

Il punto di partenza: una lettera del 1520 in cui l'organista veneziano Giovanni da Legge chiede al teorico Giovanni del Lago di procurargli "quella bella cosa" di Tinctoris — un pezzo che sembrava già allora raro e prezioso.

L'identificazione: Blackburn dimostra che quest'opera, citata da Franchinus Gafurius nella sua *Practica musicae* (1496) come mottetto "pedagogico", non compare in nessuna fonte musicale nota sotto il nome di Tinctoris, ma viene poi da lei riscoperta in un manoscritto di Perugia (Perugia, Biblioteca Comunale Augusta, MS 1013), dove è nascosta sotto la grafia distorta "Tentoris" invece di Tinctoris.

Analisi del manoscritto: l'autrice esamina in dettaglio sia il manoscritto di Perugia sia un manoscritto affine di Bologna (MS A 71), entrambe raccolte didattiche contenenti trattati ed esempi musicali sulle proporzioni mensurali.

Il mottetto stesso: *Difficiles alios* viene presentato come un vero e proprio "esame" per i musicisti dell'epoca — un brano scritto non su un testo ma come dimostrazione pratica delle complesse regole di Tinctoris su mensurazione, proporzioni, imperfezione e alterazione delle note, illustrate dalle glosse marginali presenti nel manoscritto.

La fortuna successiva: Blackburn ripercorre come il mottetto continuò a essere discusso per generazioni nella corrispondenza tra teorici come Giovanni Spataro, Pietro Aaron, Lorenzo Gazio e lo stesso del Lago, a dimostrazione della sua importanza come riferimento pratico per l'interpretazione della notazione mensurale rinascimentale.

Appendice: l'articolo si conclude con la trascrizione musicale completa del mottetto ricostruito.

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A LOST GUIDE TO TINCTORIS'S TEACHINGS RECOVERED*

On the day before Christmas in 1520, the Venetian organist Giovanni da Legge wrote to his friend and mentor, the theorist Giovanni del Lago:

I should like you to send me here in Rome 'quella bella cosa' by Tinctoris that you wanted to give me when I left [Venice]. At that time you told me you had a resolution that you had made before for the late Zampiero. I should really like to have it together with some explanation so that I could understand the reasons for the resolution, for which I should be much obliged to you. I want to see what some worthy men here have to say about it.¹

No answer is preserved, but del Lago must have gratified him, for three years later da Legge asked del Lago for 'the Mass *Dixerunt discipuli*, with the annotations of the modes where necessary', which

* A condensed version of this paper was read at the Forty-sixth Annual Meeting of the American Musicological Society in Denver, Colorado, November 1980. On that occasion a taped performance of the *prima pars* of Tinctoris's motet was included. I am indebted to Howard Mayer Brown (soprano recorder), Charles Coldwell (tenor recorder), and Thomas MacCracken (tenor viol), all of the University of Chicago, for a splendid performance of the work, and again to Thomas MacCracken for his expert recording.

¹ 'Ben voria che quella bella cosa di Tinttoris mi volevi dar al partir mio me la mandasti qui a Roma, et za me dicevati allora haver la resolucione qual facesti una volta per Zampiero, a chi Dio perdoni. Haveria molto a charo dicta cosa con qualche pocca dichiaratione, acciò apresso la resolucione io sapesse le rason perché, da la qual cosa molto ve ne saria obligato. Et voria veder de qui quello me saperiano dir alcuni valent 'omeni vi sono.' The letter forms part of the Spataro correspondence, Vatican City, Biblioteca Apostolica Vaticana, MS Vat. lat. 5318 [Vatican City Vat. lat. 5318], fol. 136. See K. Jeppesen, 'Eine musiktheoretische Korrespondenz des früheren Cinquecento', *Acta Musicologica*, 13 (1941), pp. 3–39. An edition of the whole correspondence is being undertaken by Edward E. Lowinsky and Clement A. Miller. I wish to thank them warmly for allowing me to publish portions of some of the letters in their transcriptions in advance of publication. Moreover Professor Miller kindly read this paper and suggested an explanation for the puzzling word 'dupliciter' in some of the annotations. I am greatly indebted to Edward Lowinsky, who generously gave of his time and knowledge and whose criticism has considerably improved the final form of this paper.

he wanted 'in the form of a commentary [like the one] on that *Difficiles* by Tinctoris so I could understand it well'.²

Though he mentions no more than the first word of Tinctoris's composition, da Legge's second letter enables us to identify 'quella bella cosa di Tinttoris' with a motet referred to by Franchinus Gafurius in his *Practica musicae* of 1496. In the chapter 'De modo' in Book II, Gafurius describes the system of using 'indicative' rests, placed at the beginning of a composition before the mensuration sign, to show whether the *modus* (the mensuration of the maxima and long) is perfect or imperfect. Three rests covering three spaces each show that both the maxima and the long are perfect, 'just as Tinctoris did in the tenor of his pedagogical motet, *Difficiles alios delectat pangere cantus*'.³

No work by this title (which might be translated as 'He takes delight in composing other difficult songs') occurs in Tinctoris's treatises, nor is it among his compositions surviving in contemporary prints and manuscripts. But a trail of references to it can be found in the letters of the Spataro correspondence, spanning nineteen years and involving five different correspondents. From these it appears that Tinctoris's motet served as a model for the solution of knotty problems of mensural usage, imperfection, alteration, coloration and proportions.

That such a work by one of the foremost composer-theorists of the age, a work still known and cited by theorists one generation younger, should have disappeared is greatly to be regretted. It must have belonged to a category of compositions considered as brain-teasers – puzzles to be worked out, bit by bit, until the pieces fell into place. Gafurius is known to have written one such work, which he mentions in his *Tractatus practicabilium proportionum* of c. 1481–3, the early version of Book IV of the *Practica musicae*.⁴ Speaking about the effect of proportions as applied to successive sections of music, he

² 'la messa de *Dixerunt discipuli* cum le annotation di quelli modi dove sarà bisogno . . . Haveria charo che facesti si possibil fosse in modo di uno comento sopra quello *Difficiles* di Tintoris acciò lo potesse bene intendere' (letter of 20 December 1523, Vatican City Vat. lat. 5318, fol. 135^v). On the Mass, see below, p. 90 and note 119.

³ 'et Tinctoris in tenore sui magistralis moteti. *Difficiles alios delectat pangere cantus* decenter consignavit' (Franchinus Gafurius, *Practica musicae*, trans. C. A. Miller, *Musico-logical Studies and Documents* 20 (n.p., 1968), p. 86). Irwin Young (*The Practica musicae of Franchinus Gafurius* (Madison, 1969), p. 87) mistook the title of Tinctoris's motet for part of the succeeding sentence and entitled the motet *Magistralis*.

⁴ See C. A. Miller, 'Early Gaffuriana: New Answers to Old Questions', *Musical Quarterly*, 56 (1970), pp. 367–88, esp. pp. 374–80.

refers to 'our motet to Johannes Tinctoris, *Nunc eat et veteres*'.⁵ It is likely that this motet was written in response to *Difficiles alios*, perhaps during the time when Gafurius and Tinctoris were together in Naples, between 1478 and 1480.⁶ Theirs must have been a relationship of friendly rivalry – unlike that of Gafurius and Spataro, which ended in mutual acrimony.

If Tinctoris's motet were still to exist, it would probably be found not in a source of practical music but in a collection of didactic music examples, either forming a whole or scattered in a manuscript containing several treatises. There are two such collections in early-sixteenth-century manuscripts: Perugia, Biblioteca Comunale Augusta, MS 1013 (olim m 36) [Perugia 1013] and Bologna, Civico Museo Bibliografico Musicale, MS A 71 (olim 159) [Bologna A 71].⁷ To our pleasure and profit, *Difficiles alios* occurs in the former, as the last of a series of examples appended to an anonymous treatise on proportions. It has escaped detection so far because the author's name, 'Tentoris', is not written above the piece but under the first notes of the superius (see Figure 1). The three-voice motet, in two *partes*, covers four openings of the manuscript (fols. 118^v–122) and is copiously annotated. The notes concern the proportions, the mensurations, and difficult examples of imperfection and alteration. The tenor in each *pars* is provided with a *resolutio*. Gafurius was certainly justified in calling it a 'pedagogical' motet.

Before I turn to a consideration of *Difficiles alios* and its marginal annotations, I shall examine the manuscript in which it is found and the similar collection of examples in Bologna A 71.

PERUGIA 1013 AND ITS TREATISE ON PROPORTIONS

Perugia, Biblioteca Comunale Augusta, MS 1013 (olim m 36) is a paper manuscript measuring 210 × c. 160 mm and consisting of 139

⁵ 'et ipsae proportionones virtutes proprias operari noscuntur ut diffusius patet in moteto nostro ad Joannem Tinctoris: *Nunc eat & veteres* et in quampluribus aliorum compositionibus' ('and the proportions themselves are known to effect their particular powers, as is more amply evident in our motet to Johannes Tinctoris, *Nunc eat et veteres*, and in many compositions of others'), Bologna, Civico Museo Bibliografico Musicale, MS A 69, fols. 2^v–3.

⁶ On the relations between Gafurius and Tinctoris, see Miller, 'Early Gaffuriana', p. 377.

⁷ The Segovia manuscript (Cathedral, MS s.s. [Segovia s.s.]) contains a small section in which are twelve proportional duos by Agricola, Obrecht, Adam, Roelkin, and Tinctoris (fols. cc–ccv^v). Of the six attributed to Tinctoris, two are also found in the Perugia manuscript.



folios.⁸ The main scribe, Johannes Materanensis, has obligingly signed his name and included the date in two places: 'In Venetijs. m.cccc.viii. Die xxj Junij. Domi[n]us Johannes Materanensis ad suam utilitatem scripsit' (fol. 45^v) and '1509, 7 Julij' (fol. 123). The manuscript has been in Perugia since the sixteenth century; it belonged to the merchant and music-lover Raffaele Sozi, founder of a musical academy in Perugia, who also owned the late-fifteenth-century musical manuscript Perugia, Biblioteca Comunale Augusta, MS 431 [Perugia 431].⁹

Perugia 1013 contains various treatises in the hand of Johannes Materanensis, and some preliminary material and scattered musical compositions added later by different hands:

- 1 fol. 1. Genealogy of Jubal and Tubalcain (Genesis 4.20–2) and three proverbs, each headed 'Salomon' (Proverbs 21.20 (first two words only), 14.13, Ecclesiastes 7.4 (v.5 in the Vulgate)). According to Genesis, Jubal is 'the father of all such as handle the harp and organ', his half-brother Tubalcain 'an instructor of every artificer in brass and iron'.¹⁰ The three proverbs have nothing to do with music; they counsel the wise man to prefer sorrow over laughter.
- 2 fols. 1^v–2. An eleven-line staff showing the note names, clefs, hexachords, and Greek note names, together with an explanation of where mutations are to be made, followed by four clausulae written in black longs with the *subsemitonium modi* indicated: A–G#–A, G–F#–G, E–D#–E, D–C#–D, labelled 'Tertius ordo'.¹¹

⁸ A brief description may be found in G. Mazzatinti, *Inventari dei manoscritti delle biblioteche d'Italia*, v: *Ravenna, Vigevano, Perugia* (Forlì, 1895), p. 228. The table of contents given in A. Seay, 'An "Ave maris stella" by Johannes Stochem', *Revue Belge de Musicologie*, 11 (1957), pp. 93–4, is not entirely accurate. The revisions made by Jan Herlinger in his description of the manuscript in 'The Lucidarium of Marchetto of Padua: A Critical Edition, Translation, and Commentary' (Ph.D. thesis, University of Chicago, 1978), pp. 100–2, have been incorporated here. I have not seen the manuscript itself but worked from a photocopy.

⁹ On this academy, see A. W. Atlas, 'The Accademia degli Unisoni: A Music Academy in Renaissance Perugia', *A Musical Offering: Essays in Honor of Martin Bernstein*, ed. E. E. Clinkscale and C. Brook (New York, 1977), pp. 5–23.

¹⁰ Medieval writers sometimes confused Jubal with his half-brother, attributing to him the invention of consonances and thus infusing the biblical passage with elements of Pythagoras's legendary discovery of the ratios of musical consonances in a blacksmith's workshop. The different traditions concerning the inventor of music have been traced by P. E. Beichner, *The Medieval Representative of Music, Jubal or Tubalcain?*, Texts and Studies in the History of Medieval Education 2 (Notre Dame, 1954). For a broader historical inquiry see J. W. McKinnon, 'Jubal vel Pythagoras, quis sit inventor musicae?', *Musical Quarterly*, 64 (1978), pp. 1–28.

¹¹ The unusual D# may be explained by the scribe's familiarity with Marchetto da Padova's *Lucidarium*, where this note is specified (see Herlinger, 'The Lucidarium', p. 353), or more likely the *Calliopea legale* of Johannes Hothby, whose 'terzo ordine' includes D#; see E. de Coussemaeker, *Histoire de l'harmonie au moyen âge* (Paris, 1852), p. 298.

- 3 fol. 3. A nine-line poem in which different characteristics are attributed to the seven note names. The hand of the main scribe begins here.
- 4 fol. 3^v. Guidonian hand.
- 5 fols. 4–5. *Regule musices plane secundum Marchum de Padua*. As Jan Herlinger points out, this is not, as Albert Seay thought, 'little more than a set of rubrics taken from the following *Lucidarium*, serving as a table of contents', but a brief work on mutation, drawn only in part from Marchetto.¹²
- 6 fols. 5–45^v. Marchetto da Padova, *Lucidarium*.¹³
- 7 fols. 46–46^v. *Regula de contrapunto*. Tables of intervals and chords.
- 8 fols. 47–68^v. *Questiones et solutiones*. Herlinger discovered that this section is largely taken from the *Regulae musicae planae* of Bonaventura da Brescia (1st edn, Brescia, 1497).¹⁴ From folio 55 on (= fols. a6 ff of the *Regulae*) the quotation is nearly literal and is mostly in Italian, as is Bonaventura's treatise, despite its Latin title. Folia 52^v–54^v treat the same matter as Bonaventura, 'De clavibus' and 'De mutationibus', but in Latin. The earlier part of the treatise, in the form of questions and answers in Latin, is only partly related to Bonaventura.¹⁵ Alberto Gallo has identified it as a version of the *Introductio musice secundum Johannem de Garlandia*, a treatise widely diffused in Italian sources. The Perugia reading represents an elaboration of Garlandia's treatise.¹⁶
- 9 fols. 69^v–70. Johannes Stochen, *Ave maris stella* a 2. Added by a later hand.¹⁷
- 10 fols. 71–78. *Regule figuratus [sic] cantus*. Treats note shapes, mensuration signs, ligatures, dots, imperfection, alteration, pauses, and the values of the notes in the various mensurations, with examples.
- 11 fols. 78–123. *Regule de proportionibus. Cum suis exemplis*. Proportions are explained in one paragraph on folios 78–78^v. Then follow examples 'de omnibus istis supradictis' on folios 78^v–81 in the form of tables

¹² Seay, 'An "Ave maris stella"', p. 93, n. 3; Herlinger, 'The Lucidarium', p. 100, n. 3.

¹³ Incomplete and in a poor version. See Herlinger, 'The Lucidarium', pp. 100–2.

¹⁴ *Ibid.*, p. 100, n. 3.

¹⁵ Recently, Albert Seay has published an edition of this section of the manuscript: *Anonymous (15th-Century), Quaestiones et solutiones*, Colorado College Music Press Critical Texts 2 (Colorado Springs, 1977). At that time he was unaware of the identity of the part taken from Bonaventura, but in a note 'To the Reader' dated 26 November 1978 inserted in the publication, in which he thanks Professor Giuseppe Massera, he acknowledges the incorporation of a large section of Bonaventura's treatise. The table of contents of Perugia 1013 given on pp. i–iii of his edition is largely identical with that in his earlier article.

¹⁶ Modern edition in E. de Coussemaeker, *Scriptorum de musica medii aevi nova series*, 4 vols. (Paris, 1864–76), 1, pp. 157–75 (*Scriptorum de musica* is hereafter abbreviated as CS). See F. A. Gallo, 'Tra Giovanni di Garlandia e Filippo da Vitry: note sulla tradizione di alcuni testi teorici', *Musica Disciplina*, 23 (1969), pp. 13–20, esp. p. 18. In his edition of the *Quaestiones*, Seay points out the connection of the beginning with Garlandia's treatise.

¹⁷ For a facsimile, transcription, and explanation of this complex proportional duo, see Seay, 'An "Ave maris stella"', pp. 96–108.

demonstrating the relationship of the notes under various proportions. On folio 81 begin the musical examples, proceeding from brief illustrations of the simple proportions for two voices, through longer duos involving several different proportions, then three-voice compositions (fols. 105^v–113), to a single four-voice work by Busnois in which each voice is in a different mensuration.¹⁸ Next follow six compositions on folios 114^v–118 illustrating major and minor *modus*. The last example belonging to this treatise is Tinctoris's *Difficiles alios*, on folios 118^v–122. Seemingly as an afterthought, on folios 122^v–123 are added 'alia proportionum exempla' in tabular form.

For a list of the musical examples with concordances, see Table 1.

- 12 fols. 123^v–136. *Regule scribendi secundum suam regulam et geometrie artis et cetera*.¹⁹ A treatise in Italian on calligraphy, which shows how to form each letter from the intersection of circles with a square, so that it has the initial appearance of being, as Seay thought, a treatise on geometry. Interestingly, the letters are Gothic minuscules, though Johannes Materanensis came from Matera, south-east of Naples, and wrote a delicate italic script. However, the Gothic hand was used for liturgical books at the time, and it is very similar to Gothic print. As a professional scribe, Johannes Materanensis would have had to be familiar with many different kinds of script.²⁰
- 13 fols. 136^v–139^v. Miscellaneous compositions, added by later hands: fols. 136^v–137. Agricola, [*De tous biens plaine*] a 3. Concordance in Florence, Biblioteca del Conservatorio di Musica Luigi Cherubini, MS Basevi 2439, fol. LXVI^v (Allexander). Modern edition in *Alexan-*

¹⁸ Modern edition by A. Seay in 'The *Conditio alme siderum* by Busnois', *Quadrivium*, 12 (1971), pp. 225–34.

¹⁹ 'Artis' instead of 'artem' may be due to the absence of a following word, indicated by the 'et cetera'.

²⁰ See, for example, the book prepared by Giovannantonio Tagliente, the Venetian calligrapher, which provides samples of various types of chancery hands, but also Venetian and Florentine mercantile hands, the Greek alphabet, and two kinds of Gothic, in addition to some highly fanciful personal styles (he was also the author of a book of patterns for embroidery). The 1525 edition of the *Opera di Giovannantonio Tagliente che insegna a scrivere de diverse qualità de lettere* has been published in a facsimile, edited by J. M. Wells (Chicago, 1952). The Newberry Library possesses a manuscript (Wing MS fzw 141.46) of Gothic majuscule and minuscule alphabets, copied for the monastery of Santa Giustina in Padua, which is similar to the Perugia treatise; both series of letters are constructed geometrically. Perhaps Johannes Materanensis's interest in musical proportions was stimulated by his experience as a scribe – or vice versa. The mathematical foundation of calligraphy is stressed in one of the earliest printed treatises, the *Theorica et pratica perspicacissimi Sigismundi de Fantis Ferrariensis in artem mathematice professoris de modo scribendi fabricandique omnes litterarum species*, which came out in Venice in 1516. De Fantis undertook the book because lettering 'anchora non è stata per qualunque modo dilucidata per essere li Praeceptorum non bene in le Mathematice disciplinae adoctati' (fol. +iii). I wish to thank James Wells, Associate Director of the Newberry Library, for acquainting me with the library's rich collection of manuscripts and early printed books on lettering, and for referring me to M. Meiss, *Andrea Mantegna as Illuminator* (New York, 1957), which includes the informative chapter 'The Alphabetical Treatises'.

dri Agricola opera omnia, ed. E. R. Lerner; *Corpus Mensurabilis Musicae* 22, v (n.p., 1970), p. 81.

fols. 137^v–138. 'Alex. agri.' (under first voice), 'Gislin' (under second voice), untitled duo. Modern edition, *ibid.*, p. 112.

fols. 138^v–139. Four canons, headed 'S.P. 15–Fuga–52'. While these are not in the hand of Raffaele Sozi, who made similar entries in Perugia 431 in 1557, they may be by one of his musical friends, who later joined together to form the Accademia degli Unisoni.²¹

fol. 139^v. [Roelkin], *De tous biens a 2* (incomplete). Concordances in Segovia s.s., fol. 195^v (Roelkin), and Warsaw, Biblioteka Uniwersytecka, MS Mf. 2016, fol. 25. Modern edition in F. Feldmann, 'Zwei weltliche Stücke des Breslauer Codex Mf. 2016', *Zeitschrift für Musikwissenschaft*, 13 (1930–1), pp. 263–4.

Slightly less than one-third of Johannes Materanensis's compendium is devoted to music examples showing a great variety of proportions, ranging from the briefest snippets to the pièce de résistance, Tinctoris's motet. Of these sixty-four examples, most are without text, and all are anonymous except the last and no. 56 (Busnois). I have succeeded in identifying forty of the remainder (see Table 1).

The examples are entered in a systematic fashion. First come duos showing the simple proportions, *dupla* ($\frac{2}{1}$), *tripla* ($\frac{3}{1}$), *quadrupla* ($\frac{4}{1}$), *quintupla* ($\frac{5}{1}$), *sextupla* ($\frac{6}{1}$), and *sesquialtera* ($\frac{3}{2}$), the first three paired with their opposites, *subdupla* ($\frac{1}{2}$), *subtripla* ($\frac{1}{3}$), *subquadrupla* ($\frac{1}{4}$). For these examples, nos. 1–10, Johannes Materanensis drew on a very logical source, Tinctoris's *Proportionale*, except for the *genus submultiplex*, for which Tinctoris gave only an example of *subdupla*. Johannes took the illustrations of *subdupla* and *subquadrupla* from later compositions in his anthology: no. 51 (which in turn comes from Tinctoris's *Liber de arte contrapuncti*), and no. 38 (so far unidentified; the tenor of no. 6 comes from an internal passage of no. 38; the superius has been newly composed). In all of the examples the proportions are not only labelled in Latin but also explained in Italian. For example, the first proportion, with C₁² in the superius and O in the tenor, bears the annotation: 'Dupla do [=due] semibreve per una, cioè per medium.' *Tripla*, with C₁³ in the superius and C in the tenor, has 'Tripla cio[è] tre semibreve per battuta.' *Battuta*, the Italian equivalent of *tactus*, always refers to the semibreve of the tenor, unless the part is

²¹ The academy was founded in 1561; none of the members listed by Atlas in 'The Accademia degli Unisoni', however, has the initials 'S.P.'.

Table 1 *Musical examples in the treatise on proportions in Perugia 1013*

No.	Fol.	Author	Title	Concordances	Remarks
Short examples <i>a</i> 2 illustrating single proportions					
1	81	[Tinctoris]		Prop., p. 16	dupla
2	81	[Tinctoris]		Cpt., p. 125	subdupla; = beginning of no. 51
3	81 ^v	[Tinctoris]		Prop., p. 13	tripla
4	81 ^v				subtripla
5	81 ^v	[Tinctoris]		Prop., p. 18	quadrupla
6	81 ^v				subquadrupla; T taken from no. 38 (S newly composed)
7	81 ^v	[Tinctoris]		Prop., p. 18	quintupla
8	82	[Tinctoris]		Prop., p. 19	sextupla
9	82	[Tinctoris]		Prop., p. 12	dupla, sesquialtera
10	82	[Tinctoris]		Prop., p. 19	sesquialtera
Longer examples <i>a</i> 2 illustrating mixed proportions					
11	82 ^v	[Tinctoris]	[Alleluia]	Cpt., p. 119; Segovia, fol. 204: Johannes Tinctoris; Bologna, p. 289 ('Si bona')	Ed. in Melin, p. 128.
12	83	[Tinctoris]		Cpt., p. 106; Bologna, p. 298	
13	83 ^v	[Tinctoris]	[Sanctus]	Cpt., p. 117; Bologna, p. 296 (<i>'Si vis'</i>)	= no. 19
14	84	[Tinctoris]	[Alleluia]	Cpt., p. 113; Bologna, p. 297 (<i>'Deus alleluia'</i>)	
15	84 ^v –85		[Crucifixus of Missa Pour l'amour d'une]	San Pietro v 80, fols. 159 ^v –160 (anon.)	
16	85 ^v –86				
17	86 ^v	[Tinctoris]	[Domine Deus rex celestis of Missa sine nomine no. 1]	Verona 755, fols. 18 ^v –19	Ed. in Melin, p. 6.
18	87				
19	87 ^v	[Tinctoris]	[Sanctus]	Cpt., p. 117; Bologna, p. 296 (<i>'Si vis'</i>)	= no. 13
20	88	[Tinctoris]	[Virginis Mariae laudes]	Cpt., p. 110; Bologna, p. 296 (<i>'Nolo'</i>)	
21	88 ^v	[Tinctoris]	[Alleluia]	Cpt., p. 116; Bologna, p. 289 (<i>'Do'</i>)	
22	89	[Tinctoris]	[Alleluia]	Cpt., p. 114; Bologna, p. 289 (<i>'michi'</i>)	

Table 1 (*cont.*)

No.	Fol.	Author	Title	Concordances	Remarks
23	89 ^v	[Tinctoris]	[D'ung aultre amer]	Segovia, fol. 197: Johannes Tinctoris; Bologna, p. 297	Chanson melody in T; ed. in Melin, p. 143.
24	90	[Tinctoris]		Prop., p. 20	See note 137 below.
25	90 ^v	[Tinctoris]		Prop., p. 54	
26	91				
27	91 ^v		[J'ay pris amours]		Chanson melody in S; different from nos. 37 and 40.
28	92				
29	92 ^v				
30	93	[Dufay]	[Qui cum Patre from Missa Sancti Antonii Viennensis]	Prop., p. 58; Trent 90, fols. 401 ^v –402 (<i>'Duffay'</i> over Kyrie)	Ed. in Besseler, II, pp. 60–1.
31	93				Canon: Tenor diapason tempus declinans obfugit unum.
32	93 ^v –94	[Faugues]	[Benedictus of Missa L'homme armé]	C.S. 14, fols. 146 ^v –147; Verona 761, fols. 120 ^v –121	Ed. in Schuetz, pp. 112–13. Perugia is closer to the Verona version.
33	94 ^v –95	[Faugues]	Agnus dei [II of Missa L'homme armé]	C.S. 14, fols. 148 ^v –149; Verona 761, fols. 122 ^v –123	Ed. in <i>ibid.</i> , pp. 115–16.
34	95 ^v –96		Agnus dei		Shows exactly the same succession of proportions as the two previous pieces.
35	96 ^v –97	[Dufay]	[Domine Deus rex celestis and Domine Deus agnus Dei from Missa Sancti Antonii Viennensis]	Trent 90, fols. 396 ^v –397 (<i>'Duffay'</i> over Kyrie)	Ed. in Besseler, II, p. 51 (bars 67–84) and p. 52 (Perugia omits CT in first section).
36	96 ^v –97		Duo		Added by later hand. Probably a verse from a Magnificat based on the solemn tone 8 (LU 218), clearly present in the first two phrases of the tenor.
37	97 ^v –98		[J'ay pris amours]		Chanson melody in S; different from nos. 27 and 40.
38	98 ^v				
39	99				
40	99 ^v –100		[J'ay pris amours]		Chanson melody in S; different from nos. 27 and 37.

