

**Musical Exemplarity in the Notational
Treatises of Johannes Tinctoris
(c. 1435–1511)**

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Musical Exemplarity in the Notational Treatises of Johannes Tinctoris (c. 1435–1511)

Abstract

The notational treatises of Johannes Tinctoris are among the most studied music theory texts of their age. The level of meticulous detail and apparent rigour, twinned with a fairly comprehensive survey of most aspects of practical music that the fifteenth-century musician would need to know, make his treatises invaluable to understanding musical practices and pedagogy of the later part of the Middle Ages. Although not conceived as a set as such, his twelve music treatises contain some significant interdependencies, particularly those focussing on specific areas of mensuration and notation practice.

Despite much scholarly attention being directed towards his texts, particularly his *De arte contrapuncti* and *Proportionale musices*, the use of musical examples in his notational treatises has remained largely underexplored. Indeed, the broader field of musical examples in music theory treatises has been much neglected, both in modern scholarship and in critical editions, something that this thesis begins to address.

This study sets out, for the first time, a methodology for interpreting the exemplary content found in music theory treatises of the manuscript tradition, particularly those of the late fifteenth century. It synthesises Tinctoris's strategies of exemplification into three distinct models: instantiation; citation; extrapolation. In examining musical examples, it is clear that this relatively little explored resource can be used to better understand the readership(s) for music theory and the ways in which musical notation could be read in the fifteenth century. Indeed, the methodology established through this study opens up new avenues for exploration in scholarly research.

Due to the variety of musical examples found in Tinctoris's works, his treatises make an ideal test case for this methodology, showing it to be sufficiently rigorous to be applied to a variety of other texts in the future. Thus, this thesis contends that musical examples, which are often treated poorly in modern scholarly editions, can reveal great insights into the intended function of particular texts, and yield new findings to inform our study of the period.

Thesis Outline

Medieval and Renaissance music theory treatises are some of the best documents to give us an insight into historical musical practices. Their value in this regard has resulted in the production of numerous scholarly critical editions of hundreds of music theory texts, covering a range of musical styles and theoretical traditions.

However, musical examples have often fared rather poorly in such editions. The level of rigour dedicated to recording variant text readings within treatises is rarely extended to the musical examples, with some editors simply providing a transcription in modern notation. This, in itself, obscures important relationships between the text and example, significantly restricting our appreciation of these texts. For the purposes of this thesis, an example is considered to be any figure that requires a disruption in the main body of the text, though the main focus is upon those containing musical notation or notational symbols. Diagrams, such as those mapping pitch-space, are discussed within the context of general approaches towards exemplary content, though this tradition, in itself, is sufficiently rich for an extended study of its own. Therefore, when discussing diagrams, this thesis will consider the function of these diagrams within specific theoretical contexts and not their relationship to established historical traditions.

This thesis approaches music theory contextually, considering not only what the theoretical texts say but, importantly, the manner in which the theoretical teachings are presented. In adopting such an approach, it demonstrates that musical examples offer an important window into the historical past that the main text itself cannot, revealing insights into the ways in readers might engage with such texts, and the possibilities of musical reading in the medieval and Renaissance periods.

Due to the relatively limited scholarly literature available on musical exemplarity, most of which is focused upon later historical periods, Part One seeks to outline some of the key developments in reading practices outside of music, and examine analogous developments in music theory treatises, principally those on the practice of music. The historical snapshot of reading practices and changes in exemplary approach will serve as a contextual backdrop to the more detailed examinations of Tinctoris's notational treatises.

Chapter One offers a short introduction to key pieces of evidence to show an increasing shift towards literate means of reading, culminating in the widespread

adoption of silent reading, something that underpins modern scholarship today. In establishing silent reading as the principal mode of reading for scholarship, as evidenced by various accounts and technological developments in manuscripts, a deeper understanding of the subtle layers to this process can be gained.

