris et temporibus details several special note shapes whose invention he attributes to Philipoctus de Caserta.⁹² In all but one instance, the figures presented in the *Tractatulus* are identical to those in the *Tractatus Figurarum*. That particular instance () is hardly significant since it also gives in later examples a note shape () for the same duration that agrees with the *Tractatus Figurarum*. At the conclusion of this section, the author of the *Tractatulus de figuris et temporibus* ends with *Et sufficit de figuris francigenis* (“And this suffices concerning French note shapes”) to separate what preceded from the subsequent section on *figure et tempores ytalicae* (“Italian note shapes and mensurations”).

In an appendix to the copy of *Ars (musice)* of Dutchman Johannes Boen as it appears only in a Venetian manuscript,⁹³ there is mention of the use of invented note shapes to denote proportional relationships. A reference to his previous treatise (*nostra Musica*) may indicate that the appendix was added to the *Ars* by Boen in the latter part of the fourteenth century. Concerning the origins of a particular type of note shape, Boen has the following to offer:

Aliquotiens inveniuntur figure mirabiliter ordinate ab uno lombardo nomine Gwilgon habente modum pronuntiandi secundum proportiones et tamen subiectum musice ignorante. Et eo istas figuras sibi ordinavit in hunc modum scilicet quod tales figure:  secundarie que vocantur semidragma punctata et uncata valerent tres.⁹⁴

⁹² As suggested in previous paragraphs, the notational record of Philipoctus de Caserta’s works appears to preserve idiosyncratic uses of special note shapes. Considering the diverse sources of his music, one may reasonably conjecture that this phenomenon is linked to the Philipoctus’ own (archetypal) notational process, rather than the result of a single apotype which modified the original notation. On the basis of different notational processes which can be witnessed between Philipoctus’ works and the *Tractatus figurarum*, several scholars have been right to question the attribution of the *Tractatus figurarum* to Philipoctus, *vid.* Schreier, *op. cit.*, p. 5; Stone, ‘Che cosa c’è di più sottile riguardo l’ars subtilior?’, pp. 29-30. The presence of a manuscript tradition that ascribed the *Tractatus figurarum* to Philipoctus may be the source of the attribution of the invention of the arithmetic note shapes to Philipoctus by the author of the *Tractatulus de figuris et temporibus*. Yet, there will always exist some uncertainty as to whether Philipoctus could have developed these note shapes late in his career and subsequent to the circulation of his extant works, and whether this can be reconciled with Johannes Boen’s statement (*vid. infra*) that a note shape that appears to be arithmetic was invented by a Lombard, Gwilgon. As Wulf Arlt has noted, the alternative attribution of the *Tractatus figurarum* to Egidius de Morino appears to have resulted from a false attribution inherited from a single exemplar, *vid.* Wulf Arlt, ‘Der Tractatus figurarum - ein Beitrag zur Musiklehre der “ars subtilior”’, *Schweizer Beiträge zur Musikwissenschaft*, vol. 1, no. 1, 1972, p. 44.

⁹³ Venice, Biblioteca Nazionale Marciana, lat. VIII 24 (=3434).

⁹⁴ “At times figures amazingly constructed were invented by a Lombard named Gwilgon, who considered the manner of performing according to proportions and yet was unacquainted with the subject of music. And thus he constructs these figures in this manner, namely such secondary figures... which are called dotted and hooked *semidragne* <and> are worth three.” I have read *uncata* as *uncinata*; F. Alberto Gallo, (ed.), *Ars (Musicae) Johannis Boen*, pp. 40-41.

Although the value of the actual figure is not entirely clear, the degree of similarity of this note shape to those found in the *Tractatus Figurarum* and *Tractatulus de figuris et temporibus* cannot be ignored. Boen's view that these note shapes were invented by a Lombard named Gwilgon offers evidence that composite note shapes are an Italian invention some time after 1375.⁹⁵ This situation clarifies the problem of French terms and appellations encountered in the *Tractatus Figurarum* and *Tractatulus de figuris et temporibus*. On their own, there is a clear designation of non-native elements in music theory which suggests both treatises are the works of authors outside France or circles of French musicians.