Table 1 (cont.)

No.	Fol.	Author	Title	Concordances	Remarks
41	100 ^v		[La Spagna]		Ed. in Gombosi, pp. xli–xlii; different from no. 44.
42	101	[Faugues]	[Pleni of Missa L'homme armé]	C.S. 14, fols. 145 ^v –146; Verona 761, fols. 119 ^v –120	Ed. in Schuetze, p. 110.
43	101 ^v –102				
44	102 ^v		[La Spagna]		Ed. in Gombosi, pp. xlii–xliii; different from no. 41.
45	103				Possibly a setting of a basse dance tenor.
46	103 ^v –104		[Le serviteur]		Chanson melody in S; ed. in MRM 6, pp. 38–40.
47	104 ^v –105		[Gentil madonna]		Melody in T.
Larger examples <i>a</i> 3 illustrating mixed proportions					
48	105 ^v –106 ^v				
49	107	[Tinctoris]	[Catherina sponsa dei]	Cpt., p. 135	
50	107 ^v –108		[Ravy d'amours]	Dijon, fols. 129 ^v –130; Wolfenbüttel 287, fols. 53 ^v –54	
51	108 ^v –109	[Tinctoris]	[Sancte Johannes]	Cpt., p. 125; Bologna, p. 288 (no text)	
52	109 ^v –110				
53	110 ^v –111	[Dufay]	[Dieu gard la bone sans reprise]	Florence 176, fols. 24 ^v –26 ('Duffay'); Seville, fols. 91 ^v –92; Glogau, no. 180 ('Trag frischen muth')	Ed. in Besseler, vi, pp. 93–4.
54	111 ^v –112				
55	112 ^v –113				Ed. in Gombosi, pp. xxxviii–xl, who believes it to be a setting of a basse dance tune.
Example <i>a</i> 4 illustrating different mensurations simultaneously					
56	113 ^v –114	Busnoys	Conditor alme siderum		S in O3; A in C; T in C2; B in C3. Hymn melody in S. Ed. in Seay.
Duo without proportions					
57	113 ^v –114				

Table 1 (cont.)

No.	Fol.	Author	Title	Concordances	Remarks
Examples illustrating major and minor <i>modus</i>					
58	114 ^v –115				<i>a</i> 3; no proportions
59	115 ^v –116	[Tinctoris]	[Beatissima Beatrix]	Cpt., p. 128; Bologna, p. 286 (no text)	<i>a</i> 3
60	116 ^v				<i>a</i> 2; no proportions
61	117	[Tinctoris]		Prop., p. 24	<i>a</i> 2
62	117 ^v				<i>a</i> 2; no proportions
63	118	[Tinctoris]		Prop., p. 53	<i>a</i> 2
64	118 ^v –122	Tentoris	Difficiles alios		<i>a</i> 3; ed. in Appendix

- Besseler *Guglielmi Dufay opera omnia*, ed. H. Besseler, Corpus Mensurabilis Musicae 1, II (n.p., 1960), vi (n.p., 1964)
- Bologna, Civico Museo Bibliografico Musicale, MS A 71 (olim 159)
- Cpt. Johannes Tinctoris, *Liber de arte contrapuncti*, *Johannis Tinctoris opera theoretica*, ed. A. Seay, Corpus Scriptorum de Musica 22, II (n.p., 1975), pp. 11–157
- C.S. 14 Vatican City, Biblioteca Apostolica Vaticana, Archivio della Cappella Sistina, MS 14
- Dijon Dijon, Bibliothèque Municipale, MS 517
- Florence 176 Florence, Biblioteca Nazionale Centrale, MS Magl. XIX, 176
- Glogau Berlin, Deutsche Staatsbibliothek (formerly Preussische Staatsbibliothek), Mus. MS 40098 (Glogauer Liederbuch)
- Gombosi *Compositio di Meser Vincenzo Capirola, Lute-Book (circa 1517)*, ed. O. Gombosi (Neuilly-sur-Seine, 1955)
- Melin *Johanni[s] Tinctoris opera omnia*, ed. W. Melin, Corpus Mensurabilis Musicae 18 (n.p., 1976)
- MRM 6 *Eustachio Romano, Musica duorum, Rome, 1521*, ed. from the literary estate of Hans T. David by H. M. Brown and E. E. Lowinsky, Monuments of Renaissance Music 6 (Chicago, 1975)
- Prop. Johannes Tinctoris, *Proportionale musices*, *Johannis Tinctoris opera theoretica*, ed. A. Seay, Corpus Scriptorum de Musica 22, IIa (n.p., 1978)
- San Pietro v 80 Vatican City, Biblioteca Apostolica Vaticana, MS San Pietro v 80
- Schuetze *Collected Works of Faugues*, ed. G. C. Schuetze Jr. (Brooklyn, 1960)
- Seay A. Seay, 'The Conditor alme siderum by Busnoys', *Quadrivium*, 12 (1971), pp. 225–34
- Segovia, Catedral, MS s.s.
- Seville Seville, Biblioteca Colombina, MS 5–1–43
- Trent 90 Trent, Castello del Buon Consiglio, Biblioteca della Soprintendenza, MS 90
- Verona 755 Verona, Biblioteca Capitolare, MS DCCLV
- Verona 761 Verona, Biblioteca Capitolare, MS DCCLXI
- Wolfenbüttel 287 Wolfenbüttel, Herzog-August-Bibliothek, MS Extravag. 287

augmented or diminished, in which case the *battuta* falls on the minim or breve. Sometimes the scribe writes 'per uno battere' instead.

The foundation laid, Johannes branched out into longer duos, adding *subsesquialtera* ($\frac{2}{3}$) and *sesquitertia* ($\frac{4}{3}$) to his repertory (nos. 11–14). All four of these examples come from Tinctoris's *Liber de arte contrapuncti*. Most of the polyphonic examples in Book II of this treatise contain proportions, and Tinctoris must have thought of it as further training for those students who had mastered his *Proportionale*; certain it is that no beginner who had to learn from Book I the proper way to proceed from one concord to another could hope to make head or tail of the examples in Book II without considerable practical experience. The *Liber de arte contrapuncti* presupposes expertise in singing; it was not written for the amateur musician.

Examples 15 and 16 show coloration. The first is an extract from a Mass, the *Crucifixus a 2* of the anonymous *Missa Pour l'amour d'une*, found in Vatican City, Biblioteca Apostolica Vaticana, MS San Pietro B 80, fols. 159^v–160.²² The second has not been identified, but it may be a chanson; a *signum congruentiae* over a cadence at the mid-point suggests that it is a rondeau. No. 17, for two low voices, is the *Domine Deus rex celestis* section from Tinctoris's three-voice *Missa sine nomine* written for King Ferdinand of Naples, found in Verona, Biblioteca Capitolare, MS DCCLV.²³ It has a passage in *sesquialtera*.

No. 18, in C with semiminims written as white flagged minims, has a brief passage in *sesquitertia* (C) and an ending in *sesquialtera* ($\frac{3}{2}$). We may be fairly sure that this composition is not by Tinctoris, for he approved neither of showing a proportion by a single number²⁴ nor of

²² On this manuscript, see C. Hamm, 'The Manuscript San Pietro B 80', *Revue Belge de Musicologie*, 14 (1960), pp. 40–55. (Editor's note: see also C. Reynolds, 'The Origins of San Pietro B 80', p. 257–304 below.)

²³ Modern edition in *Johanni[s] Tinctoris opera omnia*, ed. W. Melin, Corpus Mensurabilis Musicae 18 (n.p., 1976), pp. 1–32. The *opera* are somewhat less than *omnia*, inasmuch as they do not include examples in the treatises excepting one duo that also appears in Segovia s.s. Unlike those of many other music treatises, a considerable number of examples in Tinctoris's *Proportionale musices* and *Liber de arte contrapuncti* are not only complete, but also musically significant compositions that should be presented among the composer's *opera omnia*, perhaps in a special appendix. (On this question, see also R. Strohm, 'Die Missa super "Nos amis" von Johannes Tinctoris', *Die Musikforschung*, 32 (1979), p. 40, n. 19.) Melin inexplicably omits the distichs heading the Mass in the Verona manuscript, the only known source: 'Ferdinande sacer inter divos referende cantica tintoris suscipe parva tui' ('O Ferdinand, holy enough to be numbered among the gods, accept the small compositions of your Tinctoris'). These words, so characteristic of the Renaissance spirit of individualism and patronage, probably stem, directly or indirectly, from a presentation copy of Tinctoris's compositions ('cantica') made for King Ferdinand, now lost.

²⁴ 'Sunt et alii et fere omnes qui maximo errore ducti se penitus expertes arithmeticæ

using the sign C to indicate *sesquitertia*.²⁵ However, the piece does use another type of proportion discussed by Tinctoris. The use of the word 'semiminim' for the white flagged minims would draw his displeasure, for Tinctoris rejected the term as a logical impossibility, since the minim (*minima*), by virtue of its name, is the 'least' of the note values.²⁶ What looks to us like a semiminim is for Tinctoris a minim in *proportio dupla*, the diminution being shown by the flag (as in the present example: the flagged minim is to be used under major prolation) or by coloration. Similarly, a white minim with a double flag or a black minim with a single flag – what other theorists called a *fusa* – was for Tinctoris a minim in *proportio quadrupla*.²⁷ When the sign C occurs in one voice of a composition against O in the other voices, it generally indicates augmentation. It is a question of whether C in all voices also indicates augmentation, in which case the *tactus* falls on the minim instead of the semibreve.²⁸ The annotations to no. 18 confirm that the *tactus* falls on the minim: 'Sexquitercia quattro minime per tre battute' and 'sexquialtera cioè tre minime per battuta'; the 'battuta' is a minim. If the duo is transcribed in 1:2 reduction, the proportional sections begin in the middle of a measure (something that occurs very rarely in these examples) and a pattern of notes irregular in $\frac{6}{4}$ emerges: $\text{♩} \text{♩} \text{♩} \text{♩}$. If, however, the duo is transcribed without reduction (the result of reading the voices in augmentation), the proportional sections fall correctly at the beginning of a measure and the above rhythmic pattern fits well into $\frac{6}{4}$:

manifestantes, una tantum cyphra, videlicet, eius numeri qui ad alium refertur omnes quas praticant proportionones signant' (*Proportionale musices, Johannis Tinctoris opera theoretica*, ed. A. Seay, Corpus Scriptorum de Musica 22 (n.p., 1975–8), IIa, p. 44. (Seay's edition of Tinctoris's theoretical works, which I have used throughout the paper, will be cited hereafter as Seay I, II, and IIa.) The criticism is echoed by Gafurius in his *Practica musicae*, trans. Miller, p. 156.

²⁵ Seay IIa, p. 48.

²⁶ 'Minima est nota valoris individui' ('a minim is a note of indivisible value'), states Tinctoris in his *Diffinitorium* (see C. Parrish, trans., *Dictionary of Musical Terms by Johannes Tinctoris* (New York and London, 1963), pp. 40–1). A century and a half earlier, Johannes de Muris had recognised and named a semiminim.

²⁷ The position that blackened minims are not semiminims forces Tinctoris into a lengthy discussion in his *Proportionale* on how to tell whether coloration means *proportio dupla*, *sesquialtera*, imperfection, or *reductio* (Seay IIa, pp. 16–17 and 20–2).

²⁸ Charles Hamm, in *A Chronology of the Works of Guillaume Dufay Based on a Study of Mensural Practice* (Princeton, 1964), has put forward the thesis that 'the beat was on the minim in pieces in major prolation dating from the first part of the century' (p. 24). This view has been contested by J. A. Bank, *Tactus, Tempo and Notation in Mensural Music from the 13th to the 17th Century* (Amsterdam, 1972), esp. chapter VII, 'Mensura facit tactum', in which he shows that the theorists quoted by Hamm speak of the *tactus* on the minim only when the part is to be read in augmentation.

♩ ♩ ♩ | ♩ ♩. Here $\odot$ in both voices indicates augmentation. No. 20, which is by Tinctoris, has $\odot$ in both voices; it must likewise be read in augmentation up to the first proportional sign.²⁹

$\odot$ or $\odot$ in the tenor does not always have the meaning of augmentation in Tinctoris's works. At the beginning of the *Difficiles alios* (see Appendix), where the tenor is in $\odot$, the other voices in $\circ$, all voices are to be read in *integer valor*, with minim equivalence. I believe that this usage reflects an earlier stage of Tinctoris's thought, for at the time he wrote the *Proportionale* he disapproved of the practice of using $\odot$ or $\odot$ as a sign of augmentation without some kind of rule, such as 'crescit in duplo' (Seay IIa, pp. 48–50). His example is taken from the *Missa Spiritus almus* of Domarto, whom he charges with having 'sinned intolerably', along with 'Regis, Caron, Boubert, Faugues, Courbet, and many others', including, he is chagrined to admit, Ockeghem and Busnois (Seay IIa, p. 49). There is another example in the *Proportionale* where $\odot$ in the tenor does not indicate augmentation (Seay IIa, p. 51). In his *Missa L'homme armé* Tinctoris uses both $\odot$ in *integer valor* and $\odot$ meaning augmentation, but the latter always with the canon 'crescit in duplum'.³⁰ By the time he wrote the *Liber de arte contrapuncti* (1477), Tinctoris seems to have acquiesced in the practice of his contemporaries, and uses $\odot$ and $\odot$ to indicate augmentation without any canon.

Nos. 19–22 come from the *Liber de arte contrapuncti* (curiously, no. 19 duplicates no. 13 – apparently the scribe took them from different sources, though the reading is the same in both). In nos. 20 and 21 *dupla superbipartiens tertias* ($\frac{8}{3}$) is introduced, in no. 22 *sesquioctava* ($\frac{9}{8}$). No. 23, a duo using the tenor of Ockeghem's *D'ung aultre amer*, is found under Tinctoris's name in Segovia s.s., fol. 197. Nos. 24–5 come from the *Proportionale*. The latter is one of the most complex examples in that treatise and illustrates 'Dupla, sesquialtera, sesquitercia et subsesquialtera in utroque [modo] imperfecto, tempore perfecto, prolatione maiori et minori' (Seay IIa, p. 54).³¹

²⁹ This example is concordant with Tinctoris's *Virginis Mariae laudes* in the counterpoint book (Seay II, pp. 110–12). Contrary to his usual practice, Seay transcribed the beginning of the superius in *integer valor*, without so indicating.

³⁰ See the modern edition in *Johanni[s] Tinctoris opera omnia*, ed. Melin, pp. 74, 105 and 109.

³¹ Seay's transcription (IIa, p. 54) of the first measure of the discantus should be emended to begin with a breve imperfected *ad totum* (six minims) and end with a semibreve G, thus eliminating the parallel ninths which are not sanctioned in Tinctoris's rules of counterpoint. Seay, who published his translation of the *Proportionale* in the same year that his first article on the Perugia manuscript appeared, failed to recognise any of the examples taken

Of the remaining duos (nos. 26–47), seven are based on well-known melodies and six are excerpts from Masses; it is quite likely that the remainder also fall into one of these two categories, which comprise the main types of duo composition in the late fifteenth century.³² When spinning a complicated counterpoint over a *cantus prius factus*, the pre-existent melody is usually presented in a straightforward manner. This is not the case with two of the *J'ay pris amours* settings, nos. 37 and 40, in which the melody itself also undergoes proportional manipulation. Normally, a voice taken from a polyphonic composition preserves the original rhythm (no. 27, on *J'ay pris amours*; no. 46, on *Le serviteur*; no. 47, on *Gentil madonna*); duos based on a basse dance tune present the melody in breves and longs (nos. 41 and 44, two settings of *La Spagna*, and no. 45, written on an unidentified basse dance melody). Two of the five identified Mass sections come from Dufay's *Missa Sancti Antonii Viennensis*, discussed in the *Proportionale*.³³ No. 30, the *Qui cum Patre*, is one of the examples quoted by Tinctoris, though his excerpt is shorter. He reproves Dufay for writing $\odot 3$ (the Perugia manuscript has $\frac{9}{3}$) instead of $\odot \frac{9}{4}$ when comparing three breves in perfect time with two in imperfect time. Curiously, though the sign is wrong in the Perugia manuscript, the annotation is correct: 'dupla sexquiquarta' ($\frac{9}{4}$). No. 35 consists of two excerpts from the Gloria of the same Mass, showing the alternation

from Tinctoris's treatise. Of *Difficiles alios* he says no more than: 'The Cantus appearing on f. 118^v has under its first notes the word "Tentoris"' ('An "Ave maris stella"', p. 95, n. 1).

³² On duos in fifteenth-century music, see D. Kämper, 'Das Lehr- und Instrumentalduo um 1500 in Italien', *Die Musikforschung*, 18 (1965), pp. 242–53; D. Kämper, *Studien zur instrumentalen Ensemblesmusik des 16. Jahrhunderts in Italien*, *Analecta Musicologica* 10 (Cologne and Vienna, 1970), pp. 86–112; and H. M. Brown, 'Eustachio's Historical Position', *Eustachio Romano, Musica duorum, Rome, 1521*, ed. from the literary estate of Hans T. David by H. M. Brown and E. E. Lowinsky, *Monuments of Renaissance Music* 6 (Chicago, 1975), chapter vi. This edition includes a transcription of the duo on *Le serviteur* from the Perugia manuscript (pp. 38–40), particularly interesting because it runs through the series of proportions $\frac{3}{2}, \frac{4}{3}, \frac{5}{4}, \frac{6}{5}, \frac{7}{6}, \frac{8}{7}, \frac{9}{8}, \frac{10}{9}$.

Recently Lawrence F. Bernstein has made a survey, the results of which he published as 'French Duos in the First Half of the Sixteenth Century', *Studies in Musicology in Honor of Otto E. Albrecht*, ed. J. W. Hill (Kassel and Clifton, N. J., 1980), pp. 43–87; in this article he discussed the duos of Perugia 1013. Independently he discovered a number of concordances with examples in Tinctoris's treatises. I wish to thank Professor Bernstein for placing the proofs of his article at my disposal before publication.

³³ Seay IIa, pp. 47 and 57–8. Besseler dates this work c. 1435–40; see *Guglielmi Dufay opera omnia*, ed. H. Besseler, *Corpus Mensurabilis Musicae* 1, II (n.p., 1960), p. v. This is the only Mass in which Dufay uses proportions other than *sesquialtera*, except for a brief passage in $\odot$ in the *Missa L'homme armé*. Charles Hamm has serious doubts about its authenticity, citing six examples of mensural usage that conflict with Dufay's normal practice; see *A Chronology of the Works of Guillaume Dufay*, pp. 105–10.

of C and 3. The Perugia anthology includes three duos from the *Missa L'homme armé* by Faugues, a composer to whom Tinctoris refers in the *Proportionale* and the *Liber de arte contrapuncti*.³⁴

All examples in the *Proportionale* from Tinctoris's pen are for two voices. The same is true, with two exceptions, of the examples in Book iv (on proportions) of Gafurius's *Practica musicae*. In fact most treatises on counterpoint give only two-voice examples. It is therefore gratifying to find in the Perugia manuscript a series of three-voice compositions illustrating proportions (nos. 48–55). Two pieces in this section come from Tinctoris's counterpoint treatise (nos. 49 and 51). No. 48, a lengthy composition with an unusual passage in $\frac{5}{2}$, may be a movement from a Mass written before 1450; there is no imitation, and the tenor and contratenor move predominantly in breves and longs, with many ligatures. No. 50 is identical with the three-part chanson *Ravy d'amours* found in Dijon, Bibliothèque Municipale, MS 517 [Dijon 517], and Wolfenbüttel, Herzog-August-Bibliothek, MS Extravag. 287 [Wolfenbüttel 287]. The final phrase pits *sesquialtera* through coloration in the superius against *sesquialtera* through the sign $\frac{3}{2}$ in the contratenor and *proportio dupla* in the bass.³⁵ No. 53 is Dufay's *Dieu gard la bone sans reprise*, which illustrates *proportio sesquialtera*, as do nos. 52 and 54. Otto Gombosi believes that no. 55 is probably a setting of a basse dance melody, so far unidentified; the tenor moves throughout in semibreves under the signature C .³⁶

No. 56, Busnois's *Conditor alme siderum*, is the only composition for four voices and the only one, aside from Tinctoris's *Difficiles alios*, to carry a composer's name. It is not known from any other source.³⁷ Only in the bass are there proportional changes, but each voice is written under a different signature, and all four voices have passages

³⁴ Seay IIa, p. 46, and II, pp. 12, 143, 156. Seay noted (I, p. 25) that Tinctoris mentions or quotes six Masses found in Vatican City, Biblioteca Apostolica Vaticana, Archivio della Cappella Sistina, MS 14 [Cappella Sistina 14], suggesting that 'Tinctoris may well have worked with this codex'. It also contains Faugues's *Missa L'homme armé*.

³⁵ It is not an example that Tinctoris would have viewed with favour, since it regards the notes under *sesquialtera* in the contratenor as in *prolatio maior*; see his criticism of Domarto in this respect in chapter 5 of Book III of the *Proportionale* (Seay IIa, p. 56; in sentence 16 on p. 56 the following words are missing after 'Domarto': 'semibreves perfecit et breves imperfecit, secundus, scilicet Cousin, e converso'). Wolfenbüttel 287 and Dijon 517, which are quite similar, present better readings than the Perugia manuscript.

³⁶ *Composizioni di Meser Vincenzo Capirola, Lute-Book (circa 1517)*, ed. O. Gombosi (Neuilly-sur-Seine, 1955), p. xxxviii.

³⁷ See Seay, 'The *Conditor alme siderum*'.

in coloration. No. 57 is a duo without proportions; it may have been added to fill the space beneath the hymn.

On folios 114^v–118 are found six compositions illustrating major and minor *modus*. They have a place in a treatise on proportions because, as Tinctoris asserts, 'it should be considered in which mode, *tempus* and prolation proportions are to be made'.³⁸ Indeed, two of the examples come from the *Proportionale*, one from the *Liber de arte contrapuncti*. The anonymous compositions have no proportions. The scribe has indicated the proper mode, *tempus* and prolation in the tenor for all of these works.

By the time the student has reached Tinctoris's *Difficiles alios* on folios 118^v–122, he has had a thorough grounding in proportions and fair practice in modal mensurations. Even if he was not familiar with Tinctoris's treatises on proportions and counterpoint, he had now studied twelve music examples from each of them.³⁹ Tinctoris's motet, which is not mentioned in any of his treatises, is, as it were, the musical equivalent of a bar examination. Having played it through successfully, the performer or singer could then consider himself a 'musicus', one 'who, after careful investigation of theory through the benefit of observation, takes up the calling of singing'.⁴⁰

³⁸ *Proportionale*, Book III, chapter 5 (Seay IIa, p. 53).