Chapter Two places this contextual information within a historical frame of musical examples in music theory treatises c. 1000–1450. The examination of some earlier theoretical traditions is designed to offer a snapshot into a range of approaches in musical exemplarity. The texts selected for examination in this chapter were chosen based upon a number of factors, including discussion of their contents in secondary scholarship and availability of facsimile images and critical editions (via TML database). I was also keen to select texts that demonstrated a range of exemplary approaches that may show partial precedents for Tinctoris’s strategies, or that were sufficiently related to facilitate meaningful comparison.

The examination of the *musica mensurabilis* treatises emerging from thirteenth-century Paris is testament to this. In selecting a body of texts which are based upon a single theoretical model, it was possible to explore the subtle differences in exemplary approach within a fixed frame of reference. Examination of these historical snapshots established a sufficiently rich context to identify partial precedents for Tinctoris’s approaches towards musical exemplarity, though this should not be viewed as a detailed survey of the period in question.

The choice of Marchetto’s *Lucidarium* was also influenced by the ability to track progressions of exemplarity within specific musical example types. Tinctoris discusses the five-part division of the tone, something that is first found in Marchetto’s *Lucidarium*. Thus, it seems that Tinctoris must have engaged with this text, or those closely related to it, leading to possible insights into the exemplary traditions within which Tinctoris’s strategies sit, even when he offers an innovative approach.

Although the approach of Chapter Two does not permit a comprehensive survey of musical exemplarity, it offers a heuristic summary that offers a historical backdrop to Tinctoris’s exemplification strategies and the changes in the approaches of other musical authors. I hope to expand this area of research in the future, leading to the creation of a rich online resource that will offer much greater comprehensiveness.

Building upon the exposition of Chapters One and Two, the remainder of the thesis examines the exemplary approaches found in Tinctoris’s set of notational treatises. Through the detailed examination of each of Tinctoris’s examples found in

the notational treatises, three predominant models of exemplification emerged: instantiation; citation; extrapolation. The ways in which these broad models are manifested across the treatises are examined in Chapters Three, Four, and Five respectively.

Running throughout the examination of Part Two, however, is the belief that the study of musical examples offers insights into the consumption and composition of these treatises. This is demonstrated clearly throughout these chapters, as the scope of examples, and the approach taken towards the ordering of such material, reveals something of Tinctoris's mindset whilst approaching the composition of these treatises. Chapter Five, whose extended examples suggest that his strategy extends beyond theoretical comprehensiveness and into the realms of theoretical 'excess', offers particularly strong evidence of this,

Thus, Part Two approaches musical examples as integral and 'active' parts of the theoretical text. Such a view is predicated on the thesis that Tinctoris's careful construction of these examples reveals significant insights into his theoretical aims and objectives and his compositional process. Therefore, this study offers the first detailed examination of Tinctoris's treatises in this manner, establishing a new approach that has broader applicability to other historical music theory texts.

Abbreviations and Manuscript Sigla

Titles of Tinctoris's Treatises

In line with the abbreviations suggested as part of the *Early Music Theory Online* project, the titles of Tinctoris's treatises will be abbreviated (where required) as:¹

<i>Exp. manus</i>	<i>Expositio manus</i>
<i>De ton.</i>	<i>De natura et proprietate tonorum</i>
<i>De not. et paus.</i>	<i>De notis et pausis</i>
<i>De reg. val.</i>	<i>De regulari valore notarum</i>
<i>De imperf.</i>	<i>De imperfectione notarum</i>
<i>De alt.</i>	<i>De alteratione notarum</i>
<i>De punct.</i>	<i>De punctis</i>
<i>De contr.</i>	<i>De arte contrapuncti</i>
<i>Prop. mus.</i>	<i>Proportionale musices</i>

Tinctoris manuscripts

Br1	Brussels, Bibliothèque Royale, MS II 4147 Mus. (B-Br II 4147)
BU	Bologna, Biblioteca Universitaria, MS 2573 (I-Bu 2573)
G	Ghent, Universiteitsbibliotheek, MS 70 (B-Gu 70)
V	Valencia, Universitat de València, Biblioteca Històrica, MS 835 (E-VAU 835)