Should the Lombard Gwilgon have existed, his approach to musical notation as reflected by the *Tractatus Figurarum* and *Tractatulus de figuris et temporibus* demonstrates an awareness of musical concepts in French music, specifically proportionality. In this respect, Boen is clear when he states that these note shapes were invented by a Lombard *habente modum pronuntiandi secundum proportiones*. However, it is clear that the arithmetic system of notation itself is not French in its origin, but an Italian adaptation of French concepts and notation to develop alternative modes of signification. In doing so, the nature of arithmetic note shapes avoided the ambiguities of the contextually dependent proportional note shapes. Each arithmetic note shape relied on durations which possessed in the purest French mensural notation a universal value despite the actual mensurations: the *minima* and *semiminima*. A new range of proportional relationships became available that could be indicated unambiguously.⁹⁶

Turning to the surviving repertoire, arithmetic note shapes are found for the most part in the works of Matheus de Perusio transmitted in MOe5.24. Their use is not limited to this composer as shown above with respect to the GR 197 transmission of *Par maintes foys* and as will be subsequently shown in relation to Paolo Tenorista's *Amor da po' che tu ti maravigli* preserved in Pn 568. Figures 6-10 in Table 4.5 (see above p. 217) are arithmetic note shapes observable in MOe5.24. Figures 6-8, which require the addition of one note shape to the other, are closest to the system described in the *Tractatus Figurarum*. These figures are based on the following relationships:

⁹⁵ On the dating of the *Ars*, *vid.* Gallo, *Ars (Musicae) Johannes Boen*, p. 14.

⁹⁶ Arlt, *op.cit.*, p. 53.



$$\begin{aligned}
 \text{♩} &= \text{♩} + \text{♩}; & \text{♩} &= \text{♩} + \text{♩}; \\
 \text{♩} &= \text{♩} \left(\frac{3}{4} \text{ or } \frac{2}{3}\right) + \text{♩} \left(\frac{3}{4} \text{ or } \frac{2}{3}\right); \\
 \text{♩} &= \text{♩} + \text{♩} \left(\frac{1}{2}\right); & \text{♩} &= \text{♩} + \text{♩} \left(\frac{2}{3}\right)
 \end{aligned}$$


As I have already discussed Bartholomeus de Bononia's use of Figure 7c and the unique position of this note shape across theory and practice, I move on to other arithmetic forms. Figures 9 and 10a-c in Table 4.5 involve the subtraction of part of the duration of a simple note shape by the removal of a proportionate part of the note's body. Thus in Figure 9, the removal of a quarter of the note's body reduces its duration to three-quarters of a *minima*. Figures 11a and 11b in Table 4.5 are ambiguous in their nature. Their duration, however, is not ambiguous, but is arrived at by two possible methods. Both figures may be construed as the particoloration of a Type 2 (arithmetic) *dragma*, or as the addition of a *minima* and an imperfect *minima*. In view of the usual practice of particoloration, which divides the note's body vertically, I would favour the first rationale. This conclusion does not completely exclude this note shape from the arithmetic category, as its basis feasibly lies in a Type 2 *dragma*.

Works ascribed to Matheus de Perusio in MOe5.24 use Figures 7a, 7b, 8b, 9, 10a-c and 11a-b shown in Table 4.5. The use of subtractive note shapes is a particularly salient feature of a notational style that must have direct links to Matheus. It marks a notational process that has abandoned the indivisibility of the *minima* and/or *semiminima* into smaller parts, but at the same time maintains the absolute equivalence of both durations across mensurations. It also demonstrates a reluctance to resort to processes of diminution, and does not attempt, whether it was possible or otherwise, to use advanced proportionality with Indo-Arabic numerals. An advantage of this inventive form of notation is its simple mathematical process, which can be still readily grasped today.⁹⁷