³⁹ The readings do not differ substantially from the manuscripts of Tinctoris's treatises known at present. There is some variance, as might be expected, in ligatures and cadential ornamentation. In no. 20, concordant with *Virginis Mariae laudes* from the counterpoint treatise (Seay II, pp. 110–12), white semiminims with double flags are used in place of black semiminims with single flags. An annotation to no. 61, concordant with an example in the *Proportionale* (Seay IIa, p. 24), is helpful in correcting two passages in Seay's transcription that should have been read in *sesquialtera*: in bars 7 and 8 after the sign Φ the three black semibreves are labelled 'sesquialtera'. Therefore they are counted together with the following white semibreve to make a perfect *tempus*, and the preceding breve D must be perfect. The blackened breve and semibreve in bars 2–3 of the same section are also to be read in *sesquialtera*. J. A. Bank, in his transcription of this example (*Tactus, Tempo and Notation*, p. 164, Example 90), though purportedly based on Seay, falls into a different error; in bars 7–8 the black breve is transcribed as a semibreve. I do not understand the statement (p. 165) that 'In the Tenor, Modus minor perfectus alternates with Modus maior perfectus and Modus minor imperfectus, indicated by means of special signs over the system, which Tinctoris thinks is the best way of notation.' There is only one sign, of *modus maior perfectus, minor perfectus* at the beginning of the tenor, and blackened notes achieve imperfection of the *modus*. In none of his examples does Tinctoris change the *modus* within a composition.

⁴⁰ 'Musicus est qui perpensa ratione beneficio speculationis canendi officium assumit' (Tinctoris, *Diffinitorium*; Parrish, *Dictionary*, p. 44) – a definition that is largely taken over from Boethius: 'Is vero est musicus, qui ratione perpensa canendi scientiam non servitio operis sed imperio speculationis adsumpsit' (*De institutione musica*, ed. G. Friedlein (Leipzig, 1867), p. 224), but with the important difference that Boethius's *musicus* does not deign to sing.

BOLOGNA A 71 AND ITS PROPORTIONAL EXAMPLES

Mainly a collection of theoretical treatises, Bologna, Civico Museo Bibliografico Musicale, MS A 71 (olim 159), probably dates from the second decade of the sixteenth century. It has been described a number of times – by Gaetano Gaspari, Higinio Anglès, Robert Stevenson, Valerie Weinhouse O'Donoghue, Karl-Werner Gümpel, and Winfried Kirsch⁴¹ – yet no one description is satisfactory for both the musical and the theoretical sections. In the following catalogue, the description of the treatises is taken from the study of Karl-Werner Gümpel,⁴² to which the reader is referred for further details.

Bologna A 71 is a paper manuscript of 303 pages, numbered in a later hand, measuring 215 × 145 mm.⁴³ Its contents are as follows:

- pp. 1–131. Franchinus Gafurius, *Theoricum opus musice discipline* (a copy of the 1480 Naples edition).
- pp. 134–90. Guillelmus de Podio, *Enchiridion de principiis musice discipline*,⁴⁴ datable after 1495, since it refers to Podio's *Commentarii musices* published in that year.
- pp. 191–207. Anonymous Spanish treatise beginning 'Cinco son las figuras de canto de organo [*sic*]', based on Book 7 of Podio's *Commentarii musices*.⁴⁵
- pp. 207–20. Six motets for four and three voices (see Table 2, nos. 1–6). Valerie O'Donoghue (crediting Joshua Rifkin) and Winfried Kirsch discovered independently that the first two motets are compositions of Andreas de Silva and Adrian Willaert, respectively. The third motet carries the name 'Antonius Marlet', *maestro de capilla* at the Cathedral of Tarragona in the early sixteenth century, and Anglès thought that all of the motets were of Spanish origin. Both Anglès and Kirsch erroneously list the *secunda pars* of no. 5 as a separate motet.

⁴¹ For the literature, see *Census-Catalogue of Manuscript Sources of Polyphonic Music 1400–1550*, Renaissance Manuscript Studies 1, 1 (n.p., 1979), p. 68, to which should now be added W. Kirsch, *Die Motetten des Andreas de Silva: Studien zur Geschichte der Motette im 16. Jahrhundert* (Tutzing, 1977), pp. 24–7.

⁴² K.-W. Gümpel, 'Das Enchiridion de principiis musice discipline des Guillelmus de Podio', *Gesammelte Aufsätze zur Kulturgeschichte Spaniens*, Spanische Forschungen der Görresgesellschaft, ser. 1, 27 (Münster, Westphalia, 1973), pp. 359–96; see esp. pp. 359–62. I wish to thank Professor Gümpel for his kind answers to my questions.

⁴³ *Census-Catalogue*, 1, p. 68. I have worked from a microfilm.

⁴⁴ Edited by Gümpel, 'Das Enchiridion', pp. 362–96.

⁴⁵ Modern edition by H. Anglès, 'La notación musical española de la segunda mitad del siglo XV. Un tratado desconocido de Guillelmus . . . de Podio', *Anuario Musical*, 2 (1947), pp. 161–73. Gümpel has recently edited a Catalan version of this treatise; see 'Eine katalanische Version der Mensurallehre des Guillelmus de Podio', *Orbis Musicae*, 2 (1973–4), pp. 41–52.

Table 2 Musical examples in Bologna A 71

No.	Page	Author	Title	Concordances	Remarks
1	207–8	[Andreas de Silva]	In illo tempore loquente Jesu, <i>a 4</i>	See Kirsch, p. xiii.	Ed. in Kirsch, pp. 21–3, and MRM 4, pp. 219–22.
2	209–10	[Adrian Willaert]	Regina celi letare; <i>2.p.</i> Resurrexit sicut dixit, <i>a 4</i>	See MRM 3, p. 152.	Ed. in MRM 4, pp. 114–19.
3	211–12	Antonius Marlet	O quam pulcra es et quam decora, <i>a 3</i>		Ed. in O'Donoghue, pp. 63–6. The opening motive is strikingly similar to Gombert's <i>Quam pulchra es</i> (ed. in Schmidt-Görg, pp. 73–7).
4	213–14		Hodie Maria virgo puerum offert, <i>a 4</i>		Heading: In purificatione beate Marie. Ed. in O'Donoghue, pp. 67–74.
5	215–18		Salve vera parens Christi; [<i>2.p.</i>] Per sacros uteri fructus, <i>a 4</i>		Ed. in O'Donoghue, pp. 75–90.
6	219–20		[T]u quem virgineo peperisti corpore, <i>a 4</i>		Proportions in all voices.
7	232–5		textless, <i>a 2</i>		A series of cadential figures and melodic formulas over breves in a lower voice.
8	251–2	Jusquinus	Si con gi pran [Se congé prens], <i>a 6</i>	To the list in Smijers, p. xv, add: Bologna A 71, fol. 49 ('O Maria Virgo sanctissima'; T only); Pal. lat. 1980–1, fol. 74 (anon.; 6.p., T and B only).	Ed. in Smijers, pp. 28–32.
9	254		textless, <i>a 2</i>		Counterpoint over an unidentified cantus firmus in longs and breves.
10	255–6		textless, <i>a 2</i>		Counterpoint over a plainchant melody (= Responsory Astiterunt reges terrae, LU 771, up to <i>repetenda</i> , after which it differs, except for the last melisma).
11	258		Benedicta. Virgo		Two different sections, S only.
12	259–62	Tinctoris (?)	O prece; <i>2.p.</i> without text, <i>a 4</i>		Written at end of B in 2.p.; Bene correctum est/Tinctoris'. The 2.p. illustrates various proportions. Ed. in O'Donoghue, pp. 91–104.

Table 2 *Musical examples in Bologna A 71*

No.	Page	Author	Title	Concordances	Remarks
1	207-8	[Andreas de Silva]	In illo tempore loquente Jesu, <i>a 4</i>	See Kirsch, p. xiii.	Ed. in Kirsch, pp. 21-3, and MRM 4, pp. 219-22.
2	209-10	[Adrian Willaert]	Regina celi letare; 2. <i>p.</i> Resurrexit sicut dixit, <i>a 4</i>	See MRM 3, p. 152.	Ed. in MRM 4, pp. 114-19.
3	211-12	Antonius Marlet	O quam pulcra es et quam decora, <i>a 3</i>		Ed. in O'Donoghue, pp. 63-6. The opening motive is strikingly similar to Gombert's <i>Quam pulcra es</i> (ed. in Schmidt-Görg, pp. 73-7). Heading: In purificatione beate Marie. Ed. in O'Donoghue, pp. 67-74.
4	213-14		Hodie Maria virgo puerum of-[f]ert, <i>a 4</i>		Ed. in O'Donoghue, pp. 75-90.
5	215-18		Salve vera parens Christi; [2. <i>p.</i>] Per sacros uteri fructus, <i>a 4</i>		
6	219-20		[T]u quem virgineo peperisti corpore, <i>a 4</i>		Proportions in all voices.
7	232-5		textless, <i>a 2</i>		A series of cadential figures and melodic formulas over breves in a lower voice.
8	251-2	Jusquinus	Si con gi pran [Se congié prens], <i>a 6</i>	To the list in Smijers, p. xv, add: Bologna R 142, fol. 49 ('O Maria Virgo sanctissima'; T only); Pal. lat. 1980-1, fol. 74 ^v (anon.; 6. <i>p.</i> , T and B only).	Ed. in Smijers, pp. 28-32.
9	254		textless, <i>a 2</i>		Counterpoint over an unidentified cantus firmus in longs and breves.
10	255-6		textless, <i>a 2</i>		Counterpoint over a plainchant melody (= Responsory Astiterunt reges terrae, LU 771, up to <i>repelenda</i> , after which it differs, except for the last melisma).
11	258		Benedicta. Virgo		Two different sections; S only.
12	259-62	Tintoris (?)	O preco; 2. <i>p.</i> without text, <i>a 4</i>		Written at end of B in 2. <i>p.</i> : 'Bene correctum est/Tintoris'. The 2. <i>p.</i> illustrates various proportions. Ed. in O'Donoghue, pp. 91-104.

Table 2 (cont.)

No.	Page	Author	Title	Concordances	Remarks
12a	263-4	[Tintoris?]	O precor, <i>a 4</i>		The note at the end of the S, 'Ad longum', indicates that this is a resolution of the 2.p. of the preceding piece. Ed. in O'Donoghue, pp. 105-10.
13	286	[Tintoris]	[Beatissima Beatrix], <i>a 3</i>	Cpt., p. 128; Perugia, fols. 115 ^v -116 (no text, anon.)	Ed. in O'Donoghue, pp. 111-12.
14	287	[Tintoris?]	textless, <i>a 3</i>		T (except notes 4-8) same as no. 18 below. Ed. in O'Donoghue, pp. 113-14.
15	288	[Tintoris]	[Sancte Johannes Baptista], <i>a 3</i>	Cpt., p. 125; Perugia, fols. 108 ^v -109 (no text, anon.)	Ed. in O'Donoghue, pp. 115-16.
16	289	[Tintoris]	Do, <i>a 2</i>	Cpt., p. 116 ('Alleluia'); Perugia, fol. 88 ^v (no text, anon.)	Ed. in O'Donoghue, p. 117.
17	289	[Tintoris]	michi, <i>a 2</i>	Cpt., p. 114 ('Alleluia'); Perugia, fol. 89 (no text, anon.)	Ed. in O'Donoghue, p. 118.
18	290	[Tintoris]	Si bona, <i>a 2</i>	Cpt., p. 119 ('Alleluia'); Perugia, fol. 82 ^v (no text, anon.); Segovia, fol. 204 (no text)	Ed. in Melin, p. 128; O'Donoghue, pp. 119-20.
19	290		Philippe . Nescitis quid petatis, <i>a 3</i>		Puzzle piece; the T consists of the numerals '1' and '2' on various degrees of the scale with the canonic instructions 'In Diapente et Diapason'; the CT is to be read backwards ('ut cancer'). Canon; CT derived from T.
20	291		textless, <i>a 3</i>		Ed. in O'Donoghue, p. 121.
21	296	[Tintoris]	Si vis, <i>a 2</i>	Cpt., p. 117 ('Sanctus'); Perugia, fols. 83 ^v and 87 ^v (no text, anon.)	
22	296	[Tintoris]	nolo, <i>a 2</i>	Cpt., p. 110 ('Virginis Mariae laudes'); Perugia, fol. 88 (no text, anon.)	Ed. in O'Donoghue, p. 122.
22a	296	[Tintoris]	Ego volo		Although it is written like a separate piece, this is the last phrase of the S of the previous piece.

Table 2 (cont.)

No.	Page	Author	Title	Concordances	Remarks
23	297	[Tintoris]	Dung aultre, <i>a 2</i>	Segovia, fol. 197; Perugia, fol. 89 (no text, anon.)	Ed. in Melin, p. 143; O'Donoghue, pp. 123-4.
24	297	[Tintoris]	Deus alleluia, <i>a 2</i>	Cpt., p. 113 ('Alleluia'); Perugia, fol. 84 (no text, anon.)	Ed. in O'Donoghue, p. 125.
25	298	[Tintoris]	textless, <i>a 2</i>	Cpt., p. 106; Perugia, fol. 83 (anon.)	Ed. in O'Donoghue, p. 126 (as a 3-part piece, including no. 26).
26	298	[Tintoris?]	textless (S only)		An alternative version of the S of no. 25, without proportions.
27	298		Donec ponam inimicos tuos, <i>a 4</i>		'Primus tonus'. Ps. 109, v. 2. Falsobordone.
28	298		Potens in terra erit, <i>a 4</i>		'Tercius tonus'. Ps. 111, v. 2. Falsobordone.
29	299		Sit nomen domini benedictum, <i>a 4</i>		'Quartus tonus'. Ps. 112, v. 2. Falsobordone.
30	300		Magna opera domini, <i>a 4</i>		'Secundus tonus'. Ps. 110, v. 2. Falsobordone.
31	300		Quoniam confirmata est, <i>a 4</i>		'Sextus tonus'. Ps. 116, v. 2. Falsobordone.

- Bologna R 142
Cpt. Bologna, Civico Museo Bibliografico Musicale, MS R 142
Johannes Tinctoris, *Liber de arte contrapuncti*, *Johannis Tinctoris opera theoretica*, ed. A. Seay, Corpus Scriptorum de Musica 22, II (n.p., 1975), pp. 11-157
- Kirsch
Melin
MRM 3, 4
O'Donoghue
Pal. lat. 1980-1
Perugia
Segovia
Schmidt-Görg
Smijers
- Andreas de Silva: Opera omnia*, ed. W. Kirsch, Corpus Mensurabilis Musicae 49, I (n.p., 1970)
Johanni[s] Tinctoris opera omnia, ed. W. Melin, Corpus Mensurabilis Musicae 18 (n.p., 1976)
The Medici Codex of 1518, ed. E. E. Lowinsky, Monuments of Renaissance Music 3, 4 (Chicago, 1968)
V. W. O'Donoghue, 'A Music Manuscript from the Spanish College of Bologna: A Study of the Manuscript Bologna, Civico Museo Bibliografico Musicale, MS A 71 (olim 159)' (M.M. thesis, University of Illinois at Urbana-Champaign, 1972)
Vatican City, Biblioteca Apostolica Vaticana, MS Pal. lat. 1980-1
Perugia, Biblioteca Comunale Augusta, MS 1013 (olim M 36)
Segovia, Catedral, MS s.s.
Nicolai Gombert opera omnia, ed. J. Schmidt-Görg, Corpus Mensurabilis Musicae 6, v (n.p., 1961)
Werken van Josquin des Prés, ed. A. Smijers, Aflevering 3: *Wereldlijke Werken*, I (Amsterdam, 1925)

- 5 pp. 222–7. Anonymous treatise beginning 'Incipit compendium musicale de diversis questionibus et diffinitionibus'. This is a miscellaneous and unordered collection of definitions, many of which are taken, without acknowledgement, from Marchetto's *Lucidarium*.
- 6 pp. 228–30. Six sections on the division of the monochord.
- 7 pp. 232–5. A series of examples showing (a) clausulae in various modes (one voice only); (b) clausulae that fit against a tenor pattern of three breves, A, B, C; (c) clausulae that fit against a tenor moving B, C, D; (d) ornamental figures written over single breves or patterns of three breves – all without clef and therefore applicable to various modes; (e) a sixty-four-measure example over an unchanging bass (except the penultimate measure), showing how it is possible to combine a selection of the above figures into a continuous melodic line.
- No explanation accompanies the examples (contrary to Kirsch's assumption, they do not belong to the previous treatise), which seem to form a practical compendium showing how to sing or play a counterpoint over a lower voice moving in breves. They would be of use to a singer improvising *super librum*,⁴⁶ an instrumentalist playing over a basse dance melody, or a singer wishing to ornament. Recently, Howard Mayer Brown has reconstructed a table of ornaments for fifteenth-century chansons based on variant readings found in chanson manuscripts and on the ornamentations of the Buxheim Organ Book.⁴⁷ He believes that '*passaggi* were probably expected as a matter of course from instrumentalists throughout the entire sixteenth century',⁴⁸ and that this practice extended back to the fifteenth century; he cites a passage from Adam von Fulda on the corruption of music by the 'worst usages of instrumentalists'. The examples in Bologna A 71 seem to form the earliest 'manual' of *passaggi* known; they confirm Brown's thesis and offer an Italian counterpart to his examples from French and German sources.
- 8 pp. 241–8. Excerpts from Gafurius, *Practica musicae*, Book IV, chapters 1–3 and 5–6: a compendium of the most common proportions, together with the relevant music examples.
- 9 pp. 251–2. Josquinus, *Si con gi pran* [*Se congie prens*] (see Table 2, no. 8). This chanson was probably included in the manuscript because of the scribe's interest in proportions; it has several passages in *sesquialtera*.
- 10 pp. 254–64. A series of musical examples, ranging from one to four voices, most without text (see Table 2, nos. 9–12a).
- 11 pp. 266–76. Anonymous Spanish treatise beginning 'Canto es movi-
- ⁴⁶ On singing *super librum*, a practice discussed by Tinctoris, see C. Wright, 'Performance Practices at the Cathedral of Cambrai 1475–1550', *Musical Quarterly*, 64 (1978), pp. 295–328, esp. pp. 313–22.
- ⁴⁷ 'Improvised Ornamentation in the Fifteenth-Century Chanson', *Quadrivium*, 12 (1971), pp. 235–58. ⁴⁸ *Ibid.*, pp. 239–40.

- miento de voces concordante', which has some parallels with Podio's *Enchiridion* and *Commentarii musicales*.
- 12 p. 284. Excerpt from Gafurius, *Practica musicae*, identical with that on p. 248.
- 13 pp. 286–91. Eight anonymous music examples, five of which come from Tinctoris's *Liber de arte contrapuncti*, though the scribe has omitted the text or changed the incipit (see Table 2, nos. 13–20), effectively hiding their authorship up to now.
- 14 pp. 296–8. Six anonymous music examples, four of which are taken from the *Liber de arte contrapuncti*, likewise with spurious incipits; another is found under Tinctoris's name in Segovia s.s. (see Table 2, nos. 21–6).
- 15 pp. 298–300. Five four-part settings of psalm tones in falsobordone style (see Table 2, nos. 27–31).⁴⁹ Since the second verse is given in each case, *alternatim* performance with chant is indicated. Thus the psalm tones, ornamented in the superius, begin with the reciting note, not the intonation.⁵⁰

The excerpts from Gafurius's *Practica musicae* provide a *terminus post quem* of 1496. All the treatises and the short musical examples could have been entered before 1500, but the inclusion of motets by Andreas de Silva and Adrian Willaert makes a later dating mandatory, c. 1515–20.⁵¹ The manuscript seems to be in one hand; the slight variants may be due to the use of different pens.

The compiler of Bologna A 71, who may well have been a student at the Spanish College of Bologna,⁵² drew most of his proportional

⁴⁹ Bologna A 71 was unknown to Murray C. Bradshaw, *The Falsobordone: A Study in Renaissance and Baroque Music* (n.p., 1978). Although he believes falsobordone originated in Italy, most of the earliest sources are Spanish. Interestingly, Bologna A 71 has both Italian and Spanish elements. The falsobordone are in a style similar to Bradshaw's examples from the late fifteenth century.

⁵⁰ *Ibid.*, p. 24. Unlike other early sources, Bologna A 71 does not include a setting of Psalm 113, *In exitu Israel*.

⁵¹ De Silva's earliest datable work is his *Gaude felix Florentia*, written for the election of Leo X in 1513; see E. E. Lowinsky, 'A Newly Discovered Sixteenth-Century Motet Manuscript at the Biblioteca Vallicelliana in Rome', *Journal of the American Musicological Society*, 3 (1950), pp. 175–6. Willaert was in Italy by July 1515, when he entered the service of Cardinal Ippolito d'Este in Rome; see L. Lockwood, 'Josquin at Ferrara: New Documents and Letters', *Josquin des Prez: Proceedings of the International Josquin Festival-Conference*, ed. E. E. Lowinsky in collaboration with B. J. Blackburn (London, 1976), pp. 119–20. (An earlier date has been proposed by Valerie Weinhouse O'Donoghue; see note 55 below.)

⁵² Robert Stevenson has suggested that the manuscript was 'intended for use among students in the Spanish college at Bologna'; see *Spanish Music in the Age of Columbus* (The Hague, 1960), p. 74. V. W. O'Donoghue, 'A Music Manuscript from the Spanish College of Bologna: A Study of the Manuscript Bologna, Civico Museo Bibliografico Musicale, MS A 71 (olim 159)' (M.M. thesis, University of Illinois at Urbana-Champaign, 1972), accepts Stevenson's suggestion and points to the frequent underlining and marginal notes as evidence that the manuscript 'was originally used for study purposes' (p. 4). I wish to

examples not from Spanish theory but from Tinctoris's *Liber de arte contrapuncti*. The nine examples he chose are also found in the Perugia manuscript.⁵³ The readings differ mainly in the notation of ligatures, but in a few details Perugia and Bologna reveal derivation from a common source not identical with any of the manuscript versions of treatises by Tinctoris known at present.⁵⁴ The scribe himself may be responsible for no. 26, an alternative superius to no. 25 that lacks proportions, and possibly also for no. 14, which uses a tenor, with slight variants, from an example by Tinctoris (no. 18). No. 10, a counterpoint over a tenor written in chant notation, follows Tinctoris's description of one method of making a counterpoint over a plainchant melody ('there are some who make each note of the plainchant worth two semibreves in minor prolation'; Seay II, p. 112).

In addition to the small didactic examples, Bologna A 71 includes two full-size motets for four voices that are examples of the proportioner's art. One (no. 6) is found among the motets in the first section of the manuscript, including those by de Silva and Willaert, and stands close to them stylistically. The proportions are indicated by numbers, mensuration signs, and coloration, and change frequently in all voices. The second, *O prece* (no. 12), carries the following note at the end of the bass of the *secunda pars*: 'Bene correctum est', and underneath it the name 'Tintoris'. A note such as this would seem to imply that Tinctoris had read through the motet and found it correct. The note, however, matches other marginal annotations which seem to be in the hand of the scribe, and he may have copied it along with the music from the source he used.⁵⁵ Can the motet be by

express my warmest thanks to Professor Donald Krummel of the University of Illinois, whose kind intervention made the thesis accessible to me.

⁵³ O'Donoghue is to be credited with the discovery of the concordances in the Perugia manuscript, although their source in Tinctoris's *Liber de arte contrapuncti* escaped her.

⁵⁴ For example, in Seay II, p. 117, first measure of the upper voice at the top of the page, Bologna and Perugia give A as the third note – certainly not the correct reading; in the example on p. 120, bars 2–3, the change to *sesquialtera* occurs one measure earlier in both sources (with no change in harmony). On p. 126, third staff, bar 1, Perugia and Bologna agree with Bologna, Biblioteca Universitaria, MS 2573, in giving D as the fourth note of the lowest voice – a better reading since it removes the leap into a dissonance.

⁵⁵ O'Donoghue thinks it possible that the note is in the hand of Tinctoris; this is the basis for her suggestion that the manuscript may date before his death in 1511, though she concludes that 1510–15 is the most likely date ('A Music Manuscript', pp. 39–40). Since the handwriting of the note appears elsewhere in the manuscript, it seems more plausible to assume that the name Tinctoris was copied by the scribe together with the piece, a hypothesis considered conceivable by O'Donoghue (*ibid.*, p. 37).

Tinctoris? One is immediately struck by the formal similarity of *O prece* to *Difficiles alios*. Both are in two *partes*, with successive proportions only in the *secunda pars*. Both have a tenor that has the slow beginning of a cantus firmus, but then falls in with the rhythmic pace of the other voices. In both pieces the mensuration of the tenor differs from that of the surrounding voices, though those in *O prece* are in *proportio dupla* from the start, whereas *Difficiles* reserves *proportio dupla* for the *secunda pars*. Neither motet seems to have been conceived with a text in mind. *Difficiles* is for three voices, *O prece* for four, imposing an additional burden on the composer; however, the tenor is silent in about half the motet. The proportions are less complicated, though one section of the alto runs through $\frac{12}{6} \frac{16}{12} \frac{6}{16}$. But if the motet is similar to *Difficiles alios* in its formal elements, its style has no place in Tinctoris's oeuvre. The melodic writing is undistinguished and repetitive; the phrases lack the sweep and direction of *Difficiles alios*. The counterpoint is too busy; three and four voices frequently move simultaneously in quavers and crotchets, especially after the opening phrase. In *Difficiles alios*, Tinctoris keeps the third voice in a slower rhythm when the remaining two voices have passages in quavers. But above all it is the rhythm that speaks against Tinctoris's authorship: it is nervous and jerky, and the constantly repeated motifs, especially the figures ♪♪♪ and ♪.♪.♪ , become obtrusive. Bars 1–13 of the *prima pars* will give an idea of how well the anonymous composer imitated the structure of *Difficiles alios* and how little he was able to capture the grace and fluency of Tinctoris's melodic and rhythmic style (Example 1) – if indeed he was at all interested in doing so. One is dealing here with the denser style of the Ockeghem generation.