Other manuscripts²

B-Br II 4144	Brussels, Bibliothèque Royale, MS II 4144
CH-E 698	Einsiedeln, Kloster Einsiedeln, Musikbibliothek, MS 698
CH-SGv 296	St. Gallen, Kantonsbibliothek, Vadianische Sammlung MS 296
CZ-Ps MS D.G.IV.47	Strahov Monastery Library, MS D.G.IV.47 ('Strahov Codex')
D-Bds Mus. 1520	Berlin, Deutsche Staatsbibliothek, Mus. MS theor. 1520
D-Mbs 14523	Munich, Bayerische Staatsbibliothek, Musikabteilung, Clm. 14523
D-Mbs 24809	Munich, Bayerische Staatsbibliothek, Musikabteilung, Clm. 24809
D-Rp 98 th. 4 ^o	Regensburg, Proskesche Musikbibl., 98 th. 4o
E-Sco 5-1-43	Sevilla, Biblioteca Capítular y Colombina, MS 5-1-43 ('Colombina Chansonier')

¹ See <http://earlymusictheory.org/Tinctoris/texts/Notes/TreatiseTitles/#> (accessed 17 August 2015).

² These sigla will be used in the main body of the text. When cited frequently, these manuscripts may be further abbreviated in the main body of the text. Such abbreviations are clearly marked where applicable. Common names for these manuscripts are provided in brackets at the end of the full identification.

E-SE Ms. s. s	Segovia, Archivo Capítular de la Catedral, MS s. s. (‘Segovia Codex’)
E-VAu 389	Valencia, Universitat de València, Biblioteca Històrica, MS 389
F-EP 1	Épernay, Bibliothèque municipale, MS 1
F-MO H 196	Montpellier, Faculté de Médecine H 196
F-Pn Lat. 7211	Paris, Bibliothèque nationale de France, lat. 7211
F-Pn Lat. 7461	Paris, Bibliothèque nationale de France, lat. 7461
F-Pn Lat. 11266	Paris, Bibliothèque nationale de France, lat. 11266
F-Pn Lat. 11267	Paris, Bibliothèque nationale de France, lat. 11267
F-Pn Lat. 16663	Paris, Bibliothèque nationale de France, lat. 16663
F-Pn Rés. Vmc. 57	Paris, Bibliothèque nationale de France, Rés. Vmc. MS 57 (‘Chansonnier Nivelles de la Chaussée’)
GB-Ob Canon. Misc. 212	Oxford, Bodleian Library, Canon. Misc. MS 212
GB-Ob Bodley 842	Oxford, Bodleian Library, Bodley MS 842
GB-Lbl Add. 34200	London, British Library, Additional MS 34200
I-FI Plut. 29.48	Florence, Biblioteca Medicea Laurenziana, MS Plut. 29.48
I-La 238	Lucca, Archivio di Stato, MS 238; Lucca, Archivio Archivescovile, Biblioteca Arcivescovile Manoscritti, MS 97; Pisa, Archivio Arcivescovile, Biblioteca Maffi, cartella 11/III
I-Ma D.5 Inf.	Milan, Biblioteca Ambrosiana, D.5 inferiore
I-MC 871	Montecassino, Biblioteca dell’Abbazia, 871
I-MOe α.M.5.24	Modena, Biblioteca Estense, MS α.M.5.24 [lat. 568; IV.D.5] (‘ModA’)
I-PEc 1013	Perugia, Biblioteca Comunale Augusta, MS 1013 [M 36]
I-Sc L.V.30	Siena, Biblioteca Comunale degli Intronati, L.V.30
I-TRbc 89	Trent, Museo Provinciale d’Arte, Castello del Buonconsiglio, MS 1376 [89] (‘Trent 89’)
I-TRbc 92	Trent, Museo Provinciale d’Arte, Castello del Buonconsiglio, MS 1379 [92] (‘Trent 92’)
S-Uu C 55	Uppsala, Universiteitsbibliotek, Carolina Rediviva, MS 55
US-Be 744	Berkeley (CA), University of California, Bancroft Library, MS 744 [Phillips 4450]
US-Cn 54.1	Chicago, Newberry Library, 54.1
US-CAh Mus. 142	Cambridge (MA), Harvard University, Houghton Library MS Mus. 142
US-NHub 91	New Haven, Beinecke Library for Rare Books and Manuscripts, 91 (‘Mellon Chansonnier’)
US-R 92 1200	Rochester (NY), Sibley Music Library, 92 1200 [Admont 94]