⁹⁷ For a detailed reappraisal of notational processes in perhaps Matheus' most intricate work, *Le greygnour bien*, *vid.* Maria Teresa Rosa Barezzani, 'Una rilettura di *Le Greygnour Bien* di Matteo da Perugia', in *Philomusica online*, vol. 1, [path: <http://spfm.unipv.it/philomusica/Rosab.htm>], 2001-2002. Barezzani notes the recent study on the compilation of manuscripts and Italian exponents of the *ars subtilior* by Carla Vivarelli, "L'Ars subtilior in Italia: le composizioni francesi di Filippotto e Antonello da Caserta nel codice Estense α .M.5.24", Tesi di Diploma in Paleografia e Filologia Musicale, Università degli studi di Pavia, Scuola di Paleografia e Filologia Musicale di Cremona, 1998-99. At the time of the completion of the present study, I was regrettably unable to consult the findings of this author.

An important observation arises from considering a *Credo* setting by Zacharias (MOe5,24, f. 23v-25r, #43). In all other transmissions of this work, the S is present in a simpler, unornamented form. Scholars have speculated over who was responsible for this richly and masterly ornamented S transmitted in MOe5.24.⁹⁸ The consensus has vacillated between either Matheus de Perusio or Zacharias himself as its author. Based on its notational process, however, there is some doubt cast over the view that Matheus de Perusio had a hand in this ornamented S.

Instead of *sesquialtera* coloration at the *minima* level as found in several works by Matheus, the ornamented S of Zacharias' *Credo* uses the reverse flagged note shape  to indicate the duration of two-thirds of a *minima*. As already discussed above, this sign is common in sources of *trecento* music from the late fourteenth and early fifteenth centuries. This note shape gives rise to the form shown in Figure 7b in Table 4.5 used to indicate the duration of one-and-a-third *minime*. The only other occurrence of this note shape is found in Matheus de Perusio's *Le grant desir* (MOe5.24, f. 33v, #65). However, the duration indicated by this note shape in this instance is one-and-a-half *minime*, resulting from the different contextual value of the fundamental note shape () of three-quarters of a *minima*.

This aspect on its own is not sufficient evidence on its own to argue against Matheus' role in the ornamental S for Zacharias' *Credo*. However, the case is strengthened by observing the presence of a further arithmetic note shape which is unique to this work, and whose duration is always indicated using a different note shape in the surviving works of Matheus de Perusio. The note shape in question is the form , which indicates the duration of one-and-two-thirds *minime*. Works ascribed to Matheus de Perusio use Figures 8b and 11a-b in Table 4.5 to indicate this same duration. All these figures rely on the process of coloration beyond the *minima*. While the avoidance of the notational process of coloration is not a categorical argument against Matheus' role in the ornamented S of Zacharias' *Credo*, especially in view of the aforementioned use of the reversed flagged note shape rather than *sesquitercia* coloration found in Matheus' *Le grant desir*, the collective differences suggest that this ornamentation is removed from the notational processes broadly apparent in the

⁹⁸ Layton, *op.cit.*, pp. 297-98; von Fischer and Gallo, *Italian Sacred and Ceremonial Music*, p. 273. Layton's view that the ornamented line was composed by Matheus de Perusio is accepted by Anne Stone in a broad discussion of virtuoso improvisation and its manifestation in the music of the *ars subtilior* in her 'Glimpses of the unwritten tradition in some *ars subtilior* works', *Musica Disciplina*, vol. 50, 1996, pp. 77-84.

Matheus' works as transmitted in MOe5.24. While one is wont to err on the side of caution when considering the role of scribes in the modification and adaptation of notational process in their copying, the preservation of a notational process in this ornamented S of Zacharias' *Credo* is apparent through the unique meaning of the reverse flagged form in MOe5.24. On the other hand, this conclusion does not favour Zacharias' role in the ornamentation of this voice, as the notational processes preserved with his works in MOe5.24, Las 184 and Fl 87 involve complete assimilation of French notational processes including *sesquitercia* coloration. The question of the identity of the *glossator* responsible for the ornamented S in MOe5.24 thus remains open, although the possibility that the scribe of this transmission was himself responsible can be seriously entertained in light of his observably high level of competency across a broad range of notational practices.