TINCTORIS'S 'DIFFICILES ALIOS' AND ITS ANNOTATIONS

Tinctoris's motet stands far above the other examples in Perugia 1013 in length and complexity, for besides being a lesson in proportions, it is an exercise in notation. A number of glosses have been provided, not only in the hand of the scribe, Johannes Materanensis, but also by another person. Johannes wrote brief explanatory remarks under certain notes of the tenor and labelled the proportions in the *secunda pars*. In his hand is the name 'Tentoris', not over the piece but under the first notes of the superius. It was left to the

Example 1. Anonymous, *O prece*, 1.p., bars 1–13, Bologna, Civico Museo Bibliografico Musicale, MS A 71, pp. 259–60

Example 1. Anonymous, *O prece*, 1.p., bars 1–13, Bologna, Civico Museo Bibliografico Musicale, MS A 71, pp. 259–60

Continuation of Example 1. Anonymous, *O prece*, 1.p., bars 14–26, Bologna, Civico Museo Bibliografico Musicale, MS A 71, pp. 259–60

second person, whom I shall call the annotator, to recognise that the first words of the piece are 'Difficiles alios',⁵⁶ which he added after 'Tentoris' (see Figure 1). His handwriting, though similar to that of Johannes Materanensis, is distinguished by a greater cursiveness and a pronounced tilt to the right. Note also the different capital 'T'. However, the formation of certain letters and especially the abbreviations for 'par' or 'per' and 'pro' and the tendency to run the words 'ad totum' together are common to both hands. Thus there may have been one scribe who made the entries at two different times. The annotator is responsible for all the marginal remarks and the detailed explanations of the proportions and the notational problems. In each voice he used an alphabetical numbering, keyed to the comments in the margins. These letters have been retained in the score (see Appendix) and in the commentary below. Johannes Materanensis's notes on the proportions have been included in the score, but his comments on the notation of the tenor have not been kept since they largely duplicate the annotator's remarks. Wherever they differ, the commentary notes the variants.

The didactic nature of Tinctoris's motet is underlined not only in the annotations, which may stem directly from Tinctoris himself,⁵⁷ but also in the format the scribe has chosen for the motet. Superius and tenor are on the first opening (fols. 118^v–119), contratenor on the second (fol. 119^v), making a performance from the manuscript impractical. Opposite the contratenor, on folio 120, is a resolution of the tenor on folio 119, though not so labelled. On the next opening a new superius and tenor appear. That they constitute a *secunda pars* and not another composition is clear from the continuity of clefs and mode as well as the style and the annotations. Moreover, in discussing the *Difficiles alios* in his letter to Lorenzo Gazio, del Lago refers to the 'seconda parte'. The tenor of the *secunda pars*, too, appears in a resolved version.

Decipherment of Tinctoris's motet requires familiarity with the precepts in many of his treatises. The rudiments of notation explained in the *Tractatus de notis et pausis* and the treatise *Super punctis musicalibus* provide the fundamental basis; they do not differ from the

⁵⁶ *Difficiles alios delectat pangere cantus* seems to be a motto rather than the beginning of a text. I do not know its source.

⁵⁷ On this, see, the letters of Giovanni del Lago to Pietro Aaron and to Lorenzo Gazio (below, pp. 90 and 93–4).

general theoretical teachings of the time. The *Tractatus de regulari valore notarum* contains not only the listing of note values under each mensuration but also a systematic numbering and description of the sixteen possible mensurations. The annotations of the manuscript agree with Tinctoris's numbering, which differs from that of his predecessors and successors.⁵⁸ A variety of different usages of imperfection and alteration are found in the motet; all of these may be traced back to rules specified in the *Liber imperfectionum notarum musicalium* and the *Tractatus alterationum*. The proportions found in the *secunda pars* are treated in the *Proportionale*. And, of course, the counterpoint follows the rules of Tinctoris's *Liber de arte contrapuncti*. In fact, the examples in the latter are very similar in style to *Difficiles alios*, including the use of proportions.⁵⁹

When was *Difficiles alios* written? It probably dates from the years when Tinctoris was writing his treatises on notation, in the early 1470s,⁶⁰ and it certainly antedates the *Liber de arte contrapuncti* of 1477 because the sign $\odot$ is used without the meaning of augmentation, a practice Tinctoris no longer follows in the counterpoint book (see above, p. 42). The fact that it is not mentioned in any of his writings is no reason to date it later, for Tinctoris, at the end of his *Liber de arte contrapuncti*, says: 'I have referred to these compositions [by Dufay, Busnois, Ockeghem, etc.], however, as examples to confirm this our rule, leaving out my own, not without advantage . . . lest I, contrary to a good man's duty, would seem to approve only myself, and to look down on others where they had done well.'⁶¹

In the commentary that follows, each of the voices has been taken up in turn. The marginal annotations of the Perugia manuscript have been transcribed and translated and are followed by an explanation. In general, Tinctoris moves from the simple to the complex; the proportions, for example, do not appear before the *secunda pars*. They begin with *dupla*, pass through *tripla*, *quadrupla*, and *sexupla* (all of the *genus multiplex*), reverse to *subdupla* (*genus submultiplex*)

⁵⁸ See the letter of Giovanni del Lago to Pietro Aaron of 27 August 1539, discussed below (p. 90), which shows the state of confusion in ordering the mensurations.

⁵⁹ And sometimes even the use of motifs. Compare the opening of the cantus of *Difficiles alios* with bars 1–3 of the tenor of *Sancte Johannes Baptista* (Seay II, p. 125).

⁶⁰ I shall discuss the chronology of Tinctoris's treatises in another study.

⁶¹ Seay II, p. 156. I use Lowinsky's translation in 'Renaissance Writings on Music Theory (1964)', *Renaissance News*, 18 (1965), p. 366. In all his treatises, Tinctoris mentions no more than one of his own compositions, and that only because it serves as the catalyst for his treatise on alterations; see p. 82 below.

and return to *dupla*; from there they move into the *genus superparticulare* with *sesquialtera* and *sesquitercia*, returning to *dupla* for the remainder of the *pars*. In the beginning of the tenor of the *prima pars* the notes are glossed in an ascending series: minim, semibreve, breve, long, maxima.

Prima pars, cantus (fol. 118^v), heading (see Figure 1):

Ista pars cantus que suprema dicitur ex nona specie scilicet utroque modo perfecto [tempore perfecto] et prolatione minori est hic composita Tenori ut fundamento relationis equaliter proportionata.

(This part of the composition, called *superius*, is composed in the ninth species, that is perfect in each mode, perfect *tempus*, and minor prolation, proportioned equally to the tenor as the foundation of reference.)

The characterisation of this voice as being in the 'ninth species' agrees with Tinctoris's numbering of the modal species in his *Tractatus de regulari valore notarum*, chapter 24, 'On the ninth species of composition and the value of the notes in it': 'The ninth species of composition consists of each perfect mode, perfect *tempus*, and minor prolation. Therefore in it the maxima is regularly worth 3 longs, 9 breves, 27 semibreves, and 54 minims, the long 3 breves, 9 semibreves and 18 minims, the breve 3 semibreves and 6 minims, and the semibreve 2 minims.'⁶² The notes of the *superius* are in equal relation to the tenor; that is, there is no reduction in one voice. Tinctoris gives an example of *proportio aequalitatis* towards the beginning of his *Proportionale* (Seay II, p. 14). The famous definition of the tenor as 'fundamentum relationis' comes, of course, from Tinctoris's *Diffinitorium*: 'The tenor is the foundation of the relationship [of the various voice-parts] of any part-song.'⁶³ Although this particular expression

⁶² 'De nona specie compositionis et valore notarum in ea existentium': 'Nona species compositionis fit ex utroque modo perfecto, tempore perfecto et prolatione minori. Itaque regulariter in ea valet maxima 3 longas, 9 breves, 27 semibreves et 54 minims; longa 3 breves, 9 semibreves et 18 minims; brevis 3 semibreves et 6 minims; ac semibrevis 2 minims.' (Seay I, p. 134.) The music example given by Seay lacks the three pauses covering three spaces each that are indicative of the major and minor perfect modes. There are also errors in pauses elsewhere in this treatise: in Example 30 there should be three pauses covering two spaces each; in Example 31 two pauses covering three spaces each, and in Example 35 two pauses covering three spaces each. In Example 29 a semibreve E is missing before the minim C. Del Lago, in a letter to Pietro Aaron of 27 August 1539, refers to 'the glosses of the soprano, the *prima pars* of the tenor, and the *secunda pars* of the tenor' of this composition as an example of how Tinctoris numbers the species of modes; see below, p. 90.

⁶³ 'Tenor est cuiusque cantus compositi fundamentum relationis.' (Parrish, *Dictionary*, pp. 64–5.)

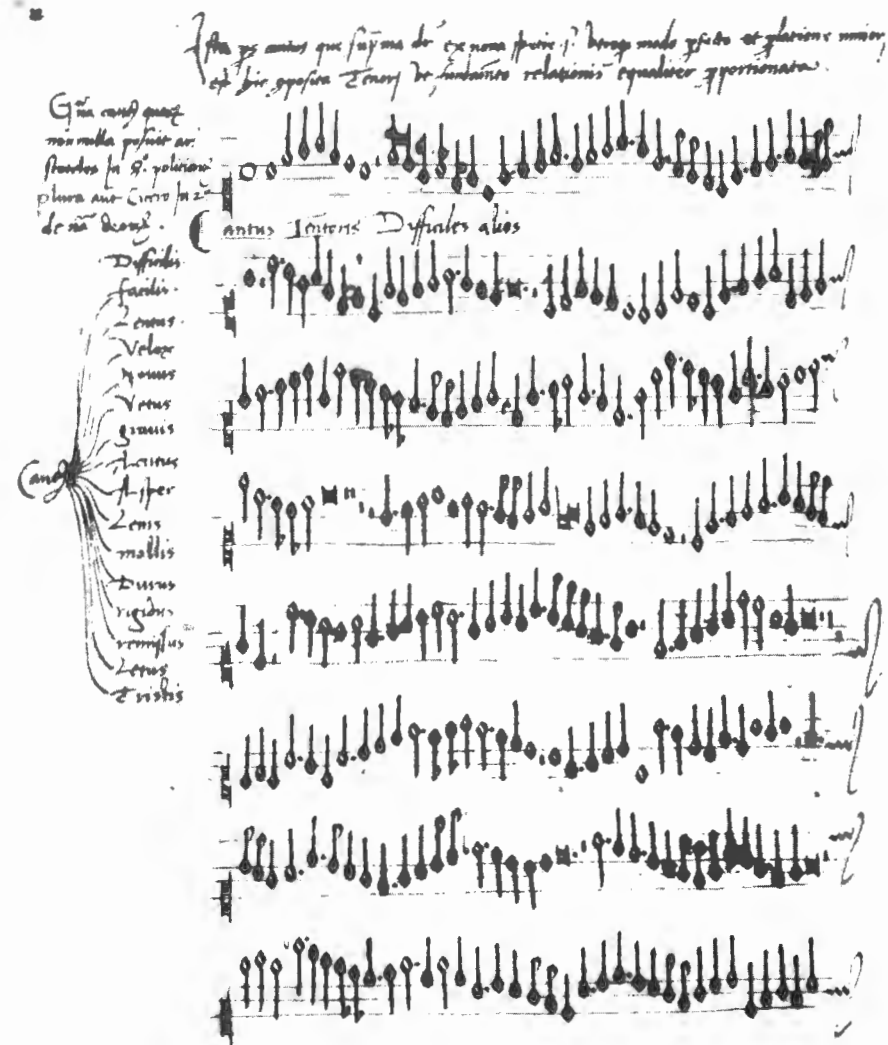
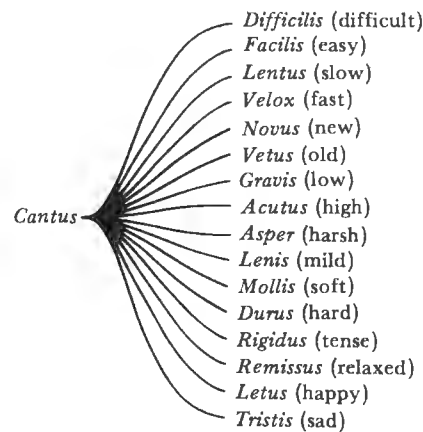


Fig. 1. Johannes Tinctoris, *Difficiles alios delectat pangere cantus, prima pars*, beginning of cantus, Perugia, Biblioteca Comunale Augusta, MS 1013, fol. 118^v

seems to originate with Tinctoris, the idea of the tenor as the foundation, in the architectural sense, goes back at least to the late thirteenth century. Johannes de Grocheo draws a comparison between the tenor of a composition and the foundation of a building in his treatise on music; he is followed by Jacobus of Liège and the author of the *Quatuor principalia musicae*.⁶⁴ Other theorists, such as Johannes de Muris, call counterpoint the 'fundamentum' of discant; a musician cannot hope to compose well unless he has a good foundation in (two-part) counterpoint.⁶⁵

Prima pars, cantus (fol. 118^v), marginal note:

Genera cantus quorum nonnulla posuit Aristoteles in 8.^o politicorum
plura autem Cicero in 2.^o de natura deorum.



⁶⁴ See H. H. Eggebrecht, *Studien zur musikalischen Terminologie*, Akademie der Wissenschaften und der Literatur: Abhandlungen des Geistes- und Sozialwissenschaftlichen Klasse 10 (Mainz, 1955), p. 879.

⁶⁵ Johannes de Muris, *Ars contrapuncti* (CS III, p. 60): 'Contrapunctus non est nisi punctum contra punctum vel notam contra notam ponere vel facere, et est fundamentum discantus. Et quia sicut quis non potest edificare, nisi prius faciat fundamentum, sic aliquis non potest discantare, nisi prius faciat contrapunctum.' (Counterpoint is nothing but placing or making a point against a point or a note against a note and it is the foundation of discant. And just as no one can build unless he first makes a foundation, so no one can sing discant unless he first makes counterpoint.) In the chapter 'De numerorum proportione' in his *Notitia artis musicae* of 1321 (ed. U. Michels, *Corpus Scriptorum de Musica* 17 (n.p., 1972)), Johannes de Muris gives a table of the five species of proportions in which all the numbers are to be compared to the 'fundamentum relationis' which serves as the denominator (p. 54).

(Types of composition, of which Aristotle set down some in the eighth book of the *Politics*, but Cicero more in the second book of *On the Nature of the Gods*.)

Aristotle, in the eighth book of the *Politics*, discusses the characters of the four modes:

even in mere melodies there is an imitation of character, for the musical modes differ essentially from one another, and those who hear them are differently affected by each. Some of them make men sad and grave, like the so-called Mixolydian, others enfeeble the mind, like the relaxed modes, another, again, produces a moderate and settled temper, which appears to be the peculiar effect of the Dorian; the Phrygian inspires enthusiasm . . . The Socrates of the *Republic* is wrong in retaining only the Phrygian mode along with the Dorian, and the more so because he rejects the flute; for the Phrygian is to the modes what the flute is to musical instruments – both of them are exciting and emotional . . . All men agree that the Dorian music is the gravest and manliest . . . the Dorian is a mean between the other modes.⁶⁶

As Aristotle says, this classification comes from Plato's *Republic* (the speakers in this section are Socrates and Glaucon), where the 'dirge-like harmonies' are said to be Mixolydian and intense Lydian, the 'soft and convivial harmonies' certain Ionian and Lydian modes 'that are called relaxed', the 'enforced' the Dorian ('that harmony that would fittingly imitate the utterances and the accents of a brave man who is engaged in warfare'), the 'voluntary' the Phrygian ('for such a man engaged in works of peace, not enforced but voluntary').⁶⁷

Plato's comments on the Dorian and Phrygian modes are not at all clear. He introduces the discussion with the statement by Socrates, 'I don't know the harmonies', who then goes on to speak of 'that harmony', then 'another [harmony]'. One assumes that he discusses them in the order mentioned, Dorian and Phrygian, but the characterisations, according to Aristotle's comments, should be just the reverse. Glareanus discusses this passage from Plato's *Republic* in his chapter on the Lydian mode. He remarks that, with regard to Dorian and Phrygian, Plato 'does not pronounce anything definite about them. But he teaches that those modes should be adhered to in

⁶⁶ *Politics*, VIII, ch. 5, 7; see *The Basic Works of Aristotle*, ed. R. McKeon (New York, 1941), pp. 1312, 1316.

⁶⁷ O. Strunk, *Source Readings in Music History* (New York, 1950), pp. 4–5.

general which kindle and excite the virile spirit to noble deeds.' Moreover 'Plato speaks as if he did not know them sufficiently well himself, although I believe he understood them clearly, as all mathematical knowledge was known to that very learned age. But I could not say easily how it was understood by the translator.'⁶⁸ (Glareanus does not refer to Aristotle in this connection.) Indeed, **Plato presents Socrates as being familiar with the effects, but not the names of the modes**, for each time, after describing the character of a mode, he asks Glaucon to give the name of it. The ambiguity of Plato's remarks had considerable consequences in later music history, especially in the sixteenth century.

Earlier, Glareanus had taken up the saying 'From Dorian to Phrygian', explaining it as 'from natural to less natural, or from well ordered to irrational, or from mild to harsh'.⁶⁹ He criticises Gafurius, for whom he generally has the highest regard, for contradicting himself in explaining the adage as a change from 'invariable and serious moods' to 'pleasant and less severe' ones in one place, then characterising Phrygian in another place as 'suitable for incitement to war'.⁷⁰ Glareanus's own opinion of Phrygian (in contemporaneous music) is that it is 'more suitable to severe, religious music, as elegies, laments, and funeral music', though he admits that composers of 'happy genius' such as Josquin and Pierre de la Rue are quite capable of using this mode to advantage also for other subjects.⁷¹ He quotes various Greek and Roman authors who hold contrasting opinions about the effects of the Phrygian mode.⁷²

To the medieval theorists, for whom Aristotle was the supreme authority – 'the Philosopher', as he is often called – the Phrygian mode was considered exciting, the Dorian moderate.⁷³ **Tinctoris**, in the *Liber de natura et proprietate tonorum*, referring to Aristotle, says: 'For

⁶⁸ Henricus Glareanus, *Dodecachordon*, trans. C. Miller, Musicological Studies and Documents 6, 2 vols. (n.p., 1965), 1, p. 164. Glareanus, who prided himself on his knowledge of Greek, was apparently using a Latin translation of Plato or perhaps a Latin commentary on the *De republica*.⁶⁹ *Ibid.*, 1, p. 129.

⁷⁰ *Ibid.*, 1, p. 130. The reference is to Gafurius, *De harmonia musicorum instrumentorum opus* (Milan, 1518), Book iv, chapters 2 and 5 (fols. 84, 85^v). Gafurius, however, is merely transmitting ancient reports about the effects of the modes ('apud antiquos' and 'apud veteres', as his chapter headings specify), and he does not connect these characterisations with music of his time.

⁷¹ Glareanus, *Dodecachordon*, trans. Miller, 1, p. 130.

⁷² *Ibid.*, 1, p. 160.

⁷³ Required reading for scholars in Paris in 1304 were Aristotle's *Politics* and Pseudo-Aristotle's *Problems*; see N. C. Carpenter, *Music in the Medieval and Renaissance Universities* (Norman, 1958), p. 50. These two books are mentioned frequently in Carpenter's study.

he affirms the Mixolydian as mournful, Lydian as relaxed, Phrygian as tense, and Dorian as moderate.⁷⁴ Moreover, Boethius, in his *De musica*, the bible of medieval music theory, tells the anecdote concerning the effects of the modes in which Pythagoras, 'by means of a spondaic melody, calmed and restored to self-mastery a youth of Taormina who had become wrought up by the sound of the Phrygian mode'.⁷⁵ And Tinctoris himself, in his *De inventione et usu musicae*, quotes the story of the aulos-player Timotheos (not to be confused with Timotheos the Milesian)⁷⁶ who roused Alexander from the banquet table to arms with a Phrygian tune 'usque adeo regem excitasse dicitur', then calmed him by switching to a different mode.⁷⁷

The reference to Cicero is to the following passage, in which the idol of humanists takes up the five human senses, demonstrating their superiority to those of animals:

The ears are likewise marvellously skilful organs of discrimination; they judge differences of tone, of pitch and of key in the music of the voice and of wind and stringed instruments, and many different qualities of voice, sonorous and dull, smooth and rough, bass and treble, flexible and hard, distinctions discriminated by the human ear alone.⁷⁸

The eight pairs of contrasting terms in the Perugia manuscript fall into several categories: some describe the ethos attributed to the modes, taken from Aristotle (*rigidus-remissus*,⁷⁹ *letus-tristis*), some the

⁷⁴ 'Namque Mixolydiam planctivam, Lydiam remissam, Phrygiam rigidam et Dorian mediam affirmat.' (Seay 1, p. 68.)

⁷⁵ Strunk, *Source Readings*, p. 82. Tinctoris reports the story in his **Complexus effectuum musices** under the twelfth effect: 'Musica voluntatem malam revocat' (Seay II, p. 172), in a version after Cicero that does not mention the Phrygian mode.

⁷⁶ On the distinction between the two musicians, who had been fused into one in Renaissance thought until Vincenzo Galilei discovered the difference in 1581, see E. Panofsky, *Early Netherlandish Painting*, 2 vols. (Cambridge, Mass., 1953), 1, n. 2 to p. 197, pp. 435–6.

⁷⁷ See K. Weinmann, *Johannes Tinctoris (1445–1511) und sein unbekannter Traktat 'De inventione et usu musicae'*, ed. W. Fischer (Tutzing, 1961), p. 39. The same anecdote is also to be found in Gafurius's *Theorica musica*, first printed in 1480 (fol. a2^v of the facsimile edition (Rome, 1934) of the 1492 edition). In her article 'Spenser and Timotheus: A Musical Gloss on E.K.'s Gloss', *Publications of the Modern Language Association*, 71 (1956), pp. 1141–51, Nan Carpenter has traced the Timotheos legend in humanistic writings of the Renaissance.

⁷⁸ 'Auriumque item est admirabile quoddam artificiosumque iudicium, quo iudicatur et in vocis et in tibiurum nervorumque cantibus varietas sonorum intervalla distinctio et vocis genera permulta, canorum fuscum, leve asperum, grave acutum, flexibile durum, quae hominum solum auribus iudicantur.' (Cicero, *De natura deorum*, II.lviii; cited from the translation by H. Rackham (London and New York, 1933), pp. 262–5.)

⁷⁹ In music theory, *remissus* can also mean 'lowered'; see Bartolomeo Ramis, *Musica practica*, ed. J. Wolf (Leipzig, 1901), p. 26: 'vocis elevatio sive intensio et depressio sive remissio'.

vocal quality, taken from Cicero (*gravis-acutus, asper-lenis, mollis-durus*),⁸⁰ some the manner of performance – in this case the duration of the note values (*lentus-velox*). Two further pairs are less frequently encountered in music theory, Greek or medieval, *difficilis-facilis* and *novus-vetus*, but they have particular reference to Tinctoris; it was he who underlined the distinction between the 'new music' of Dunstaple, Binchois, and Dufay and the 'old music', no longer worth hearing, going back more than one generation.⁸¹ Most obvious of all, his motet begins with the word 'difficiles', and indeed it is a most difficult piece, though certain parts could be said to be relatively 'facilis'.

Tinctoris was well read in the classical authors, whom he quotes frequently in his treatises, especially the *Complexus effectuum musices* and the *De inventione et usu musicae*. He refers to Aristotle's *Politics*, his *Ethics*, and *On the Heavens*, and of Cicero he shows acquaintance with *Tusculanae disputationes*, *De officiis*, *De amicitia*, *De oratore*, *Rhetorica ad Herennium* and *Quaestiones Tusculanarum*. 'Ut ait Tullius' or 'Cicerone teste' or 'si Tullio credimus' are frequent introductions to his statements.

Prima pars, tenor (fol. 119), heading (see Figure 2):

Tenor. Iste a principio usque ad semicirculum compositionis est ex omnibus quantitatibus perfectis, et ab illo signo usque ad tertium ex quinta [specie], id est utroque modo perfecto, tempore imperfecto et prolatione maiori, est editus.

(Tenor. This, from the beginning to the semicircle of the composition,

⁸⁰ *Mollis* and *durus* of course also have another meaning in music theory, referring to the presence of B $\flat$ or B $\natural$. Some of the adjectives for vocal quality are also listed by Isidore of Seville, who names the following: *suave, perspicua, subtilis, pinguis, acuta, dura, aspera, caeca, vinnola* (defined as 'vox lenis, vox mollis atque flexibilis') in his *Etymologiarum sive originum libri xx*, III, ch. 20; see M. Gerbert, *Scriptores ecclesiastici de musica sacra potissimum*, 3 vols. (St Blasien, 1784), I, p. 22 (*Scriptores ecclesiastici* is hereafter abbreviated as GS). An English translation of Isidore may be found in Strunk, *Source Readings*, pp. 93–100. It seems to have gone unnoticed that practically the whole of chapter 5 of Book I of Pietro Aaron's *Thosanello de la musica* (Venice, 1523), 'Cognitione di voci, et suoni, et varii istromenti', is translated from Isidore of Seville, not named, with some additions from other writers, who are named. It is a curious mixture of ancient and modern, for most of the instruments discussed are those of antiquity. Yet the characterisation of vocal quality must have seemed just as relevant to Aaron in 1523 as it did to Isidore in the seventh century.