V-CVbav Barb. Lat. 307	Rome, Biblioteca Apostolica Vaticana, Barb. Lat. 307
V-CVbav C. S. 14	Rome, Biblioteca Apostolica Vaticana, Capp. Sist. 14
V-CVbav C. S. 35	Rome, Biblioteca Apostolica Vaticana, Capp. Sist. 35
V-CVbav C. S. 41	Rome, Biblioteca Apostolica Vaticana, Capp. Sist. 41
V-CVbav Chigi C.VIII.234	Rome, Biblioteca Apostolica Vaticana, Chigi C.VIII.234 ('Chigi Codex')
V-CVbav Reg. Lat. 1146	Rome, Biblioteca Apostolica Vaticana, Reg. lat. 1146
V-CVbav S. Pietro B 80	Rome, Biblioteca Apostolica Vaticana, Archivio del Capitolo di San Pietro B 80

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PART ONE

Chapter One: Historical Reading Practices

But since, as explained above, proportions may be applied in two ways, no singer can discover whether the given signs in any voice-part are intended in the first way, that is, with reference to a previous group of notes in one and the same part, or the second, that is, with reference to the notes of a second part, except by inspired guesswork or by examining the counterpoint.¹

The notational treatises of Johannes Tinctoris are widely regarded as the most important music theory texts of their age, covering many aspects of the art comprehensively. His theoretical discussions have underpinned many examinations of counterpoint and notational practice, along with other aspects of late fifteenth-century music. Each of his texts includes a range of examples that support, demonstrate, and explain his theoretical points. It is on this feature of his texts that the present thesis will focus, highlighting a number of strategies of exemplification that can be traced throughout his output. In examining musical examples, this thesis demonstrates that such material, often treated poorly in modern editions of theoretical texts, can provide valuable insights when considered in context, significantly enhancing our current ‘hazy’ understanding of the purpose of music theory and how it was read.

The point of departure for this thesis comes from a rare moment of (somewhat frustrating) ambiguity in Tinctoris’s usually clear and precise language. The quotation that opens this chapter reveals that Tinctoris saw value in the close examination of counterpoint before a group of singers attempted the performance of a piece of polyphonic music. Although the quotation appears within the context of understanding musical proportions, the practice Tinctoris describes applies in a much broader sense to the reading of musical notation, especially in a performance or learning context. Examination of the counterpoint is encouraged seemingly out of practical concern, as Tinctoris stresses the importance of understanding the contrapuntal construction of a

¹ Johannes Tinctoris, *Prop. mus.*, I.ii.4, trans. Ronald Woodley, *The Proportionale musices of Johannes Tinctoris: a critical edition, translation and study*, D.Phil. diss. (University of Oxford, 1982), p. 316. ‘Verum quom duplex, velut premissum est, sit proportionandi modus: utrum proportiones alicuius proferendi cantus primo modo, id est per relationem ad numerum precedentem in una et eadem parte; aut secundo, id est per relationem ad notas alterius partis secundum signa edite sint, a nullo cantore nisi divinando aut contrapunctum perspicendo cognoscitur’, ed. Gianluca D’Agostino, *Johannes Tinctoris: Proportionale musices [and] Liber de arte contrapuncti* (Firenze: Edizioni del Galluzzo, 2008), p. 30. All subsequent references will be taken from this edition and translation.

piece to avoid delay and uncertainty in the singing of polyphony in public performance.²

Despite the practical motivations behind Tinctoris's instruction to 'examine the counterpoint' being aimed (presumably) at singers in a performative context and formed from his own experience of rehearsal and performance, it is somewhat ambiguous what this process of 'examination' might consist of. For example, it is not clear whether Tinctoris recommends such a process through individual silent reading or through a more extended rehearsal approach. Indeed, if taken as an implicit recognition of silent practice, his instruction suggests that it might have been possible for singers to conceptualise the polyphonic contrapuntal structure from the notation alone, an idea that raises issues relating directly to the readership(s) of his treatises. A few questions arise from this: how did these singers examine the counterpoint, and would this type of contemplation have been possible outside of a performative context? These all feed into the broader, and more significant, question: could fifteenth-century musical notation be read silently?