Before concluding this discussion on note shapes, I would like to draw attention to the use of an arithmetic form in Paolo Tenorista's *Amor da po che tu ti maravigli* as transmitted solely in Pn 568. A diplomatic transcription of this work into score, preserving features such as original clefs, signatures and note shapes is shown in Figure 4.3. Editorial accidentals appear above the staves.

Figure 4.3: *Amor da po' che tuti maravigli* by Paolo Tenorista da Firenze.

F-Pn 568, f. 79v. Paolo Tenorista da Firenze

S
A - mor, da po' che tu ti ma - ra - vi - gli del - la mia gre -

Ct

T
1 A - mor, da po' che tu ti ma - ra - vi - gli del - la mia gre - ve

ve pe - na. el tu' ar - co raf - fre - na e del tuo ser - vo, o -

10 pe - na. el tu' ar - co raf - fre - na e del tuo ser - vo,

mé, o - mé, pie - tà ti pi gli.

19 o - mé, o - mé, pie - tà ti pi gli.

Se tu ti ma - ra - vi gli, o mie sig - no
 che fe - rì'l pet - to e non ti fu o - no





29 Se tu ti ma - ra - vi gli, o mie sig - no
 che fe - rì'l pet - to e non ti fu o - no

re. tem - pe - ra'l col - po - tuo fe - ro - c'e cru
 re tro - van - dol dis - ar - ma to e san - za scu

36 re. tem - pe - ra'l col - po - tuo fe - ro - c'e cru
 re tro - van - dol dis - ar - ma to e san - za scu

do. do.

43 do. do.

On the basis of Paolo's biography which indicates he lived into the fourth decade of the fifteenth century,⁹⁹ it is not impossible to suggest that as a younger man he might have been witness to, and an experimenter in, new notational practices. Yet scribal intervention, as will be seen, is a major factor in the surviving transmission of this work. *Amor da po'* makes use of the advanced technique of Type 2a coloration at the *semiminima* level. From these void black sesquialteral *semiminime* () , an arithmetic note shape is created which combines two *semiminima* ()¹⁰⁰. The work also employs the same arithmetic note shape found in MOe5.24 and GR 197 to indicate the duration of one-and-a-half *minime* () . Note also that *semiminime* are written after the Tuscan fashion () . One further unusual device is used in this work: a hollow dot after a *minima* is used to increase its value by one-third of a *minima*. While not the same type of dot described in the *Tractatus Figurarum*, its logic is patently clear in that if a dot adds half of the duration of the note it follows, then a voided, hence imperfect, dot adds two-thirds of half (=one-third) of the duration of the note it follows.

In the sole transmission of *Amor da po'*, neither arithmetic figure is strictly correct in the context of the two types of *semiminime* employed in this work and the theory of the *Tractatus Figurarum*. Rotation of either *semiminima* form through 180 degrees would render a lower flag in the arithmetic note shape facing in the opposite direction to that presently found in Pn 568. This was not always the case. Close inspection of the original leads to the conclusion that all double-tailed void forms were originally drawn with a lower flag-loop facing to the left. All these flag-loops have been subsequently erased and drawn to the right. In the case of the double tailed black note shapes, there are no signs of erasure or modification. I suggest that the scribal alterations were made in order to provide semiotic equivalence between the black and void double-tailed forms. A possible cause of this discrepancy may have arisen if the scribe of this work in Pn 568 chose to copy right-flagged *semiminime* as left-flagged *semiminime*, but preserved the original form of the void and black double tailed forms. Realising the error he had committed through the presence of conflicting semiotic elements, the scribe chose to modify the

⁹⁹ The most recent research argues that from at least 1417 Dominus Paulus Abbas de Florentina was a prominent member of Florentine ecclesiastical society. His last testament made in failing health in 1436 may suggest his death shortly after this time, *vid.* Günther, Nádas and Stinson, *op.cit.*, pp. 203-246.