⁸¹ *Liber de arte contrapuncti* (Seay II, p. 12), and especially *Proportionale* (Seay IIa, p. 10), where he speaks of 'ars nova'. On Tinctoris's attitude toward the 'new', see Lowinsky, 'Music of the Renaissance as Viewed by Renaissance Musicians', *The Renaissance Image of Man and the World*, ed. B. O'Kelly (Columbus, 1966), pp. 129–77, esp. pp. 132–3; on his predecessors who praised or denounced the 'moderni', see *ibid.*, p. 165, n. 5.



Fig. 2. Johannes Tinctoris, *Difficiles alios delectat pangere cantus*, prima pars, tenor, Perugia, Biblioteca Comunale Augusta, MS 1013, fol. 119

consists of all perfect quantities [$Mx = 3L$, $L = 3B$, $B = 3S$, $S = 3M$], and from that sign to the third [i.e. beginning of the 2.*p.*] is set forth in the fifth species, that is perfect in each mode [$Mx = 3L$, $L = 3B$], imperfect *tempus* [$B = 2S$], and major prolation [$S = 3M$].)

Again, the numbering of the modal species agrees with Tinctoris's classification in the *Tractatus de regulari valore notarum*. The first half of the tenor is in the first species: 'The first species of composition consists of each perfect mode, perfect *tempus*, and major prolation.'⁸² The second half is in the fifth species: 'The fifth species of composition consists of each perfect mode, imperfect *tempus*, and major prolation.'⁸³

Knowledge of the *modus* is necessary because this voice has longs and maximae, and one must know whether they are perfect or imperfect in order to read the notation correctly. A careful composer will let the *modus* guide his placement of cadences. In the *prima pars* of *Difficiles alios* the length is determined by the *modus* of the maxima of the tenor; there are four periods (= 54 bars) and the change to imperfect *tempus* occurs exactly at the midpoint, at bar 28. The superius and contratenor are also perfect in both modes, but since the prolation is minor, the maxima covers nine instead of thirteen and a half bars. This yields six periods in the *prima pars*, with the midpoint coinciding with the tenor at bar 28. All but one of the major cadences on F, the mode of the motet, involving the superius and contratenor fall at the end of a nine-measure period (bars 10, 28, 37, 46, 55). Other cadences are placed at the division points of the minor perfect mode, at three-bar intervals covering a long each (on F at bar 7, C at bar 13, G at bar 16, C at bar 19, C at bar 22, F at bar 34, C at bar 40, F at bar 43, and C at bar 52). One might ask, if Tinctoris followed the *modus* so regularly in his placement of cadences, why did he not write a major cadence at the end of the first and third periods of the major *modus* in the tenor? The probable reason is that they would fall in the middle of a bar (bars 14 and 41), and to place a cadence in the middle of a bar would conflict with the minor prolation of the superius and contratenor since minor prolation divides the bar into thirds, not halves.

⁸² 'Prima species compositionis fit ex utroque modo perfecto, tempore perfecto et maiori prolatione.' (Seay I, p. 131.)

⁸³ 'Quinta compositionis species fit ex utroque modo perfecto, tempore imperfecto et prolatione maiori.' (Seay I, p. 133.)

Prima pars, tenor (fol. 119), marginal notes:

- a) Iste pause ante signum temporis prolationisque posite non sunt essentielles sed utriusque modi tamen indiciales.

(These pauses placed before the sign of *tempus* and prolation are not essential but only indicative of each of the two modes.)

In the *Tractatus de regulari valore notarum*, chapter 7, 'De signo modi maioris perfecti', Tinctoris shows the placement of three long (*longa*) pauses before the sign of *tempus* as indication of the major perfect mode. A note at the end of chapter 10 warns: 'si huiusmodi pausae longales . . . signo temporali anteponantur, non sunt de cantus essentia' ('if these *longa* pauses are placed before the mensuration sign, they are not essential to the composition') (Seay I, pp. 129–30). Gafurius cited Tinctoris's motet as an example of indicative pauses.⁸⁴

- b) Ista minima alteratur eo quod in prolacione maiori sit ultra duarum solarum ante semibreve positurum.

(This minim is altered because it is the farther of two single (minims) placed before a semibreve in major prolation.)

In the *Tractatus alterationum*, chapter 2, under 'De alteratione minimae', Tinctoris states: 'If two single minims are found before a semibreve or its pause in major prolation, the last of them is altered.'⁸⁵ Alteration means doubling the length of the note in order to fill out the measure.

- c) Ista semibrevis est alterata eo quod ante brevem in tempore perfecto duarum solarum ultima invenitur.

(This semibreve is altered because it is found as the last of two single (semibreves) in perfect *tempus*.)

⁸⁴ 'But frequently unmeasured rests are written indicatively, when for example, they are placed at the beginning of a song before a circle or semicircle, the sign of *tempus*; then two rests of three *tempora* show *modus maior perfectus*, and another third rest shows *modus minor perfectus*, just as Tinctoris did in the tenor of his pedagogical motet, *Difficiles alios delectat pangere cantus*.' (Gafurius, *Practica musicae*, trans. Miller, p. 86.) The seeming contradiction between Gafurius's statement that the major perfect mode is shown by two long (*longa*) rests and Tinctoris's that it is shown by three such rests is resolved when we realise that in Tinctoris's system the major mode is never indicated by itself but always includes the minor mode, since the length of the maxima depends on the length of the long. If the minor mode is imperfect, then the three pauses occupy only two spaces each, showing that the long is comprised of two breves.

⁸⁵ 'Si duae minimae solae in maiori prolacione ante semibreve aut eius pausam inveniantur, ultima illarum alteratur.' (Seay I, p. 179.)

The same rule applies to the semibreve in *tempus perfectum* (Seay I, p. 178).

- d) *Ista brevis est imperfecta quo ad totum et unam eius partem propinquam.*

(This breve is imperfect as to the whole and one near part.)

In the *Liber imperfectionum notarum musicalium*, Book II, chapter 6, 'De imperfectione brevis in tempore perfecto', the third manner of imperfecting a breve is 'quantum ad totum et partes propinquas simul' ('as to the whole and the near parts') (Seay I, p. 165). 'Ad totum' means that the breve loses one third of its value, that is, a semibreve. 'Et unam eius partem propinquam' means that one of its near parts (the two remaining semibreves) is imperfected, that is, loses a minim. It is important to pay attention to Tinctoris's grammatical structure in his treatment of imperfection. All of the glosses are governed by the words 'quo ad', 'as to' (in his treatise he uses 'quantum ad'), from which it follows that he is discussing the note that is imperfected, not the note that imperfects. When Tinctoris states that the breve is imperfect as to one near part, it does not mean that the breve loses one near part (which would be a semibreve) but that one of its near parts is imperfect.

- e) *Ista brevis est imperfecta quo ad totum et omnes partes eius propinquas.*

(This breve is imperfect as to the whole and all its near parts.)

This is the same, except that both of the near parts of the breve are imperfected, that is, each loses a minim.

- f) *Ista longa imperficitur quo ad totum et eius partes propinquas et remotas.*

(This long is imperfected as to the whole and its near and remote parts.)

This is the seventh manner of imperfecting a long (Seay I, p. 163). The long itself loses one breve ('ad totum'), the two remaining breves ('eius partes propinquas') lose two semibreves, and the four remaining semibreves ('eius partes remotas') lose four minims. Thus the long is reduced from twenty-seven minims (i.e., three breves of three perfect semibreves each) to only eight, the maximum reduction possible, since each perfect note within the long has become imper-

fect (the scribe has written here: 'Imperfecta est usque ad ultimam divisionem que dividi potest').⁸⁶

- g) *Ista maxima est imperfecta quo ad totum et omnes partes eius propinquas et remotas ac magis remotiores.*

(This maxima is imperfect as to the whole and all its near, its remote, and remoter parts.)

This is the fifteenth and last manner of imperfecting a maxima (Seay I, p. 160). Imperfected are the maxima itself ('ad totum'), the two longs ('omnes partes eius propinquas'), the four breves ('et remotas'), and the eight semibreves ('ac magis remotiores'). Like the previous note, this one achieves the maximum reduction possible (again the scribe specifies: 'Imperfecta usque ad ultimam divisionem').⁸⁷

- h) *Ista brevis imperficitur quo ad unam eius partem propinquam ut evitetur alteratio.*

(This breve is imperfected as to one near part to avoid alteration.)

Under the heading 'De imperfectione brevis in prolatione maiori' in chapter 6 of Book II of the *Liber imperfectionum notarum musicalium* (Seay I, p. 164), Tinctoris explains that a breve in major prolation can be imperfected as to two or only one of its near parts, since the breve comprises two perfect semibreves. If it had been imperfected by two minims, the fourth minim following would have had to be altered. The scribe's comment to this note, 'Imperfecta quo ad totum et unam partem remotam', is wrong, not only because the minim is a

⁸⁶ In the seventh general rule of his *Liber imperfectionum notarum musicalium*, Tinctoris shows how a long can be reduced to the value of eight minims (Seay I, pp. 149–50). Gafurius, in his *Practica musicae*, discusses another such example, ending with the remark that 'a study of these varied kinds of imperfection produces little of value or practical application. In our opinion it should rather be avoided than encouraged' (trans. Miller, p. 97). The Spanish theorist Guillermo de Podio vehemently denied that a ternary note could lose more than a third of its value; in his view, a note could be imperfected either as to the whole or as to its parts, but never as to both; see Stevenson, *Spanish Music in the Age of Columbus*, pp. 78–9.

⁸⁷ This maxima contradicts Willi Apel's statement that 'the *Mx* itself was not admitted to be ternary; in other words, its maximum value was six, not nine, *B'*' (*The Notation of Polyphonic Music 900–1600* (5th edn, Cambridge, Mass., 1953), p. 124). In the Commentary, p. 440, he adds: 'the equivalent of a *maximodus perfectus* is always represented by a group such as *L L L* (3 + 3 + 3), or *Mx L* (6 + 3), never by a single *Mx* (9)'. It is understandable that such a long note value is rarely encountered in compositions. Tinctoris has placed three maximae in his motet, the first two under major perfect mode, the third under major imperfect mode, but he has reduced them to less than half their full value through imperfection. The examples in major perfect mode in Tinctoris's *Tractatus de regulari valore notarum*, however, all begin with a perfect maxima (Seay I, pp. 127, 129, 132–6).

'pars propinqua' but also because the breve under C is already imperfect and therefore cannot be imperfected 'ad totum', though both of its constituent semibreves can be imperfected. Perhaps the scribe overlooked the new mensuration sign, for the value of the breve is the same as that to which note d) is appended, with the same gloss. Throughout his explanatory notes, the scribe differs from the annotator in calling the near parts 'partes remotas'. This is not necessarily an error; he is describing the imperfected note instead of the imperfect note, though the word 'per' should be added. If he had written 'imperficitur *per* unam partem remotam' he would have described the process correctly.

- i) Ista brevis est imperfecta quo ad omnes eius partes propinquas.

(This breve is imperfect as to all its near parts.)

Another example of the previous rule, this time showing imperfection of both near parts. The scribe writes: 'Imperfecta quo ad totum.' He is correct as to the value removed, but not as accurate theoretically as the annotator, who indicates imperfection of the parts of the breve, not of the breve itself.

- k) Ista longa quo ad totum dumtaxat est imperfecta.

(This long is imperfect only as to the whole.)

This example shows the first manner of imperfected a long (Seay I, p. 162).

- l) Ista brevis alteratur et quo ad omnes eius partes propinquas imperficitur.

(This breve is altered and imperfected as to all its near parts.)

This is an unusual example of simultaneous alteration and imperfection. Under the second general rule of alteration (Seay I, p. 174), Tinctoris states that it does not matter if the two single notes in a pattern that requires alteration are contiguous or syncopated; here the previous two notes, D and C, separate two breves before a long. At the same time, the D and C imperfect all the near parts of the altered breve, that is, the breve loses the value of two semibreves (semibreves, not minims, since it now has the value of a long). This complicated notation is the only way to produce the value of a breve tied to an imperfect semibreve in C (it could not have been written as a long and then imperfected because it precedes another long, and

according to the rule 'similis ante similem semper est perfecta', the first long would have had to be perfect).⁸⁸ The scribe's annotation, 'imperfecta quo ad totum', describes the correct result, but without stating that the breve is also altered.

- m) Ista maxima imperficitur quo ad totum et omnes eius partes propinquas.

(This maxima is imperfected as to the whole and all its near parts.)

Under Tinctoris's fifth manner of imperfection of the maxima (Seay I, p. 158), it loses one long and two breves. The scribe's annotation, 'imperfecta quo ad totum dupliciter', does not mean that the imperfection is doubled, which would not be possible, but that the maxima is made imperfect as to the whole in two ways, that is, it is imperfect 'quo ad totum' and its remaining longs are in turn imperfect 'quo ad totum'.⁸⁹

Prima pars, contra (fol. 119^v), heading:

Ista pars vero quam contratenorem dicimus nullam hic differentiam a suprema quo ad quantitates ac proportionem patitur.

(This part, however, which we call contratenor, does not differ from the superius with respect to quantities and proportions.)

Like the superius, the contratenor is in the ninth species. However, since in both voices there is no value larger than a breve, the indication of *modus* is superfluous, and indeed both voices lack the 'indicative' pauses found in the tenor, where knowledge of the *modus* is indispensable to a correct interpretation of the notation.

Prima pars, contra (fol. 119^v), marginal note:

Queritur hic qua ratione tres soni, quorum medius distat ab extremo inferiori per diapente, a superiori vero per diatesseron [*sic*] concorde[n]tur. Et si medius ipse distet e converso ab extremo inferiori per diatessaron, a superiori autem per diapente discorde[n]tur, nam utrobique extremorum

⁸⁸ This is not a case of simultaneous augmentation and imperfection, a practice Tinctoris deplores in his *Liber imperfectionum notarum* under the twelfth general rule (Seay I, pp. 153–4), giving as examples compositions by Domarto and Barbingant. Augmentation of an imperfect note by a dot is not the same as alteration.

⁸⁹ Perhaps the scribe was familiar with Johannes de Muris's *Libellus cantus mensurabilis*, in which one chapter begins 'Maxima perfecta in toto et in partibus potest imperfici dupliciter' (CS III, p. 47). *Dupliciter* here means 'in two ways', as is evident from the continuation: 'videlicet, quoad totum et quoad partes'. Johannes de Muris also uses *dupliciter* to describe another two ways of imperfecting the maxima: *a parte ante* and *a parte post*.

eadem est distantia et quod deficit in uno recuperatur in alio: quodque fuerat ibi discordantia fit hic concordantia: quam quidem questionem hactenus absolutam accepi a nemine, hinc quoniam mihi difficil[is]ima est super ea opinione alienam malo verecunde audire quam meam temere ingerere.⁹⁰

(It is asked here why three sounds, of which the middle one lies a fifth above the lowest and a fourth below the highest [g–d'–g'], sound well together. And if the middle, conversely, lies a fourth above the lowest and a fifth below the highest [g–c'–g'], they sound dissonant; for the distance between the two extremes is the same, and what is missing in one is made up in the other, and though there was a discord there, here there is a concord. As indeed I have considered up to now that no one has solved this question, hence since it is most difficult for me, I prefer on this opinion to assent modestly to another's rather than to press my own rashly.)

If the annotator has a specific passage of 'another' theorist in mind, he has left the reader in the dark about his identity. Tinctoris does not discuss this particular problem in his treatises, but he says that the fourth is not used in two-voice counterpoint except in improvising over a plainchant (*super librum*); if one voice sings a fourth above the tenor, then another voice should take a fifth below the tenor. He then goes on to show two ways in which the fourth can be used in composition (i.e., when three or more parts are involved): (1) in fauxbourdon, where the fourth between the middle and upper voice stands a fifth or a third above the tenor, and (2) in *res facta*, where a fourth between the middle and upper voice can stand a third, fifth, tenth, or twelfth above the lowest voice (Seay II, pp. 26–7, with examples).

Gafurius, in Book III of his *Practica musicae*, has a chapter entitled 'A fourth between middle and upper parts is concordant, between middle and lower parts is dissonant'.⁹¹ He speaks not of an octave between the outer notes but a sixth, and claims that the fourth, being formed between two consonances, the sixth and the third, 'is hidden, so to speak, between a smaller and larger interval'. This, he explains, following Boethius, is because lower sounds are slower in motion than higher ones; the fourth between the upper parts, 'weaker in a

⁹⁰ The passage offered some difficulties toward the end. *Alienam* has been emended to *alienam*. The unusual abbreviation *difficil*⁹ was resolved as *difficillima*, following the suggestion of Professor Bernard Barbiche of the École des Chartes. The words 'a nemine' resisted all attempts at decipherment until the solution was found by Ségolène de Dainville-Barbiche. To Professor and Madame Barbiche I extend my warmest thanks for their expert assistance.

⁹¹ *Practica musicae*, trans. Miller, p. 132.

high tonal register, is hidden through its velocity'. Gafurius also refers to [Pseudo-]Aristotle, *Problems*, Book XIX, no. 21 for the observation that 'slowness naturally takes more time than celerity and thus sounds more fully discordant in lower tones, so that a dissonance is more readily perceptible'.⁹² Of course, at the time of Pseudo-Aristotle (1st century A.D.) there is no question of chord formation; the remark applies to 'errors in time' or singing 'out of tune' in octaves by low voices as opposed to high voices.⁹³

Nevertheless, sixteenth-century theorists interpreted Pseudo-Aristotle from a sixteenth-century point of view. For example, Juan Bermudo, in his *Declaración de instrumentos musicales* of 1555, includes a chapter, 'On certain questions in music',⁹⁴ in which he discusses several of the issues in *Problems*, Book XIX. Among them is:

Why, when we compose polyphony, do we have to place the better consonances between the lower voices and we cannot use a dissonance? Aristotle gives many reasons why it has to be done thus. First, because the low voice is deeper, it takes more time than the high voice, and in a voice that takes more time, one can err more than in the one that takes little time. In the longer time the low dissonance sounds stronger because it is slower and therefore the dissonance is more exposed. However, the quick and high sound, because it takes less time, covers the dissonance. From this follows the second reason, that the dissonance placed in the low part strikes the ear more than if it were placed in the high part.⁹⁵

Bermudo reasons:

if the dissonant low voice because of its low position makes the high voice

⁹² *Ibid.* In the translation of the Loeb Classical Library: 'For in the longer time there is opportunity for more sensation, whereas the brief and high note escapes attention because of its speed.' (Aristotle: *Problems*, I, Books I–XXI, trans. W. S. Hett (Cambridge, Mass., and London, 1936), pp. 391, 393.)

⁹³ 'Why is it that the mistakes of singers are more noticeable in the low notes than in the high ones, if they sing out of tune? Errors in time are also more obvious in the low notes.' (*Ibid.*, p. 391.) That the discussion involves the interval of an octave is made clear by two other problems in Book XIX, Problem 18: 'Why is the octave consonance alone used in singing?' and Problem 17: 'Why does not singing in fifths sound like the octave?' (*Ibid.*, p. 389.)

⁹⁴ Book III, *De canto de órgano*, chapter 50, fols. lix–lix^v.

⁹⁵ 'Porqué en la composición de canto de órgano avemos de poner las consonancias mejores entre las bozes inferiores, y no podemos poner una dissonancia? Muchas causas pone Aristotiles para qué esto deva ser así hecho. La Primera por ser la boz baxa más grave tiene más de tiempo, que la boz aguda: y en la boz que tiene más de tiempo, más se puede peccar, que en la que tiene poco tiempo. En el tiempo mayor la dissonancia grave por ser más tardía tiene mayor sonido: por la qual tardança es hecha más manifesta la tal dissonancia. Empero el sonido veloz y agudo porque en menor tiempo da su sonido: está abscondida la tal dissonancia. De esta razón se sigue la segunda, que más hiere el oído la dissonancia puesta en la parte grave, que si fuesse puesta en la aguda.' (Fol. lix^v.)

more audible, then the low consonance will make the high consonance more audible . . . Therefore the fifth and octave make such audible consonances with the low voice that we don't hear the dissonance of the fourth.⁹⁶

The classification of the fourth was a problem that plagued musicians for centuries. Considered a consonance in Greek theory and so treated by medieval writers, to whom mathematics was the supreme arbiter, it lost its eminent position as a major consonance when theorists started codifying rules for counterpoint.⁹⁷ The conflict between the rational mind, which determined consonances according to superparticular ratios, and the sense of hearing (already referred to by Boethius in his definition of dissonance) was not resolved easily. Medieval writers found various ways of dealing with the problem of the fourth. Jacobus of Liège, in the last book of his *Speculum musicae* of c. 1330, includes a thoughtful discussion on the position of the fourth, beginning with an example from Guido of parallel organum at the fourth and octave, which he says is 'contra quendam modernum doctorem' (identified by Roger Bragard as Johannes de Muris; see his *Musica speculativa*, GS III, pp. 271–3) who states that the fourth below the fifth is not a consonance. Jacobus holds that the fourth is a consonance whether it is placed beneath or above a fifth, but it sounds better above the fifth, reasoning along the same lines as the Pseudo-Aristotelian *Problems* with regard to high and low voices.⁹⁸ The author of the *Quatuor principalia musicae* of 1351, who bases his tract largely on Boethius, devised a classification in which intervals are divided into three groups: concordant consonances (*consonantiae concordantes*), discordant consonances (*consonantiae discordantes*, also called imperfect discords), and perfect discords (*perfectae discordantiae*). The fourth is labelled an 'imperfect discord', along with the tone and the minor sixth. Imperfect discords occur 'when two voices are joined so that in a certain measure

⁹⁶ 'Si la boz grave dissonante por ser grave, haze más sensible a la aguda: luego la consonancia grave hará más sensible a la consonancia aguda . . . Pues tan sensibles se hazen la quinta y octava con la consonancia grave: que no sentimos la dissonancia de la quarta.' (*Ibid.*)

⁹⁷ For a discussion of the position of the fourth in medieval theory, see K.-J. Sachs, *Der Contrapunctus im 14. und 15. Jahrhundert: Untersuchungen zum Terminus, zur Lehre und zu den Quellen*, *Archiv für Musikwissenschaft*, Beihefte 13 (Wiesbaden, 1974), esp. pp. 58–60, 62–5, 76–7, 124–9.

⁹⁸ *Jacobi Leodiensis Speculum musicae*, ed. R. Bragard, *Corpus Scriptorum de Musica* 3, VII (n.p., 1973), pp. 12–22.

they are compatible according to the sense of hearing, but they discord'.⁹⁹

One of the notable innovations in Tinctoris's theory of music, developed in his treatise on counterpoint, is his insistence on the 'judgement of the ear'.¹⁰⁰ While he begins the treatise with the story of Pythagoras's discovery of the relationship between weights and tones and mentions the ratios for producing the fourth, fifth, and octave and their compounds, Tinctoris leaves all the other mathematical ratios aside. He precedes his list of the twenty-two consonances with the statement that these intervals are the ones used by modern musicians and singers and are 'approved by the judgement of the ears in the Aristoxenian fashion' (Seay II, p. 17). It took a great deal of courage on the part of Tinctoris to mention Aristoxenus in an approving manner, for the latter had come under scathing attack in Boethius's *De musica* for the very reason that he left everything to the judgement of the ear, and medieval theory followed Boethius religiously.¹⁰¹ The time-honoured idea of the superiority of reason over the senses was beginning to be questioned.

In his own music, Tinctoris uses the fourth freely between the upper voices. Yet some of his contemporaries, especially in their secular music, wrote in a style that completely avoids essential fourths, allowing any pair of voices to be sung as a duo,¹⁰² and in his two chansons for three parts Tinctoris approaches this style. As a result of avoiding fourths, the outer voices frequently move in parallel tenths, a procedure discussed by Gafurius, who names Tinctoris at the head of his list of composers who write in this style.¹⁰³ The remark about fourths is appended to the contratenor of *Difficiles alios* because it is between that part and the superius that the fourths occur, always when the contratenor moves above the tenor. Most of the fourths come at cadence points, but there

⁹⁹ 'Imperfectae discordantiae dicuntur, quando duo voces conjunguntur sic quod quodammodo se compati possunt secundum auditum, sed discordant' (CS IV, p. 279). The treatise was erroneously attributed to Simon of Tunstede by Coussemaker; see G. Reaney, 'Tunstede', *Die Musik in Geschichte und Gegenwart*, ed. F. Blume, 16 vols. (Kassel, 1949–79), XIII, cols. 979–81.

¹⁰⁰ For a lucid presentation of the changing view of consonance and dissonance in the Middle Ages and Renaissance, see Lowinsky, 'Music of the Renaissance', esp. pp. 136–47.