A starting point to answer this broader question can be found in the frontispiece to E-VAu 835 (henceforth, **V**), which offers some specific signifiers that give directions to help answer these questions, informing the investigations of both parts of this thesis. This frontispiece contains some of the text of the *Expositio manus* and depicts Tinctoris as a music scholar, sat in the rather familiar pose at a desk consulting a book (Figure 1). The book is open and the classicised landscape fused with that of a small city is clear to see in the background of the study. This image follows a typical model of the time in a number of respects, depicting a scholar at work in his study, fusing classicised architecture with Renaissance dress.³ However, this frontispiece also differs significantly in other important respects.

The book Tinctoris is reading clearly contains musical notation on both sides of the opening, hardly surprising in itself for a music theory volume. The layout of the notation is somewhat similar to the layout of polyphonic music, though the notation is not sufficiently detailed to show a performable piece of music. This notation probably

² Tinctoris, *Prop. mus.*, I.ii.5, 'Quo fit ut dilatio dubietasque canendi generentur que tamen precipue sunt euitande. Namque composite dum in medium afferuntur illico sine aliqua dubitatione pronuntiari debent', ed. D'Agostino (2008), p. 30.

³ The artistic similarities between this frontispiece and a contemporaneous Neapolitan manuscript containing the works of Aulus Gellius are striking, with both depicting a figure working at a desk dressed in a purple tunic trimmed with white fur. See E-VAu 389.

depicts a two-part piece, with one voice on each side of the opening. The appearance of musical notation is noteworthy to an extent but the present chapter will focus upon what Tinctoris appears to be doing with this notation.⁴

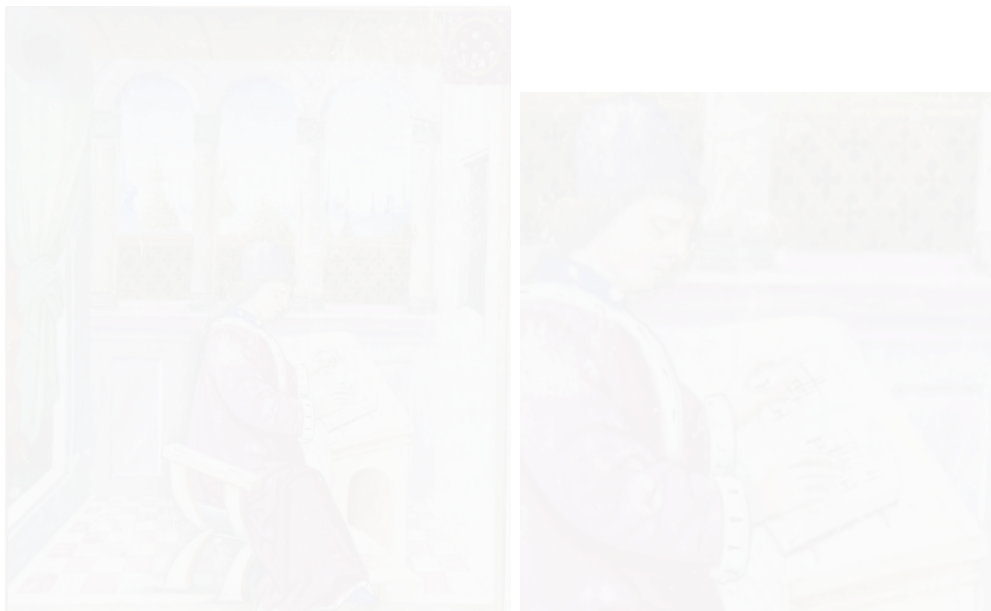


Figure 1. Frontispiece to the *Expositio manus* depicting Tinctoris reading musical notation at a desk in a classicised study (E-VAu 835, fol. 2).