¹⁰⁰ The first and third note shapes which appear in the third group of void note forms in the superius of *Amor da po'* are incorrect through the absence of a superior flag.

inferior flags of void double tailed forms. The presence of this modification is a good indication that the scribe of this work in Pn 568 was active in modifying the notational text transmitted in his exemplar.¹⁰¹

From both a theoretical and practical perspective, the system of arithmetic note shapes is concise and semantically unambiguous. In this respect, it is surprising that the system itself was not more successful and widely used. Yet, what evidence there is points to its limited cultivation in northern Italy, perhaps disseminated by figures like Matheus de Perusio. Its small circle of practitioners and close association with a particular aesthetic is suggested not only by the source situation, but also by its failure to endure or be adopted by subsequent composers and scribes. The fate of all special note shapes, arithmetic and proportional, was determined by competing or subsequent notational systems, most notably proportions using Indo-Arabic numerals. The latter appear to have been a novelty that subsequently gained favourable reception into the musical canon, both theoretical and practical, and resulted in the redundancy of special note shapes.

4.3. Conclusions

In the course of this chapter, I have proposed that the development of special note shapes can be delineated along ethnographic and authorial lines. In the realm of proportional note shapes, the extant transmissions of works composed by Philipoctus de Caserta demonstrate several unique features that can be reconciled to a unique appreciation of these note types. This appreciation differs significantly from the same forms found throughout the *ars subtilior* repertoire. While a definite conclusion concerning the origin of Philipoctus' notational process remains obscured by this composer's shadowy biography, a stability in the extant transmissions (allowing for the roles of individual scribes) suggests an early cementing of notational processes in Philipoctus' works which is possibly authorial. Similarly, the notational processes observed in the works of Jacob de Senleches, Rodericus and Trebor demonstrate several

¹⁰¹ The issue of scribal intervention in Pn 568 raises a whole set of questions concerning the role of this particular scribe and his relation to the composer Paolo Tenorista. Nádas argues that the scribe of *Amor da po'*, whom he labels as Scribe D, had, along with his Scribe B, a special connection to Paolo Tenorista by virtue of their access to many *unica* including those in the most advanced notation and with embellished voices; *vid.* Nádas, "The Transmission of Trecento Secular Polyphony", pp. 335-336. Of vital importance, but currently impossible to answer, is the question of whether the corrections in *Amor da po'* were executed by Scribe D or another scribe associated with Pn 568. If Scribe D was responsible for the corrections in *Amor da po'*, it is difficult at one level to imagine his direct connection to Paolo Tenorista.

unique elements that can be attributed to their origin possibly in northern Spain or southern France. On the other hand, the system of arithmetic note shapes appears to have been a north Italian development. There is possibly evidence of arithmetic note shapes as far south as Rome if one recalls the form in the transmission of *Par maintes foyes* appearing in GR 197, although it is possible that transmission is a copy from a northern source.¹⁰² At any rate, the use of arithmetic note shapes at Florence is testified by the Pn 568 transmission of Paolo Tenorista's *Amor da po' che tu ti maravigli*.

At a broader level, I have argued for the existence of a set of intellectual values ostensibly connected to late medieval philosophy, especially its adoption (not without interpretation) of Aristotelean ontology and hermeneutics. In particular, the *Doctrine of Being* and its basis in formal causes remains a salient feature of theoretical conceptualisation of musical notation. The very fact that this conceptualisation is not unique to musical dialectic but was shared among the liberal arts demonstrates the presence of a broad intellectual culture. The ability to readily demonstrate these same concepts in practical manifestations of musical notation also argues for the presence of this intellectual culture in musical culture, whether it is unconsciously inherited or actively manipulated by scribes according to these received concepts. It marks a situation where the inventors of special notes shapes, and other modes of notation witnessed in the music of the *ars subtilior*, are naturally creatures of their age, whose thoughts and actions, even if rarely knowable in each instance, are respondent to concepts promulgated among the educated (and not so well educated) during the late fourteenth and early fifteenth centuries. In the next chapter, I move from the intrinsic to the extrinsic by continuing this dialogue with musical notation and examining the factors in the use and development of mensuration signs during the fourteenth century.

¹⁰² *Vid.* Chapter 3, pp. 163-170.