¹⁰¹ On the new appreciation for Aristoxenus and its significance for Renaissance theory, see *ibid.*, pp. 137–8.

¹⁰² This phenomenon was first noticed and described by Charles Warren Fox; see his 'Non-quartal Harmony in the Renaissance', *Musical Quarterly*, 31 (1945), pp. 33–53.

¹⁰³ See *Practica musicae*, trans. Miller, p. 144.

is a conspicuous fauxbourdon-like passage in the *secunda pars* at bars 10–11.

Prima pars, tenor (fol. 120)

Though not so labelled, this is a resolution of the *prima pars* of the tenor under the time signature C. Some note values that are irregular under C have been divided to fit better in imperfect mensuration (for example, the perfect breve, bars 3–4, is written as a long and a minim in the *resolutio*, and the imperfected breve at d) is written as a breve and a minim). The resolution is in the hand of the main scribe.

Secunda pars, cantus (fol. 120^v), marginal notes:

- a) Ab hoc autem loco pars ista suprema ut signis patet proprijs temporibus ac proportionibus est diversificata, modis attamen tenori adequata.

(From this point on the superius part, as shown by the signs, is characterised by its own time signatures and proportions, but in its modes it agrees with the tenor.)

This note states that the superius is in the same mode as the tenor, the eleventh species (major imperfect mode, minor perfect mode, perfect *tempus*, minor prolation), though the 'indicative' pauses are not present.

- b) Prima species generis multiplicis per relationem ad tenorem.

(First species of the *genus multiplex* by relation to the tenor.)

The word 'species' here refers to the mathematical species discussed in the *Proportionale*. 'Proportion', says Tinctoris, 'is the relation of two terms to each other' (Seay IIa, p. 12). The terms are applied to the note values of one voice as compared to a previous section of the same part or to another voice. The first species of the *genus multiplex* is the simplest of the unequal proportions and the one taken up first by Tinctoris, *proportio dupla*. Two notes of the superius go against one note of the same value in the tenor. In other words, all the note values of the superius under the sign $\frac{2}{1}$ are to be halved. Some of the proportions in this motet are related to the tenor ('per relationem ad tenorem'), others to the previous passage in the superius ('per relationem ad numerum precedentem').

- c) 2^a species eiusdem generis multiplicis per similem relationem.

(Second species of the same *genus multiplex* by a similar relation.)

The second species is *proportio tripla*, where three semibreves are sung to one of the tenor – 'tre semibreve per battere', as the copyist has helpfully indicated in Italian (the 'battere' is always the semibreve of the tenor). The words 'per similem relationem' (i.e., to the tenor) are necessary here, because the relation of this section of the superius to the previous section is not one of *proportio tripla* but of *sesquialtera* (3:2), since the first section is in *proportio dupla*. Another way to calculate this is to multiply $\frac{2}{1}$ by $\frac{3}{2}$, since proportions are cumulative, yielding $\frac{3}{1}$. (On the passage in coloration, see the letter of Spataro to Aaron of 1 November 1523, below, p. 96.)

- d) 3^a species eiusdem generis per similem relationem.

(Third species of the same *genus* by a similar relation.)

The third species is *proportio quadrupla*, exactly double the first section, for which reason the note values are halved again. The relation to the previous section would be *sesquitertia*: $\frac{2}{1} \times \frac{3}{2} \times \frac{4}{3} = \frac{4}{1}$.

- e) 5^a species eiusdem generis per similem relationem.

(Fifth species of the same *genus* by a similar relation.)

The fifth species is *proportio sextupla*, six notes to one of the tenor. Again, the passage stands in a *sesquialtera* relation to the previous section in *proportio quadrupla*: $\frac{4}{1} \times \frac{3}{2} = \frac{6}{1}$. Tinctoris chose to relate these first four proportions to the tenor instead of to the previous section because they show a progressive ordering of the *genus multiplex*, the first *genus*.

- f) 5^a species generis submultiplicis per relationem ad numerum precedentem.

(Fifth species of the *genus submultiplex* by relation to the previous number.)

Tinctoris abruptly shifts out of this ascending scale of proportions (in which longer and longer notes are sung at faster and faster speeds) by changing to *proportio subsextupla*. The prefix 'sub-' added to any proportion reverses its meaning. In effect, it cancels the previous proportion and returns to *integer valor*. These proportions are discussed in Book II of the *Proportionale* (Seay IIa, pp. 37–41). Because this proportional change, exceptionally, occurs in the middle of a measure, the sign of *tempus perfectum* is added at the beginning of the next measure.

g) Prima species generis multiplicis per [similem] relationem.

(First species of the *genus multiplex* by a similar relation.)

Here there is a return to the *proportio dupla* in which the *secunda pars* began.

h) Prima species generis superparticularis per similem relationem.

(First species of the *genus superparticulare* by a similar relation.)

In the *genus superparticulare* the larger number contains the smaller number plus part of it: half if the number is 2, one-third if the number is 3, etc. The first species is *sesquialtera*, 3:2. It will be observed that the note values in this section and the annotation 'tre semibreve per battere' are the same as in the second section (bar 7), yet one is called 'tripla', the other 'sesquialtera'. This is because the second section was related to the tenor, the present section to the previous passage. It is *sesquialtera* to what precedes, but *tripla* in relation to the tenor. The copyist's remarks beneath the notes as to the number of semibreves per beat are particularly helpful from this section on, since they refer to the invariable three beats (semibreves) of the tenor, thus providing a 'back-up system' for the performer who may have lost his way in the maze of signs and numbers.

i) 2^a species eiusdem generis per similem relationem.

(Second species of the same *genus* by a similar relation.)

The second species is *sesquiertia*, 4:3. For the meaning of the isolated black semibreves, see the annotations by Lorenzo Gazio discussed below (p. 99).

k) Prima rursus species eiusdem generis per similem relationem.

(First species again of the same *genus* by a similar relation.)

The music returns to the $\frac{3}{2}$ of the previous section, but now is written in the next higher note values, hence 'tre breve per battere'. The passage could also have been written in the same note values under $\frac{3}{4}$, *proportio subsesquiertia*. The preceding mensuration determines which note values to use under *sesquialtera*. If it is $\bigcirc$ or C , *sesquialtera* should be counted in minims. If it is C or *proportio dupla*, *sesquialtera* is counted in semibreves. If it is *proportio quadrupla* or *sesquiertia*, as it is here, *sesquialtera* is counted in breves. The procedure is explained in the treatise on proportions in the Perugia manuscript, fol. 78.

l) 2^a species eiusdem generis multiplicis per similem relationem.

(Second species of the same *genus multiplex* by a similar relation.)

Subtripla can cancel *sesquialtera* here because the note values are halved in the present section. Had they been written one value larger the appropriate sign would have been $\frac{2}{3}$, *subsesquialtera*.

Secunda pars, tenor (fol. 121), marginal notes (see Figure 3):

a) Ab hoc signo usque ad ultimum ex undecima specie, hoc est modo maiori imperfecto, minori perfecto, tempore perfecto, et prolatione minori, ab ultimo vero ex quintadecima, modo maiori imperfecto, minori perfecto, tempore imperfecto et prolatione minori Tenor ipse componitur.

(From this sign until the last one, the tenor is composed in the eleventh species, that is major imperfect mode [Mx = 2 L], minor perfect mode [L = 3 B], perfect *tempus* [B = 3 S], and minor prolation [S = 2 M]; from the last sign, however, in the fifteenth species, major imperfect mode [Mx = 2 L], minor perfect mode [L = 3 B], imperfect *tempus* [B = 2 S], and minor prolation [S = 2 M].)

The eleventh and fifteenth species again agree with Tinctoris's numbering in his *Tractatus de regulari valore notarum*: 'The eleventh species of composition consists of major imperfect mode, minor perfect mode, perfect *tempus*, and minor prolation.'¹⁰⁴ 'The fifteenth species of composition consists of major imperfect mode, minor perfect mode, imperfect *tempus*, and minor prolation.'¹⁰⁵ The pauses in this *pars* follow the mensuration sign; they are 'essential'.

The first half of the tenor (to bar 49) contains eight periods of six bars each. The second half is comprised of five and a half periods of six bars each; here Tinctoris did not follow the periodisation based on the *modus* of the maxima (perhaps because no maximae occur) since there are three bars too many or too few. But the *modus* of the long is observed (11 × 3 bars). The correlation between modal division and cadential structure is less clear in the *secunda pars*, though it becomes more regular once Tinctoris is past the proportional sections of the superius and contratenor. The use of *proportio dupla* in the two outer voices produces a curious effect. Two breves in

¹⁰⁴ 'Undecima species compositionis fit ex modo maiori imperfecto, modo minori perfecto, tempore perfecto et prolatione minori.' (Seay 1, p. 135.)

¹⁰⁵ 'Quintadecima species compositionis fit ex modo maiori imperfecto, modo minori perfecto, tempore imperfecto et prolatione minori.' (Seay 1, pp. 136-7.)

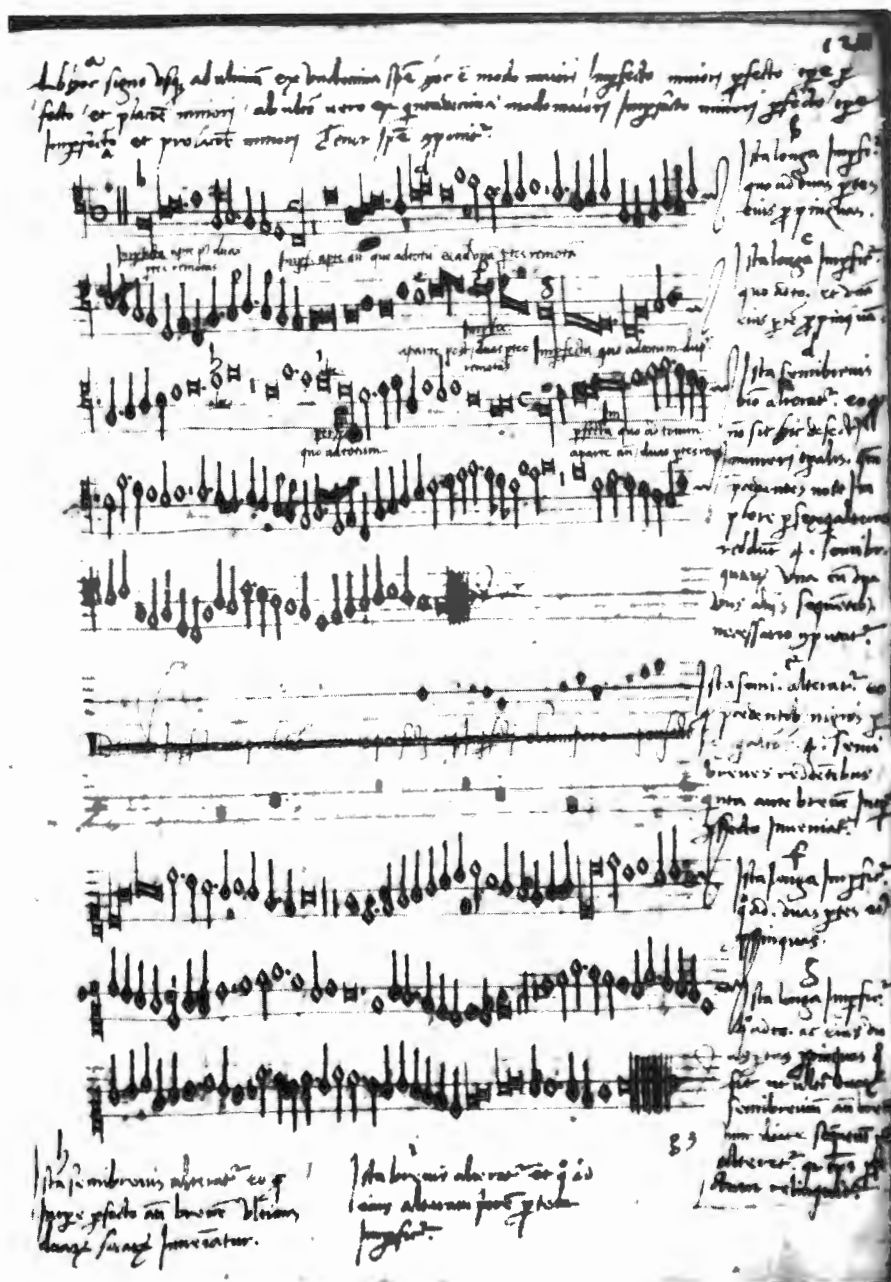


Fig. 3. Johannes Tinctoris, *Difficiles alios delectat pangere cantus, secunda pars, tenor*, Perugia, Biblioteca Comunale Augusta, MS 1013, fol. 121

triple mensuration must go against one breve in triple mensuration in the tenor, but the proportions are calculated against the *battere* or semibreve of the tenor. Therefore the two perfect breves must be performed as if they were three imperfect breves, matching each imperfect breve against a semibreve of the tenor. The result is a mensuration that is sometimes triple, sometimes duple, and frequently – because of syncopations – neither (see, for example, 2.p., cantus, bar 9). Willi Apel has remarked upon this phenomenon.¹⁰⁶ He explains that *proportio dupla* changes the notated *modus* to *tempus* and *tempus* to *prolatio*. In other words, under O_1^2 , the *modus perfectus* ($L = 3 B$) becomes *tempus imperfectum* ($B = 2 S$). In terms of modal structure, cadences could fall at the end of any bar, but in this *pars* they are largely coordinated with the long of the tenor and therefore occur more often at the end of every third bar.

b) *Ista longa imperficitur quo ad duas partes eius propinquas.*

(This long is imperfected as to its two near parts.)

This is Tinctoris's second manner of imperfected the long (*Liber imperfectionum notarum musicalium*; Seay I, p. 162), which loses the value of two semibreves. The scribe writes: 'Imperfecta a parte post [per] duas partes remotas', which is another way of stating the same thing.

c) *Ista longa imperficitur quo ad totum et unam eius partem propinquam.*

(This long is imperfected as to the whole and one near part.)

The fourth manner of imperfected the long (Seay I, p. 162), which loses the value of a breve and a semibreve. The scribe makes the same error as he did in note h) to the *prima pars*, calling 'remota' the note that is actually 'propinqua'. The passage in black notation, directly following, illustrates a case where coloration under O does not call for imperfection and syncopation but for *sesquialtera*, producing crotchet triplets against each semibreve of the tenor. (For a discussion of this passage, see below, p. 97.)

d) *Ista semibrevis non alteratur eo quod non sit hic defectus numeri temporalis quoniam precedentes note implere per sexquialteras reddunt 4 semibreves quarum una cum duabus aliis sequentibus necessario computatur.*

¹⁰⁶ *Notation of Polyphonic Music*, pp. 148–50.

(This semibreve is not altered because there is no deficiency of the number of the *tempus* since filling in the preceding notes through *sesquialtera* renders four semibreves, of which one is necessarily counted with the two others following.)

In case the performer did not discern the correct resolution of the passage in coloration, this note tells him that it covers four beats. Thus, the two succeeding semibreves fill out the rest of the bar, and alteration (which normally occurs when two semibreves precede a breve) is not necessary. The concept of 'defectus numeri' is discussed in Tinctoris's *Tractatus alterationum*, which, in fact, is a response to an unnamed singer at the ducal court in Milan who claimed that the theorist himself, in his *Missa Nos amis*, had committed an error in placing two semibreves, the second of which is not altered, between two breves. Tinctoris quotes the example, then shows that because of the two preceding semibreve rests, there is no 'defectus numeri' and therefore the second semibreve is not altered (Seay I, p. 173).¹⁰⁷

- e) *Ista semibrevis alteratur eo quod precedentibus nigris per sexquialteras 4 semibreves reddentibus quinta ante brevem in tempore perfecto inveniatur.*

(This semibreve is altered because it occurs as the fifth before a breve in perfect *tempus* since the preceding black notes through *sesquialtera* render four semibreves.)

This single white semibreve bridges two passages in coloration. The first is in *sesquialtera*; in the second, black notation merely indicates imperfection. Again, the annotator specifies that the black notes fill four beats. Thus the white semibreve is the fifth in a series before a breve; the first three semibreves fill a bar, therefore the second of the following two must be altered to fill another bar.

- f) *Ista longa imperficitur quo ad duas partes eius propinquas.*

(This long is imperfected as to two near parts.)

This is the same as b) above.

¹⁰⁷ It was this example that enabled Reinhard Strohm to identify Tinctoris's Mass, which was otherwise unknown. The three-voice Mass is found anonymously and without title in Strahov, Monastery Library, MS D.G.IV.47 (now in Prague, Památník Národního Pisemnictví), fols. 114^v–116, 117^v–119. The Kyrie and Gloria also occur in Trent, Castello del Buon Consiglio, Biblioteca della Soprintendenza, MS 89, fols. 162^v–164 and the Credo in the Speciálník Codex (Hradec Králové, Krajské Muzeum, MS II A 7), pp. 168–70 – all anonymous and without title; see Strohm, 'Die Missa Super "Nos amis" von Johannes Tinctoris', pp. 34–51, esp. p. 41.

- g) *Ista longa imperficitur quo ad totum ac eius duas partes propinquas quo fit ut ultima duarum semibrevium ante brevem immediate sequentium non alteretur quia tempus perfectum relinquit.*

(This long is imperfected as to the whole and two near parts, by which it follows that the last of the two semibreves before the breve immediately following should not be altered because it would abandon perfect *tempus*.)

The long loses the value of a breve and two semibreves, which leaves space for two more semibreves in the bar. Therefore, since there is no 'defectus numeri', the second of the two following semibreves does not undergo alteration. Again, the scribe's annotation, 'Imperfecta quo ad totum dupliciter', means that the note is imperfected 'quo ad totum' in two ways (see note (m) to the *prima pars* of the tenor).

- h) *Ista semibrevis alteratur eo quod in tempore perfecto ante brevem ultima duarum solarum inveniatur.*

(This semibreve is altered because it is found as the last of two single [semibreves] before a breve in perfect *tempus*.)

At first sight it seems that the semibreve ought to imperfect the following breve, but the breve must be perfect because it is followed by a breve rest ('similis ante similem semper est perfecta'). The semibreve actually is paired with the preceding semibreve C. The presence of an intervening note makes no difference, as Tinctoris remarks in his second general rule of alteration: 'The second general rule is that it does not matter if the two single notes found, of which the latter should be altered, are continuous or syncopated.'¹⁰⁸ This passage was discussed by del Lago in his letter to Lorenzo Gaudio of 6 May 1535 (see below, pp. 94–5).

- i) *Ista brevis alteratur et quo ad eius alteram priorem partem imperficitur.*

(This breve is altered and is imperfected as to its other first part.)

This is another example of simultaneous alteration and imperfection (see note (1) to the *prima pars* of the tenor). These are the only two examples of alteration for which no explanation is given. They both illustrate the rule 'if two single breves in the minor perfect mode are found before a long or its pause, the last of them is altered' (Seay I,

¹⁰⁸ 'Secunda generalis regula est quod non refert si duae notae solae inventae quarum ultima venit alteranda sint continuatae aut syncopatae.' (Seay I, pp. 174–5.)

p. 178). It makes no difference whether they are contiguous or separated by other notes. In the *prima pars*, the first breve was perfect, the second imperfected by the intervening notes. In the present passage, both breves are imperfected. Nevertheless, they make a pattern of two breves before a long in the minor perfect mode. Alteration is necessary to avoid a 'defectus numeri', for a long in the minor perfect mode must be preceded by a unit of the value of three breves.

[k] The scribe has added a comment beneath the maxima in bar 57: 'Imperfecta quo ad totum a parte ante, duas partes remotas.' (Imperfect as to the whole by a preceding part, two remote parts.) This is correct, though, as usual, he calls 'remota' what Tinctoris calls 'propinqua'.

Secunda pars, contra (fol. 121^v), marginal notes:

- a) Similiter respondentur signa partem hanc contratenoris et ab isto loco proportionibus, temporibus et prolotionibus ostendunt diversificari licet modus sit tenori similis.

(The signs are similarly placed in this contratenor part and from this point they show differentiation in proportions, *tempus*, and prolations, though the mode is the same as in the tenor.)

The contratenor and the superius both begin in *proportio dupla*, but go their own way in the proportional sections. Tinctoris shows how the same result can be accomplished by using numerical proportions in one voice and coloration in the other (e.g., at bar 13) or different numerical proportions in each voice (e.g., bars 26, 28, 31, 34).

- b) Prima species generis multiplicis per relationem ad tenorem.

(First species of the *genus multiplex* by relation to the tenor.)

Proportio dupla.

- c) Prima species generis submultiplicis per relationem ad numerum precedentem.

(First species of the *genus submultiplex* by relation to the preceding number.)

Proportio subdupla, cancelling the previous proportion.

- d) Secunda species generis multiplicis per similem relationem.

(Second species of the *genus multiplex* by a similar relation.)

Proportio tripla (in this case both to the preceding section and to the tenor).

- e) Prima rursus species generis submultiplicis per similem relationem.

(First species again of the *genus submultiplex* by a similar relation.)

Proportio subdupla. Most of the proportions signal a change in metre between $\frac{3}{2}$ and $\frac{9}{4}$, with proportional equivalence of the semibreve, a *sesquialtera* relationship. In this case no change occurs in the $\frac{9}{4}$ metre. The sign $\odot$ indicates that there should be nine minims in the breve. *Subdupla* cancels the previous *proportio tripla*, causing the notes to be sung in *integer valor* instead of halved as before. The copyist's 'una minima' is the only mistake he made in describing the proportions; it should be 'tre minime'.

- f) Prima species specialissima speciei subalter[n]atione generis multiplicis superpartientis per similem relationem.

(First irreducible species of the species in subalternation of the *genus multiplex superpartiens* by a similar relation.)

This is the only proportion in the *genus multiplex superpartiens* (where the larger number includes the smaller one at least two times plus at least two parts of it). In 8:3 the larger number contains the smaller one twice plus two parts of it and is called *dupla superbipartiens tertias* (Seay IIa, p. 34). Tinctoris has written the passage in very large note values so that eight minims of the new passage can be directly compared with three of the former passage.¹⁰⁹ And, indeed, the scribe has specified 'octo minime per battere' instead of 'due breve per battere', which would come to the same thing. In spite of its forbidding name, *dupla superbipartiens tertias* is nothing more than the common 4:3, *sesquitertia*, but with the higher number referring to a smaller unit, minim instead of semibreve. In this very passage it is paired with *sesquitertia* in the superius, 'quattro semibreve per battere'.

- g) 3^a species generis submultiplicis per similem relationem.

(Third species of the *genus submultiplex* by a similar relation.)

Subquadrupla brings us out of the very large note values back to *integer valor*.

¹⁰⁹ In this it differs from the example of 8:3 in Tinctoris's *Proportionale* (Seay IIa, p. 35), where the note values are not changed; they must, however, be reduced by half to fit the tenor.

h) Prima species generis multiplicis per similem relationem.

(First species of the *genus multiplex* by a similar relation.)

Dupla causes a return to the proportion of the beginning of the *pars*, but now the mensuration is duple rather than triple in contratenor and superius (the tenor does not change to duple metre until bar 49). Nevertheless, there is good reason to transcribe the outer voices in $\frac{3}{2}$ until bar 49, both because it makes them easier to read against the tenor and because the fifteen bars cannot be evenly divided by 2. Moreover, the cadences fall at the proper points with respect to the minor perfect mode of the tenor.

At this point the reader will undoubtedly breathe a sigh of relief, sympathising with the would-be *musicus* of Tinctoris's time, who must sometimes have thought he was undertaking the labours of Hercules. But what of the result? Once the musician has deciphered the tenor and written out a resolution such as the Perugia manuscript provides, once he has worked out all the proportional relationships and distinguished the various meanings of the blackened notes, once he has firmly fixed in his mind the changing values of maxima and long under the various mensuration signs, what is the musical result? Here the *musicus* will feel richly rewarded, for *Difficiles alios* is as light and graceful in sound as it is obscure and problematic on paper. Unlike, for example, the fugue of the Hammerklavier sonata, which looks difficult and sounds difficult, Tinctoris's motet merely looks difficult. Even the complicated proportions of the *secunda pars* produce no more than a slight ruffling of triplets against the basic $\frac{3}{2}$ mensuration. Thus the first pair of 'types of composition' listed in the margin of the superius takes on a new meaning: *Difficiles alios* looks 'difficilis' but sounds 'facilis'.

Difficiles alios is written in what Tinctoris would call the 'sextus tonus mixtus' (Seay I, p. 84), that is, the Lydian mode, authentic mixed with plagal, but with emphasis on the plagal range. This characterisation derives from the tenor part, as Tinctoris counsels (Seay I, p. 86), but it also applies to the superius and contratenor. The tenor is a cantus firmus, but frequently becomes an equal partner with the other voices. *Difficiles alios* differs from Tinctoris's Masses and motets primarily because it was not written to a text: the phrases are very long and there are no repeated notes. (Text setting

was not one of Tinctoris's primary concerns; even in his later music repeated notes and short phrases, as observable in text-orientated music, are rare.)