Tinctoris's right hand appears to be following the musical notation on the right-hand-side of the opening, with his eyes focussed upon the end of his index finger. The image depicts Tinctoris reading musical notation in the way that many readers are depicted engaging with written texts. His mouth is closed and his eyes are directed downwards towards the notation, signifying that the notation is being read from the page silently rather than being sung aloud. Indeed, the absence of instruments or other singers in this image would have made an aural realisation of this polyphonic texture impossible in any other way. Thus, it seems safe to assume that Tinctoris is reading the musical notation for this voice part silently.

Further examination of the image reveals that Tinctoris's left hand may also be active in the silent reading process, possibly functioning in the realisation of this polyphonic piece. In addition to holding the book open, Tinctoris's left hand seems to be focused upon a single point in the notation. If one imagines that the musical notation

⁴ Musical notation appears in numerous frontispieces to printed volumes, with writers such as Gaforus engaging with musical notation, often through musical performance or through teaching.

on both sides of the opening represents a polyphonic piece, rather than two separate monophonic passages, then it is possible, perhaps even likely, that Tinctoris is aligning both parts internally from the notation alone. His pointing finger draws the focal point of the eye towards a specific point in the notation, strengthening the visual focus and suggesting that something is being examined closely with the eyes. The focal points of both hands might therefore suggest that he is engaged in a complex process of silent alignment, moving back and forth between the parts. Thus, the image of Tinctoris may provide a useful insight into the way in which a reader might have engaged with musical notation silently. The iconographical significance of this should not be underestimated, and similar techniques could be applied to other texts. Although the silent reader of text is not all that unusual, to the best of my knowledge there are no other contemporary sources depicting a musical reader in this fashion, making this a particularly noteworthy instance. As will be shown in Part Two, one can perhaps extrapolate a likely mode of engagement with some of Tinctoris's musical examples from this image.

The depiction of Tinctoris as a reader rather than a writer is also significant. In depicting Tinctoris in this way, the frontispiece might have indicated the expected manner of engagement with such texts, perhaps even suggesting the kind of musician, or musical reader, one could hope to become after engaging with his treatises. Indeed, this image may depict the examination of counterpoint that Tinctoris advocates in the quotation that opens this chapter, suggesting that the process could be completed silently and that it was used by those engaged with the study of music. As will be outlined over the course of this thesis, there is clear evidence that Tinctoris envisaged that at least some of his readers would have engaged with his notational content in a silent manner, using visual comprehension as a primary mode of reading. Therefore, this image may provide a visual cue as to how readers were expected to engage with certain aspects of his treatises.

Although a great deal of scholarly work has been conducted on the contents of theoretical texts across many intellectual disciplines from the medieval and Renaissance periods, few scholars have considered in detail how these texts might have actually been read and understood by their readership. In terms of investigations specific to Renaissance music theory, Cristle Collins Judd's *Reading Renaissance Music Theory: Hearing with the Eyes*, which focuses upon sixteenth-century printed

music theory, is the only text to explore these issues in detail.⁵ The section that follows summarises some of the key historical, intellectual, and technological developments that bear witness to the changing reading practices across the Middle Ages, leading towards the image of Tinctoris as the silent musical reader in Figure 1. Its aim is to provide a wide-ranging, though not exhaustive, historical snapshot to establish a context in which historical treatises investigated in Chapter Two can be placed, forming a backdrop for the investigations of Tinctoris's notational treatises in Part Two. In contextualising Tinctoris's texts in this way, our current understanding of his texts, and the ways in which they were read, can be enhanced significantly.

Historical Reading Practices: Reading in the Ancient World

Over the course of the last thousand years, silent reading has become increasingly important in the accumulation of knowledge and in practices of scholarship, with modern readers using modes of silent reading as the default method of extracting knowledge from texts. However, its origins are sketchy, and its gradual introduction into techniques of scholarship and day-to-day reading are only beginning to be explored by scholars. An appreciation as to how readers, construed broadly throughout this thesis as those engaging with any kind of text, studied and acquired knowledge provides an essential sense of perspective on the developmental stages of the reading practice depicted in Figure 1. Modes of reading affect not only our understanding of how a reader might approach a written text, but also the comprehension of non-text materials and their interactions with, and application to, wider intellectual culture, an essential part of the didactic and pedagogical aims recognised both implicitly and explicitly across Tinctoris's theoretical oeuvre.