In his last rule of counterpoint (Seay II, p. 155), Tinctoris advises the composer to seek variety: in note values, cadences, proportions, intervals, syncopations, imitation, pauses, ornamentation. In *Difficiles alios* he has anticipated all his precepts. Note values range from maxima to fusa (*pace* Tinctoris! a minim in *proportio quadrupla*), but this is probably not what Tinctoris has in mind by suggesting *diversitas* 'nunc per unam quantitatem, nunc per aliam'. Rather, he seems to call for variety in rhythm, with passages that move now in semibreves and minims, now in minims and semiminims, now with even quicker values predominating. The contrast of the broad passage beginning in bar 30 of the *prima pars* with the preceding section is striking. The cadences, as noted before, are coordinated with the mensuration of the tenor. The major ones are on F, the mode of the piece, others mainly on F and C, with an occasional cadence on A Phrygian. The Lydian mode (with its strong leaning towards Ionian because of the Bb signature in the lower parts) is presented so consistently that the deflection to G minor in bar 15 becomes an event. Here Tinctoris has mixed the Lydian mode with transposed Dorian, or, as he would say, 'sextus tonus commixtus secundo irregulari'.

Tinctoris warns that not all varieties that would be suitable for a motet are appropriate to a chanson, nor would those for a motet necessarily be fitting in a Mass (Seay II, p. 155). Among those varieties he names, proportions would be less suited to a chanson or motet than to a Mass, and indeed they are not found in Tinctoris's other chansons and motets, which are small pieces. They are present in *Difficiles alios* because its length allows the proportions their just share. Tinctoris understood that one must consider proportions not only between the different parts of a composition but also between the whole and its parts.

In only one aspect of *Difficiles alios* might one be inclined to believe that Tinctoris did not follow his own precepts, and that is with regard to the admonition to compose 'nunc cum fugis, nunc sine fugis' (Seay II, p. 155). His definition of 'fuga' has generally been understood to describe canon, not imitation,¹¹⁰ but it does not specify

¹¹⁰ 'Fugue is the likeness of the voice-parts in a composition as to the value, name, and shape of

that the *fuga* has to run for a whole piece or section, and the use of the plural, 'nunc cum fugis', instead of the singular would seem to indicate that 'fuga' embraces imitation as well as canon. *Difficiles alios* has few examples of imitation, but they are all set in relief in two voices against a held note in the tenor (see 1.p., bars 34–5, 46–7; 2.p., bars 21–2, 50–1, all at the unison, fifth, or octave). In Tinctoris's later works imitation is given a more extensive place. It is not yet the word-generated motivic imitation of Josquin but a technique in which melodic similarity – whether at the beginning of a theme or internally – is sought, sometimes even at the expense of rhythmic similarity.¹¹¹ *Difficiles alios* shows an early stage in the development of this style, which is already adumbrated in the examples of the counterpoint treatise.

TINCTORIS'S 'DIFFICILES ALIOS' IN THE SPATARO CORRESPONDENCE

A piece such as *Difficiles alios* was meant to test the mettle not only of students but also of other theorists; Gafurius was probably the first to try his hand at solving it. When Tinctoris, in 1477, characterised the music of forty years earlier as no longer worth hearing (Seay II, p. 12), perhaps he thought that his own music would be outmoded forty years after it was written. Of all Tinctoris's musical offspring, *Difficiles alios* had the longest life. Its career can be traced and its fame judged through the letters of the Spataro correspondence, where it is discussed in no fewer than six epistles. The earliest letter (quoted at the beginning of this paper) is from 1520, in which Giovanni da Legge asked Giovanni del Lago for 'quella bella cosa di Tinttoris'. Of the other letters, three concern the mensuration, one a problem in imperfection, and one an unusual type of coloration.

The central figure in the discussion of Tinctoris's motet is Giovanni del Lago, 'priest in the Church of Santa Sophia in Venice', and author of a *Breve introduttione di musica misurata* (Venice, 1540).¹¹² In

their notes and rests, and sometimes even to their degree on the staff.' (Parrish, *Dictionary*, p. 33.)

¹¹¹ A good example of internal imitation, that is, imitation that does not begin in both voices after a pause but is prefaced in one or both voices by unrelated notes, is his chanson *Hélas* (*Johanni[s] Tinctoris opera omnia*, ed. Melin, pp. 130–1). See cantus and tenor, bars 4–8, 10–12, 15–18, 20, 21–2, and all three voices, bars 25–6.

¹¹² For a portrait of del Lago as drawn from his letters, see D. Harrán, 'The Theorist Giovanni

his letters del Lago frequently cites specific musical compositions to make his points. He must have owned or had access to a copy of Tinctoris's *Difficiles alios* that included the marginal glosses, several of which he refers to and one of which he quotes verbatim. Being a Venetian, he may even have used the Perugia manuscript, which was in fact copied in Venice in 1509.

In a lengthy letter concerning mensuration signs and their meanings, written to Giovanni Spataro on 23 August 1532,¹¹³ del Lago argues that the *modus* is valid for the whole composition and does not change when there are different mensuration signs. This was observed by 'Tinctoris in a composition of his for three voices written to some verses that begin *Difficiles alios delectat pangere cantus* in the tenor in the *prima pars*, and likewise in the tenor in the *secunda pars*, in the superius, and in the contratenor'.¹¹⁴ Actually, only in the tenor of Tinctoris's motet are there changes in the mensuration. In the *prima pars* the tenor begins perfect in all quantities: major perfect mode, minor perfect mode, perfect *tempus* and perfect prolation; half way through it changes to imperfect *tempus* and major prolation, retaining the perfection of the two modes. In the *secunda pars* the tenor is written in the major imperfect mode and minor perfect mode, the first half being in perfect *tempus* and minor prolation, the second in imperfect *tempus* and minor prolation. Only in the tenor is the mode indicated, by use of rests covering three spaces. In the superius of the *prima pars*, the mensuration is specified as 'ninth species', that is major perfect mode, minor perfect mode, perfect *tempus* and minor prolation, and the contratenor agrees, though the question of mode is irrelevant – as far as the notation is concerned – in these two voices since there is no value larger than a breve. However, *modus* influences the placement of cadences (see above, pp. 66 and 79–81). In the *secunda pars* the superius and contratenor agree with the tenor in their modes, but have their own *tempus* and proportions.

Spataro replied, in a letter directed to Pietro Aaron,¹¹⁵ that when a

del Lago: A New View of the Man and his Writings', *Musica Disciplina*, 27 (1973), pp. 107–51, esp. pp. 143–8.

¹¹³ Vatican City Vat. Lat. 5318, fols. 22–33^v.

¹¹⁴ 'Et similmente da Tinctoris in uno suo canto a tre voci fatto sopra alcuni versi li quali principiano così: *Difficiles [sic] alios delectat pangere cantus*, nel tenore della prima parte, et similmente nella seconda parte del tenore, et nella parte suprema, et nel contratenore.' (Vatican City Vat. lat. 5318, fols. 30^v–31.)

¹¹⁵ Paris, Bibliothèque Nationale, MS ital. 1110, fols. 68–77 (not dated), written during a period in which Spataro refused to answer personally any letter from del Lago.

composer uses pauses to indicate *modus*, he cannot change *modus* in the middle of a composition because the pauses would logically be understood as 'essential'. Spataro, however, recommends using mensuration signs to indicate *modus*, a system followed by Hothby; they allow one to change *modus* within a composition.¹¹⁶

Del Lago was not convinced by Spataro's remarks, and further research into the question of mensuration left him confused. We can see this from his letter of 27 August 1539 to Pietro Aaron.¹¹⁷ As we know from a note at the end of the letter, which is a copy del Lago made for himself, his purpose was to test Aaron ('io ho mandato a richieder lo soprascritto dubbio a Frate Pietro Aaron per tentarlo') – a practice del Lago found irresistible and which got him into trouble with the sharp-tongued Spataro. Del Lago asks Aaron to clarify the order of the mensurations because he finds that Hothby, Éloy and Tinctoris disagree. For Hothby, he refers to a canon or

round in which he demonstrates the value of the notes.¹¹⁸ And Éloy, in his Mass composed on the antiphon *Dixerunt discipuli ad beatum Martinum*,¹¹⁹ has an order different from that used by Hothby. And Tinctoris, in a composition for three voices written to some verses that begin *Difficiles alios delectat pangere cantus*, etc., likewise has a different manner, very different in order from the two named above, Hothby and Éloy, as appears in his glosses to the soprano, the *prima pars* of the tenor, and the *secunda pars* of the tenor. But Éloy and Tinctoris say there are sixteen species of modes, and this is the only thing they agree on, but as for the order, that is first, second, third, etc., they differ greatly from each other.¹²⁰

¹¹⁶ *Ibid.*, fols. 73^v–74.

¹¹⁷ Vatican City Vat. lat. 5318, fols. 181–182.

¹¹⁸ Hothby's 'rota' is not included in *The Musical Works of John Hothby*, ed. A. Seay, *Corpus Mensurabilis Musicae* 33 (n.p., 1964), unless del Lago has in mind the proportional motet *Ora pro nobis* (pp. 4–7), which, though not canonic, uses a variety of mensural signs, but not in a systematic manner. Nor have I found such a work in Hothby's treatises. (It might be merely a diagram in the shape of a circle, *rota* meaning 'wheel'.) A brief explanation of Hothby's teachings on mensuration is included in his *De cantu figurato* (CS III, p. 331), and Faenza, Biblioteca Comunale, MS 117, a collection of fifteenth-century treatises on musical theory, contains a table of mensural signs 'secundum J. Hothbi' (fol. 62^v).

¹¹⁹ The five-part Mass survives in Cappella Sistina 14, fols. 56–65. R. G. Kiesewetter included a transcription of the first Kyrie and the third Agnus Dei in his *Geschichte der europäisch-abendländischen oder unsrer heutigen Musik* (Leipzig, 1834), Appendix, pp. XII–XIV. On Éloy d'Amerval, poet and musician, see G. Reese, *Music in the Renaissance* (rev. edn, New York, 1959), p. 263, and the literature cited there.

¹²⁰ 'Perché Frate Gioanne Othobi tiene un'ordine, come appar in una sua rota, nella qual dimostra il valor delle notule. Et Eloi, in una soa messa composta sopra la antiphona *Dixerunt discipuli ad beatum Martinum*, tiene un'altro, diverso di quello che ha tenuto Othobi. Et Tintoris in uno suo canto a tre voci fatto sopra alcuni versi gli quali dicono così, *Difficiles alios delectat pangere cantus*, etc., similmente tiene un'altro modo quanto all'ordine molto diverso a quello che hanno tenuto gli duoi sopra nominati, cioè Othobi et Eloi, come

Del Lago then refers to Stephanus Vanneus, who, in his *Recanetum de musica aurea* of 1533, lists twenty-four species, to Aaron himself, who gives twenty-four species in a different order in his *Thoscanello*, and to Giovanni Maria Lanfranco, who in his *Scintille di musica* of 1533 lists sixteen, in yet another order.¹²¹ Del Lago's interest in this problem goes back at least to 1523, when Giovanni da Legge asked him for a copy of the *Missa Dixerunt discipuli*, 'with the annotations of the modes where necessary' (see above, pp. 29–30).

It is curious that del Lago refers to Tinctoris's *Difficiles alios*, for it makes use of only five species: the first, the fifth, the ninth, the eleventh, and the fifteenth. The numbers refer to the order Tinctoris gave them in his *Tractatus de regulari valore notarum* (Seay I, pp. 121–38), which del Lago does not mention, though he probably knew it since he is aware that Tinctoris lists sixteen different species. From *Difficiles*, however, del Lago could see that Tinctoris placed the mensurations in a certain order. In Éloy's Mass, the seven-note cantus firmus is to be sung sixteen times, under the sixteen different mensurations. The proper pauses and mensuration signs indicate which mensuration is to be followed. Though Éloy agrees with Tinctoris in the designation of the mensurations, he does not place them in the order Tinctoris gave them but begins with the eleventh and twelfth species in the Kyrie, probably because the shorter note values under these species fit the shorter text better. The Gloria begins with the first species; the remaining species unfold in order, skipping the eleventh and twelfth. Tinctoris, in his *Proportionale musices*, praises Éloy as 'in modis doctissimum' and gives an example from this Mass showing his use of two pauses occupying three spaces each as the sign of the minor perfect mode (Seay IIa, pp. 55–6).¹²²

If del Lago had to admit confusion in the matter of designating the

appare nelle sue glosse fatte in dichiarazione di tal suo canto, cioè nella glossa del soprano, et in quella del tenore della prima parte, et similmente in quella del tenore della seconda parte. Ma Eloi et Tintoris dicono esser sedici spetie di modi, et in questo solamente si concordano. Ma quanto all'ordine, cioè primo, secondo, terzo, etc., molto sono discrepanti l'un da l'altro.' (Vatican City Vat. lat. 5318, fols. 181–181^v.)

¹²¹ For a survey of the various systems of indicating mensuration in the fifteenth and sixteenth centuries, see J. Wolf, *Handbuch der Notationskunde*, 2 vols., I (Leipzig, 1913), pp. 410–15.

¹²² Seay gives 'modus minor imperfectus', noting the variant reading 'perfectus' in only one source. The latter is correct, however, as the *Tractatus de regulari valore notarum* confirms: 'Signum modi minoris perfecti est longalis pausa tria occupans spatia.' (Seay I, p. 129.) The minor imperfect mode has two pauses occupying two spaces each. Gafurius, in his *Practica musicae*, refers to the same Mass in much the same words, but without example (trans. Miller, p. 85).

mensural modes, he prided himself on his knowledge of the intricacies of the notational system. One of his correspondents on this matter is the Benedictine monk, Lorenzo Gazio, clearly del Lago's inferior in theoretical knowledge, as del Lago does not hesitate to make clear in his letters. Gazio had received from his nephew, Don Valeriano, a tenor composed in the minor perfect mode, imperfect *tempus*, with a request for its resolution. Gazio replied to Valeriano on Easter Sunday, 1535:

not only in those places that Messer Pre Zanetto [del Lago] says, but in many others this tenor is very false, and therefore I would advise Messer Adriano Willaert that whatever he has composed over this tenor should not be seen in public because it would certainly bring him more shame than honour among experts. I would certainly like to know who the composer is

and he sent a resolution, arrived at 'more by guessing and interpreting the composer's mind than by the art that is in the work'.¹²³ The letter had somehow fallen into the possession of del Lago who, after revealing that the tenor belongs to a three-voice composition from his own pen, thunderously and mercilessly blasts Gazio's ignorance and presumption, for the tenor is correctly written, full of art and subtlety, and Gazio's resolution is replete with errors.¹²⁴

In this letter, stretching over fifteen folios, del Lago explains, breve by breve, how the tenor should be resolved, bolstering his explanations with quotations from Gafurius's *Practica musicae*¹²⁵ and Johannes de Muris's *Libellus cantus mensurabilis* on the rules for imperfection and alteration. At the end he gives the tenor, *Multi sunt vocati pauci vero electi*,¹²⁶ in its original notation and in a resolution into

¹²³ 'non solamente in quelli lochi che dice Messer Pre Zanetto, ma in molti altri epso tenore se trova falsissimo, per il che lauderia a Messer Adriano che quello che lui ha composto sopra esso tenore che per niente lo desse fora, perché certamente apud peritos più ge seria de vergogna che de honore. Voluntiera saperia chi è statto lo compositore. Se pur ve piacesse la resolution sua, giugando più presto a indovinar et interpretar la mente del compositore che per l'arte che sia in epso, i[o] ve la mando'. (Vatican City Vat. lat. 5318, fol. 175.)

¹²⁴ Letter to Lorenzo Gazio of 6 May 1535 (Vatican City Vat. lat. 5318, fols. 85–101^v).

¹²⁵ Particularly ironic, because Gazio was a friend of Gafurius, whom he calls 'nostro amicissimo' in a letter to del Lago of 9 September 1534 (Vatican City Vat. lat. 5318, fol. 185^v).

¹²⁶ The composition has not survived, but it is mentioned by Pietro Aaron in his *Trattato della natura et cognitione di tutti gli tuoni* (Venice, 1525), fol. c2^v, as an example of the seventh mode ('Multi sunt vocati pauci vero electi del venerabile Messer Pre Zaneto Veneto'). Gazio was so upset by the thought that Willaert had composed something on del Lago's tenor that he himself went to Venice (undoubtedly before he had received del Lago's letter) and censured and heaped insult on the tenor; this we know from a letter Aaron wrote from

breves. In the course of the letter he cites passages in several other compositions to underline his points.

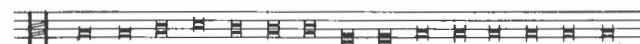
To illustrate Gazio's erroneous resolution of the passage



as



instead of



because he ignored the elementary rule 'similis ante similem semper est perfecta' – in this case the breve *d'* imperfects not the first but the second long – del Lago refers to Bartolomeo Ramis's *Tu lumen*, Tinctoris's *Missa Elas*, Philippo de Primis's *Missa Pourtant se mon*, and Tinctoris's *Difficiles alios*. Only the last of these seems to have survived. Del Lago speaks of 'a passage in the tenor in the second part'. What he must have in mind is the following passage (see 2.p., bars 45–9):



The second semibreve *c'* cannot imperfect the breve *a*, which stands before another breve. Nor can it imperfect the next breve, which also stands before a breve. It must therefore imperfect the last breve. The annotator of the Perugia manuscript did not think that this particular passage needed any explanation.

As an example of a particular sort of alteration, del Lago again refers to Tinctoris's *Difficiles alios*:

in the second part of the above-mentioned song, *Difficiles alios*, etc., in perfect *tempus* he alters the second semibreve before the breve by drawing the first semibreve together¹²⁷ with the second, as appears in his gloss in

Padua to del Lago on 12 May 1535 (Vatican City Vat. lat. 5318, fol. 171): 'el nostro Don Lorenzo è stato dui giorni a Vinegia et andato da Messer Adriano et ha molto biasmato et smachato el vostro tenore.' Willaert's composition has not survived either.

¹²⁷ 'Drawing together' is used here to translate *reducere*, which means 'to draw backwards, to lead back, to bring back'. In other contexts it may also be translated 'to imperfect' or 'to be imperfected by'. In music theory it means to connect two or more notes so as to form a perfection and can refer to imperfection, alteration, or syncopation. In his *Diffinitorium*, Tinctoris defines *reductio* as 'unius aut plurium notarum cum maioribus quas imperfectiunt aut cum sociis annumeratio' ('*reductio* is the counting together of one or more notes with greater ones which they imperfect, or with their companions'). Carl Parrish's translation of *aut cum sociis* as 'or their equivalents in value', and the addition of a comma after *maioribus*

explanation of that semibreve, which says: 'Ista semibrevis alteratur eo quod in tempore perfecto ante brevem ultima [duarum] solarum inveniatur'.¹²⁸

The passage to which del Lago refers is marked 'h' in the Perugia manuscript (see 2.p., bars 35–9) and the gloss there agrees word for word with del Lago's quotation, except for the word 'duarum' left out by del Lago. The passage he cites is the following:



The natural inclination is to imperfect each breve by its preceding semibreve. However, the breve rest after the last breve causes the latter to remain perfect, according to the rule 'similis ante similem semper est perfecta'. Therefore the *tempus* must be filled out by altering the second semibreve. The dot after *d'* is one of perfection.

Del Lago again returns to Tinctoris's motet towards the end of his letter to illustrate a 'mediated imperfection', that is, imperfection of a note by two other notes that are separated by a third note, which should not be used without some indicative sign, such as a dot or coloration. He says:

Such mediated imperfection was used by Tinctoris in his above-mentioned motet, *Difficiles alios*, etc. In the first part of the tenor under the sign of imperfect *tempus* and perfect prolation, the sixth minim (which has a dot after it at the top of the stem) is drawn together with the second breve of the sign, which minim imperfects the other near part included in this breve as to its whole. Tinctoris demonstrates this mediated perfection by the dot, which signifies a transfer of place.¹²⁹

lead him to the erroneous belief that 'Reduction is simply the result of imperfection, in which a larger note in a perfect mensuration is reduced from its normal value of three to two values of the next smaller unit' and that *aut cum sociis* 'means that the smaller note which causes the imperfection might be either a single note or a group of notes of still smaller notes equivalent in value to it'; see *Dictionary of Musical Terms*, pp. 54–5, p. 91, n. 83. In this context, 'reduction' is a false cognate.

¹²⁸ 'nel tenore della seconda parte del predetto suo canto, cioè *Difficiles alios* etc. fa alterare nel tempo perfetto la seconda semibreve inanzi la breve per la reductione della prima semibreve alla seconda, come appar in eius glossa in dichiarazione di tale semibreve, la quale così dice: Ista semibrevis alteratur eo quod in tempore perfecto ante brevem ultima solarum inveniatur'. (Vatican City Vat. lat. 5318, fol. 92^v.) In his study of Vatican City Vat. lat. 5318 (cited in note 1) Jeppesen was the first scholar to draw attention to Tinctoris's motet. Citing the present letter and one other he remarks that both this motet and the *Missa Elas* 'seem to have disappeared' (p. 37, n. 42).

¹²⁹ 'E tale modo, cioè tale imperfettione mediata, à stata usata da Tintoris nel suo prenominato concento, cioè *Difficiles alios* etc. nella prima parte del tenore. Sotto il segno di tempo imperfetto et prolatione perfetta reduce la sesta minima (la quale è puntata nella sumità della coda a parte posteriori) alla 2^a breve del predetto segno, la quale minima fa

Del Lago makes reference to the following passage (see 1.p., bars 28–32):



The marginal notes h) and i) in the Perugia manuscript clarify the imperfection of the two breves. The first states that 'this breve is imperfected as to one near part to avoid alteration'. The breve itself, according to the mensuration, is imperfect, but it consists of two perfect semibreves, and thus 'near part' means a minim is lost from the second half of the breve. The second note simply says that 'this breve is imperfect as to all its near parts', and therefore two minims must be involved, the one that follows immediately, and the next one, which follows after a semibreve marked with a dot of perfection. The dot following the second minim is necessary, as del Lago says, for it prevents alteration of the following minim. This particular type of mediated imperfection produces an unusual syncopation (see 1.p, tenor, bars 30–1).

Tinctoris's motet is also referred to in a letter from Spataro to Aaron of 1 November 1523.¹³⁰ After the appearance in print of Aaron's treatise, *Thoscanello de la musica*, in 1523, Spataro sent Aaron a series of letters in which he took up, chapter by chapter, the points in Aaron's treatise that he found debatable. This is the second in the series, written – full of relief and joy – after he received a letter from Aaron who took his first criticism in good part.

With regard to chapter 35 of Book 1, 'On the blackened breve', Spataro quotes the following statement by Aaron: 'The second type [under perfect *tempus*] is that every black breve under perfect *tempus* is diminished by a third part, which is a semibreve, because this breve is formed from a ternary number, and so all the black semibreves around this breve are the same value as if they were white, but they only serve to complete the perfect number.'¹³¹ To this Spataro writes:

imperfetta l'altra sua parte propinqua inclusa in essa breve quanto al suo tutto, la quale imperfettione mediata il predetto Tintoris la dimostra con il punto, qui[a] punctus significat transitum localem.' (Vatican City Vat. lat. 5318, fol. 98^v.) The *punctus transportationis* or *translationis* is not mentioned by Tinctoris in his treatises, but Gafurius treats it in Book II, chapter 12 of his *Practica musicae* (trans. Miller, pp. 104–5).

¹³⁰ Vatican City Vat. lat. 5318, fols. 201–202.

¹³¹ 'El secondo modo, che ogni breve negra soto el tempo perfecto è diminuta de una tertia parte quale è una semibreve, et questo per essere essa breve formata de numero ternario, e così tute le semibreve negre apresso esse breve sono nela quantità come se fusseno vacue, ma solo stano in augmento del numero perfecto.' (Vatican City Vat. lat. 5318, fol. 202;

But certainly I have doubts about this opinion, and this is only because I have found [an exception] in certain learned old and modern writers, as Tinctoris in a very difficult motet of his, of which I don't remember the name, who places these notes thus:



or thus:



In this motet Tinctoris did not mean that the black breve and the following black semibreve, counted together, could perfect and restore a complete *tempus* of three white semibreves, but he just meant there to be only the value of two white semibreves, which, joined with the preceding or rather the following white semibreve, would perfect the value of a perfect *tempus*, because (in such a position) that black breve is not blackened to convert it from perfect to imperfect, since even if it were white it would not be perfect but imperfected by the white semibreve following. Therefore blackening that breve can no longer make it imperfect but makes it *sesquialtera*. For that reason it will happen that such a black breve joined together with a following semibreve will not produce a perfect *tempus*, as Your Excellency concluded. It seems to me that in this passage you should have spoken about an exception, since what Your Excellency writes could stand thus:

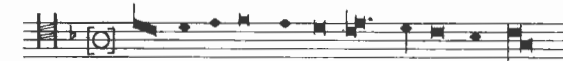


And I say nothing further since I know well that on this point you will know how to choose the true from the false.¹³²

from *Toscanello* (1529 edn), fol. e3.) Spataro retains his own spelling when quoting from other theorists.

¹³² 'Ma certamente circa tale vostra sententia asai dubito, et questo è solo perché ho trovato apresso a certi docti antiqui et moderni, come da Tintoris in uno suo mutetto molto arduo, del quale non me arecordo el nome, el quale Tintoris pone queste note ut hic: [example] overo così [example], nel quale predicto mutetto da esso Tintoris non è inteso che la breve plena et la sequente semibreve plena insieme coniuncte possano perficere et reintegrare uno tempo compecto de tre semibreve vacue, ma solo da lui son intese solamente havere el valore de due semibreve vacue, le quale con la precedente overo con la sequente semibreve vacua insieme coniuncte perficerano el valore de uno tempo perfecto, perché (in tale positione) quella breve plena non è facta plena perché sia convertita de perfecta in imperfecta, perché ancora che la fusse vacua, la non seria perfecta ma seria imperfecta de la sequente semibreve vacua. Pertanto tale pleno in tale breve dato più non potrà tendere ad imperficer, ma atenderà al sesquialterare, per la quale cosa advenirà che tale breve plena insieme con la sequente semibreve coniuncta non producerà una tempo perfecto, come da Vostra Excellentia è concluso. A me pare che Vostra Excellentia in questo passo doveva parlare con qualche exceptione. Imperò che quello che ha dicto Vostra Excellentia potrà stare ut hic, scilicet: [example], et altra declaratione non aduco perché scio bene che circa tale positione sapereti elegere el vero dal falso.' (Vatican City Vat. lat. 5318, fol. 202.)

Difficiles alios does not have the passage cited by Spataro, who was quoting from memory, but it does have several examples where black notation under perfect *tempus* does not indicate imperfection but *sesquialtera*. The superius in the *secunda pars*, with a mensuration sign $\bigcirc_1^2$ (*tempus perfectum, proportio dupla*), has five passages in coloration. Only the fourth (bars 31–2) indicates simple imperfection. The rest (bars 8–9, 14–15, 28 and 33) show imperfection, but they are all also in *sesquialtera* because of the proportional signs. It is only in the contratenor and tenor of the *secunda pars* that the two types of blackening appear under the sign $\bigcirc$. In the contratenor, two extended passages in coloration mix semibreves, breves, and longs. The second (bars 23–5) indicates imperfection; all the semibreves could just as well have been white, though blackening the first ligature prevents alteration of the second semibreve. The other passage must be transcribed in *sesquialtera* (bars 13–15); it coincides with similar notation in the tenor. The superius achieves the same *sesquialtera* through *proportio sextupla*. How is one to tell when simple imperfection is expected and when *sesquialtera*? If one examines the original notation of this last passage:



it is clear that, except for the penultimate note, all the breves would have been imperfect if the whole passage were written in white notes. The same is true of bars 14–15 and 24–5 in the tenor. This seemingly 'unnecessary' coloration hints at a different interpretation.¹³³

The marginal annotations and those written by the scribe beneath the notes of Tinctoris's *Difficiles alios* in the Perugia manuscript are of considerable help, but they offer no elucidation of the foregoing passage. That this may be due to a mere oversight on the part of the scribe is suggested by the discovery of a sheet of annotations to an unnamed composition found in the Spataro correspondence.¹³⁴ The

¹³³ Spataro's example shows the same principle as Tinctoris's usage, but it is so small that it makes little sense. A proper transcription would be ♮ ♮ ♮ | ♮ ♮ ♮ | ♮, but in practice it would have been performed ♮ ♮ ♮ | ♮ ♮ ♮ | ♮, as is often the case when the figure ♮ ♮ is found in imperfect mensuration, and indeed, it is so specified by Aaron in the same chapter. In the following chapter, 'On the black semibreve', Aaron says that the figure is to be transcribed ♮ ♮, 'although some say that such figures ought to be in *sesquialtera*. But it hardly matters one way or the other because the value of these notes fills the space of a *tempus*; therefore take whichever pleases you, since it all comes to the same end.' (*Toscanello*, fol. e3v.)

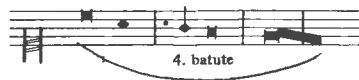
¹³⁴ Vatican City Vat. lat. 5318, fol. 180, unconnected with any letter.

handwriting is that of Lorenzo Gazio. The description matches Tinctoris's *Difficiles alios* almost precisely:

La prima parte del so[p]rano et anche la prima del contratenore se canta una semibreve a la batuta. Le pause de breve valen tre batute.

In la seconda parte del so[p]rano sono tutti li infrascripti segni over proportione huiusmodi

- $\odot_1^2$ qui andarà dui semibreve per batuta
 $\frac{3}{1}$ qui va tre semibreve per batuta
 C_1^4 una longa per batuta
 $\frac{6}{1}$ tre breve per batuta
 $\frac{1}{6}\odot$ una semibreve per batuta. Le pause son perfecte.
 $\frac{2}{1}$ doi semibreve per batuta
 $\frac{3}{1}$ tre semibreve per batuta
 $\frac{4}{3}$ quatro semibreve per batuta. Le tre breve son perfecte.
 $\frac{3}{2}$ sei semibreve per batuta
 C_3^1 doi semibreve per batuta per fin al fine. La prima longa vale sei et le pause el simile. Le altre longe sono imperfecte.



In la seconda parte del contratenore sono li infrascripti segni over proportione huiusmodi

- $\odot_1^2$ dui semibreve per batuta. Le pause sono perfecte.
 $\frac{3}{2}$ tre per batuta
 $\frac{2}{3}$ dui per batuta. Le negre son facte per imperficerle.
 C_2^1 una per batuta. La pausa vale doi semibreve.
 $\frac{3}{1}$ tre per batuta
 $\odot_2^1$ tre minime per batuta
 C_3^8 una longa a la batuta
 $\odot_4^1$ una semibreve a la batuta
 C_1^2 una breve a la batuta. Le breve valen doi semibreve. La longa valen [sic] 4. Le pause de longa valen 6 per fin in fino.

The seventh proportion listed for the superius, $\frac{3}{1}$, does not agree with the Perugia version of the motet, which has $\frac{3}{2}$. But both are correct; the Perugia version refers to the previous section and is *sesquialtera* to it. Gazio's version refers instead to the tenor, for the notation 'tre semibreve per batuta' indicates *proportio tripla* to the tenor. In the notes to the contratenor, the annotations to the sign $\odot_2^1$ specify 'tre minime per batuta', confirming as erroneous the notation in Perugia, 'una minima' (see 2.p., bar 30).

Highly interesting is the special care Gazio took to clarify the passages in coloration. The second proportion of the superius has

one of the passages in which blackened notation produces both imperfection and *sesquialtera* (see 2.p., bars 8–9). Gazio wrote out the blackened notes and added barlines and the words '4. batute' to make sure that these six black breves would fit with four semibreves in the tenor.

Gazio's notes to the contratenor contain two proportional signs more than those in the Perugia manuscript. These signs (second and third on the list) must come before and after the passage in coloration discussed above: $\frac{3}{2}$ at bar 13 and $\frac{2}{3}$ at bar 15. Thus this passage, which seemed exceptional at first, falls into the category of coloration that combines imperfection with *sesquialtera*, indicated by a proportional sign.¹³⁵ Gazio was aware of the two different types of coloration, for his notes to the sign $\frac{2}{3}$ specify that 'the black [notes] are made so as to imperfect them' – that is, the passage beginning at bar 23, which is not to be read in *sesquialtera*.

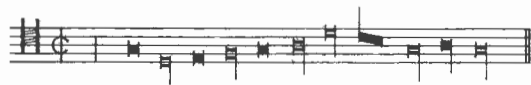
The annotations also confirm the transcription of the passage in *sesquitercia* (see 2.p., cantus, bars 31–2) with its puzzling isolated black semibreves:



He states: 'the three breves are perfect'. Indeed, only by making the breves perfect does the passage fill two bars. By resorting to blackened semibreves, the scribe avoided placing dots of perfection after all three breves. Tinctoris gives an example of this in his treatise on imperfection (Seay I, pp. 143–67) as an exception to the ninth general rule: 'The ninth general rule is if, a number [perfection] having been completed or [there are] no other preceding notes, a smaller note is found before a longer note capable of imperfection, it imperfects it.'¹³⁶ The exception states: 'And if smaller notes that otherwise, according to the foregoing rule, would imperfect another larger note are blackened, they do not imperfect it; on the contrary, they are counted together (*reducentur*) with other similarly blackened notes, as appears here':

¹³⁵ Apel, *Notation of Polyphonic Music*, does not have a special category for this; he does, however, point out a brief example of it in Leonel Power's *Anima mea* (p. 134). On p. 158 he discusses the use of $\frac{3}{2}$ in combination with *tempus perfectum*. Tinctoris, in his treatise on proportions, gives an example of coloration indicating *sesquialtera* in perfect *tempus* in chapter 6 of Book 1 (Seay IIa, p. 20).

¹³⁶ 'Nona regula generalis est quod si completo numero aut nullis praecedentibus notis aliis, nota minor sola ante maiorem ab ea imperfectibilem inveniatur, ipsam imperfectit.' (Seay I, p. 150.)



All of the white notes are perfect, and the black notes together equal two perfects (applying *proportio dupla*).¹³⁷

Gazio's annotations show that he too knew Tinctoris's motet, though he does not mention it in his letters. Perhaps his curiosity was piqued by del Lago's letter to him in which *Difficiles alios* is cited three times, and he decided to familiarise himself with the motet. If so, he probably did not ask del Lago for it; the Spataro correspondence, not surprisingly, contains no answer to del Lago's blistering attack on Gazio's ignorance in notational matters.

Although Tinctoris's *Difficiles alios* must have been about fifty years old when it was discussed by Giovanni del Lago and his correspondents, Giovanni da Legge, Giovanni Spataro, Pietro Aaron, and Lorenzo Gazio, it still held lively interest for musicians almost two generations after it was written, mainly because it was considered a practical example of Tinctoris's teachings on mensural usage and notation. All the rules applied in Tinctoris's motet could also have been sought in his writings, but none of the correspondents refers to Tinctoris's treatises in this matter. Curiously, not a single letter in the Spataro correspondence (except for the annotations by

¹³⁷ 'Et si notae minores quae aliter iuxta praemissam regulam imperficerent aliquam maiorem impletae sunt, non ipsam imperficient, immo ad alias similiter impletas reducuntur.' (*Ibid.*, p. 151.) Here is an example that clearly illustrates 'aut cum sociis' in Tinctoris's definition of *reductio* (see note 127 above). The first black note in each group is counted together with its companions to form a perfect *tempus*. This meaning of coloration is not treated in Apel. Gafurius discusses it briefly on fol. bb7^v of his *Practica musicae* (trans. Miller, p. 103; unfortunately, the failure to show coloration in the transcription of the example makes Gafurius's point hard to understand), but he applies it to groups of three blackened notes of the same value.

In his *Proportionale*, Tinctoris gives an example showing four uses of the blackened minim (Seay *ita*, pp. 20–1). One of them, *reductio*, occurs twice in the tenor, bars 2–3 and 5. In the first instance, the three blackened minims (the first three notes in Seay's transcription should have crosses over them, indicating coloration) are counted together with the two blackened semibreves. Blackening the minims prevents imperfection of the breves between which they are placed. In the second instance, two blackened minims are counted together with two blackened semibreves and therefore do not imperfect the white semibreves between which they fall. This same example is found in the Perugia manuscript (no. 24), but the superius has been rewritten to remove both the passages in *sesquialtera*; apparently Johannes Materanensis, or whoever is responsible for the editing of the example, read Tinctoris's blackened minims as semiminims instead of minims in *sesquialtera* (the superius illustrates both usages of the blackened minim); he then had to adjust the superius to fit the tenor. Consequently, the piece – contrary to the anthology's purpose – has no proportions at all.

Lorenzo Gazio) mentions the proportions in Tinctoris's *Difficiles alios*. This was the one aspect of it that was largely outdated by the 1530s. After Tinctoris's and Gafurius's treatises on proportions appeared, the more complex proportions went out of style (though they can hardly ever be found outside theoretical examples and didactic compositions, even at the time of Tinctoris and Gafurius).¹³⁸ Ornithoparchus's *Musice active micrologus* of 1517 shows the change in outlook. He gives musical illustrations of *proportio dupla*, *tripla*, *quadrupla*, *sesquialtera*, *sesquitercia*, *sesquioctava*, and *hemiolia* (= *sesquialtera* via black notation). For the rest, in the translation of John Dowland:

Though there be many other kindes of *Proportions*, which the Musicians doe observe in Harmonicall *Concent*, yet have I omitted all these for briefenesse sake, least children (for whom this Booke is made) should have their wits rather clogged than helped hereby. Therefore the learned may pardon me, because this is written for them that are hungry, not for those that have a delicate mawe.¹³⁹

Nevertheless, Ornithoparchus promised that 'all that now for brevity sake, or upon other occasions I now omit, shall be painfully set downe in a greater volume with more diligence and care'.¹⁴⁰ Like other scholarly promises, this one was never kept.

By the time of Sebald Heyden's *De arte canendi* (1537), Tinctoris's *Proportionale* had become a curiosity. Heyden mentions in his dedication that Georg Forster, 'an expert in literature and medicine as well as in music, recently made available to me the work on proportions by Iohannes Tinctoris, in which he calls this kind of music a new art' (Tinctoris, of course, was not limiting himself to proportions in his praise of the 'ars nova'); but, to Heyden's taste, 'Tinctoris, completely occupied with proportional numbers, says too little on signs

¹³⁸ As complicated a piece as Isaac's *De radice Jesse* goes no further than *proportio quadrupla* in the *genus multiplex* and *sesquialtera* in the *genus superparticulare*. On Isaac's virtuosity in using the mensural system of his time (whose proportions are mainly indicated by signs), see P. Gossett, 'The Mensural System and the "Choralis Constantinus"', *Studies in Renaissance and Baroque Music in Honor of Arthur Mendel*, ed. R. L. Marshall (Kassel and Hackensack, 1974), pp. 71–107. Another composer noted for his use of proportions is Jacob Obrecht, but they are mainly confined to augmentation and diminution of the tenor. An exception is his duo, *Regina caeli*, admirably explained by Helen Hewitt in 'A Study in Proportions', *Essays on Music in Honor of Archibald Thompson Davison* (Cambridge, Mass., 1957), pp. 69–81. Obrecht employs an unusual system of indicating three proportional numbers in the first section in triple metre, which enables the singer to relate each proportion not only to the preceding proportion but also to the tenor.

¹³⁹ Ornithoparchus, trans. J. Dowland, *A Compendium of Musical Practice*, ed. G. Reese and S. Ledbetter (New York, 1973), p. 186.

¹⁴⁰ *Ibid.*

and nothing at all on the measurement of *tactus*.¹⁴¹ Heyden deplored the many types of *tactus* in use at his time, and his treatise was written to show how the proper use of signs coupled with an invariable *tactus* could bring order into the mensural system. He gives examples (taken from the works of well-known composers) of the same proportions as does Ornithoparchus. He then remarks:

These are the proportions of diminution that are generally used in ordinary songs of the most excellent musicians. We believe that there is greater value in studying them more thoroughly than the remaining proportions. On this account it seemed proper to omit other proportions here, since they relate not so much to the practice of singing as to mathematical acumen. It is much easier to show the ratio of numbers in proportions of *multiplex superparticulare* and *multiplex superpartiens* than it is to perform their note values in singing, and I would readily believe that those who compose such examples can hardly sing themselves what they want to teach others.¹⁴²

While it is true that *Difficiles alios* includes no more than one example of the *genus multiplex superpartiens*, Tinctoris certainly did expect his students and colleagues to sing the more obscure proportions in his *Proportionale musices*, just as he expected them to decipher the notational problems of *Difficiles alios*.

CONCLUSION

With Tinctoris there emerges a new phenomenon: the theorist-composer. He is the first theorist of music who illustrates his treatises with full-size musical compositions from his own pen.¹⁴³ Behind every word of his theoretical treatises stands Tinctoris the singer and composer. He remarks in the conclusion of his great book on counterpoint: 'But in truth anyone will strive in vain to become famous in this art unless he makes a diligent habit of composing or sings counterpoint against a plainchant (*super librum canat*). For, as Cicero says in *Ad Herennium*, "in every discipline the precept of art is weak without the greatest endeavour in practice".¹⁴⁴ He studied

¹⁴¹ Sebald Heyden, *De arte canendi*, trans. C. A. Miller, *Musicological Studies and Documents* 26 (n.p., 1972), pp. 19, 18.

¹⁴² *Ibid.*, p. 90. I have changed the translation slightly at the end.

¹⁴³ Edward Roesner kindly reminded me of de Vitry's precedent. But de Vitry only refers to compositions, some of which can be established as his; Tinctoris places the music itself in his tracts and ties them to his text so intimately that the two become a unit.

¹⁴⁴ 'Sed profecto frustra nisi quisquis in ipsa arte praeclarus evadere nitetur, diligenti cum assuetudine componat aut super librum canat. Nam, ut Cicero *Ad Herennium* ait, in omni

assiduously the works of his contemporaries, imitating those whom he admired. *Difficiles alios* shows the hand of a gifted composer; it is a unique combination of music and theory. It would be equally just to call Tinctoris a composer-theorist.

Although only one of his pupils is known, Princess Beatrix, daughter of his patron, King Ferdinand I of Naples, Tinctoris's influence must have been considerable. His learning, mathematical acumen, and outstanding musicianship, and his 'many remarkable works, through which he makes himself both useful to his contemporaries and worthy of memory to posterity' earned him a place, during his lifetime (the notice was written in 1495), in the *Catalogus illustrium virorum Germaniae* by the German humanist Johannes Trithemius.¹⁴⁵ Yet as time went on, younger theorists came to the fore, discussing new ideas and raising questions and problems not envisioned by Tinctoris. The only one of his treatises that is mentioned more than a few times in the Spataro correspondence is the *Diffinitorium* – and that probably because it was printed. But if Tinctoris was not widely read and quoted in the 1520s and 1530s, if he had become an 'antico' among the 'moderni', his pedagogical motet – 'quella bella cosa' – was not forgotten. In it Tinctoris had distilled his teachings on mensuration, notation, counterpoint, and proportions. Fifty years and more after the motet was composed it continued to tease the wits of musicians – and not just theorists and composers, but also performers, such as the organist Giovanni da Legge. They used it, as Tinctoris must have intended, as a practical example of his teachings, an authority for the interpretation of the notational practice of a bygone age.

APPENDIX

Tinctoris's motet, *Difficiles alios delectat pangere cantus*, has been transcribed from the only known source, Perugia, Biblioteca Comunale Augusta, MS 1013, fols. 118^v–122. I have reduced the note values by one half except in the superius and contratenor of the *secunda pars* where they occur under a proportional sign and further reduction is required. For didactic purposes, it is useful to preserve the original appearance of the note values, as Albert

disciplina informa est artis praeceptio sine summa assiduitate exercitationis.' (Seay II, p. 156.)

¹⁴⁵ For a translation of Trithemius's biographical notice on Tinctoris, see Reese, *Music in the Renaissance*, p. 138.

Seay does (in 1:2 reduction) in his edition of Tinctoris's theoretical works, but it does not facilitate reading the parts in score. With maximum legibility of this very complicated notation in mind, I have barred all voices in the same metre, though bars 1–27 of the tenor in the *prima pars*, under $\odot$, would normally call for $\frac{9}{4}$. Similarly, in the *secunda pars*, bars 34–48 of the outer voices are transcribed in $\frac{3}{2}$ to agree with the tenor, which does not join their $\frac{2}{2}$ mensuration until bar 49. Because of the small note values and frequent syncopation, it was impractical to follow a consistent beaming in $\frac{3}{2}$ or $\frac{6}{4}$.

Coloration brackets are set beneath the notes to avoid conflict with ligatures. The letters written in the original parts, keyed to the marginal annotations, have been retained here. Each voice has its own series of letters. The marginal remarks have been transcribed, translated, and commented on above (pp. 58–86). Since the tenor is an exercise in imperfection and alteration, in those passages where some question might arise about the transcription, the original notation is shown above the notes.

The passages in the *secunda pars* under the signs $\frac{3}{1}$, $\frac{6}{1}$, $\frac{3}{2}$ and some passages in coloration could be transcribed in two ways, either as triplets in *sesquialtera* compared to the previous section in $\odot$ (i.e. 9:6) or in a $\frac{3}{4}$ metre with the proportional equivalence $\text{♩} = \text{♩}$. The latter was the only feasible solution, inasmuch as casting a passage such as bar 9 of the cantus (2.p.) into triplets would have led to unnecessary complication.

Johannes Tinctoris, *Difficiles alios delectat pangere cantus*, Perugia, Biblioteca Comunale Augusta, MS 1013, fols. 118^v–122

Cantus (fol. 118^v) $\odot = \text{♩}$

Tentoris Difficiles alios

Tenor (fol. 119)

Contra (fol. 119^v)

Difficiles quidam

15

20

¹ original: C

25

30

Musical score for page 108, measures 35-45. The score is written in three staves (treble, alto, and bass clefs) with a key signature of one flat (B-flat). Measure numbers 35, 40, and 45 are indicated at the start of their respective systems. The notation includes various note values, rests, and accidentals (sharps, flats, and naturals). A 'k' marking is present in measure 35, and a 't' marking is present in measure 40.

Musical score for page 109, measures 46-55. The score is written in three staves (treble, alto, and bass clefs) with a key signature of one flat (B-flat). Measure numbers 50 and 55 are indicated at the start of their respective systems. The notation includes various note values, rests, and accidentals. A 'm' marking is present in measure 46, and a '3' marking is present in measure 50.

² original: Fb

³ original: semibreve instead of semiminim

[Secunda pars]

Cantus (fol. 120^v)

Tenor (fol. 121)

Contra (fol. 121^v)

Dupla

Dupla

Tripla tre semibreve per battere

Quadrupla quatro semibreve per battere

Sextupla tre breve per battere

Subsextupla una semibreve per battere

Tripla tre semibreve per battere

Quadrupla quatro semibreve per battere

25

(d = d.)

(d = d.)

4

2^g $\diamond = d$

Dupla do semibreve per battere

C $\frac{1}{2}$ $\diamond = d$

Subdupla una semibreve

$\frac{3}{2}$ $\diamond = d$ (d = d.)

Sexquialtera tre semibreve per battere

$\frac{3}{1}$ $\diamond = d$ (d = d.)

Tripla tre semibreve per battere

30

$\frac{4}{3}$ $\diamond = d$ (d = d.)

Sexquiertia quattro semibreve per battere

$\frac{1}{2}$ $\diamond = d$

Subdupla tre minime

5

C $\frac{8}{3}$ $\diamond = d$ (d = d.)

Dupla superbiptiens tertias octo minime per battere

⁴ original: G

⁵ original: una minima

$\frac{3}{2}$ $\diamond = d$ (d = d.)

Sexquialtera tre breve per battere

1^g $\diamond = d$

Subquadrupla una semibreve per battere

C $\frac{3}{1}$ $\diamond = d$ (d = d.)

Subtripia una breve per battere

35

C $\frac{2}{1}$ $\diamond = d$

Dupla do semibreve per battere

40

45

50

55

Handwritten musical score for page 114, measures 45-55. The score is written in three systems, each with three staves. The first system (measures 45-47) features a treble staff with a whole note, a bass staff with a whole note, and a middle staff with a complex rhythmic pattern. The second system (measures 48-50) continues the rhythmic pattern in the middle staff, with a treble staff containing a half note and a bass staff with a whole note. The third system (measures 51-53) shows a treble staff with a half note, a bass staff with a whole note, and a middle staff with a complex rhythmic pattern. The fourth system (measures 54-55) features a treble staff with a half note, a bass staff with a whole note, and a middle staff with a complex rhythmic pattern. The score includes various musical notations such as notes, rests, and accidentals.

60

65

Handwritten musical score for page 115, measures 60-65. The score is written in three systems, each with three staves. The first system (measures 60-62) features a treble staff with a half note, a bass staff with a whole note, and a middle staff with a complex rhythmic pattern. The second system (measures 63-65) continues the rhythmic pattern in the middle staff, with a treble staff containing a half note and a bass staff with a whole note. The third system (measures 66-68) shows a treble staff with a half note, a bass staff with a whole note, and a middle staff with a complex rhythmic pattern. The fourth system (measures 69-71) features a treble staff with a half note, a bass staff with a whole note, and a middle staff with a complex rhythmic pattern. The score includes various musical notations such as notes, rests, and accidentals.

A PERSPECTIVE ON THE SOUTHERN ITALIAN SEQUENCE: THE SECOND TONARY OF THE MANUSCRIPT MONTE CASSINO 318*

The medieval sequence was one of the most distinguished artistic achievements of the Carolingian age. In creating the genre, Frankish poet-musicians moulded text and music into a new and extraordinary synthesis, and created a composition that stood proudly apart from the Gregorian Propers that surrounded it in the Mass. The new style must have spread quickly throughout the Frankish Empire, eventually reaching well beyond its borders. Pieces from the earliest centres travelled far and wide and inspired new works at every turn – faithful imitations or adaptations, as well as works in which the style was consciously modified to reflect the different aesthetics of distant realms. The legacy of surviving sources, however, does not permit the details of these early developments to be traced; even the precise dates and places where the sequence was first cultivated remain obscure. The earliest surviving sources from most regions give access to only relatively mature stages of development, which already reveal a complex web of interrelationships that has been difficult to untangle.¹

Scholars since the mid-nineteenth century have studied the early sequence eagerly and have produced an impressive range of litera-

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¹ The most successful attempt to isolate the earliest layer of sequences is R. Crocker, *The Early Medieval Sequence* (Berkeley, California, 1977). Crocker carefully studied West Frankish counterparts to Notker's sequences in an attempt to uncover the first generation of sequences.