The modern conception of reading, whether oral or silent, can be traced back at least as far as the Ancient Greeks. Despite the distinct lack of contemporary accounts, or graphical depictions, of reading, the Greek language leaves behind footprints that suggest that reading processes were widespread, and that significant portions of society were literate to some degree. The Greek language possesses more than twelve verbs to

⁵ Cristle Collins Judd, *Reading Renaissance Music Theory: Hearing with the Eyes* (Cambridge: Cambridge University Press, 2000).

signify various reading processes, a point that is attested from around 500 BC.⁶ Each has a subtly different meaning, representing and acknowledging the coexistence of different practices of reading, even in the ancient world. Of these verbs, *nemein*, which literally translates as ‘to distribute’, can be interpreted as referring to a passage being read, or, perhaps more likely, read aloud.⁷

From a textual perspective, the most significant texts indicative of reading practices are Homer’s *Odyssey* and *Iliad*, texts that had a foundational use in education. These were among only a few texts to be written down for widespread transmission during this period, allowing a range of readers and readership groups to engage with their contents.⁸ Such groups would have included young readers engaging with these texts, perhaps under the guidance of a tutor, using imitation as a way of learning to read and write, along with general readers of epic poetry.⁹

Walter Burkhardt has argued, with some historical support, that Homer’s status as one of the first ‘literary poets’ led to his works occupying this foundational position. In his *Panegyricus*, Isocrates, a fourth-century BC orator famous for the development of a rigorous education system for children and teenagers, states that ‘it was “our forebears” who honoured Homer’s art (*techne*) “in the education of the young”’.¹⁰ Such a statement confirms the tradition of Homeric study in pedagogical systems, perhaps due to its status as a ‘literary’ text.

Indeed, the gradual shift from orality to literacy throughout ancient times is further evidenced by the high status that Suetonius places upon Julius Caesar’s ability to read.¹¹ In Roman times, manuscripts were written (or ‘notated’) in syllabic chains, sometimes broken into text blocks but not subdivided into intellectual units of meaning

⁶ Jesper Svenbro, ‘Archaic and Classical Greece: The Invention of Silent Reading’, *A History of Reading in the West*, ed. Guglielmo Cavallo & Roger Chartier, trans. Lydia G. Cochrane (Amherst: University of Massachusetts Press, 1999), p. 38.

⁷ See Svenbro, ‘The Invention of Silent Reading’, pp. 39–44 ; and Pierre Chantraine, ‘Les verbes grecs signifiant “lire”’, *Mélanges Henri Grégoire*, Annuaire de l’Institut de Philologie et d’Histoire Orientales et Slaves, 10 (4 vols, Brussels: Secretariat des Éditions de l’Institut, 1950), vol. 2, pp. 115–126.

⁸ These texts were of a tradition that would almost certainly have been memorised by an *oidos*, forging links between the literate and oral traditions of epic poetry. This is one example of the deep connection between, and coexistence of, these two traditions in the ancient world.

⁹ See Eric A. Havelock, *The Muse Learns to Write: Reflections on Orality and Literacy from Antiquity to the Present* (New Haven & London: Yale University Press, 1986). Havelock’s argument is summarised in John Halverson, ‘Havelock on Greek Orality and Literacy’, *Journal of the History of Ideas*, 53/1 (1992), pp. 150–152. Isocrates provides further support for this view in his *Panegyricus*.

¹⁰ Halverson, ‘Havelock on Greek Orality and Literacy’, p. 156.

¹¹ See Suetonius, *The Lives of the Twelve Caesars*, I:lxvii, ed. and trans. in *Lives of the Caesars, Volume I: Julius. Augustus. Tiberius. Gaius. Caligula*. Translated by J. C. Rolfe. Introduction by K. R. Bradley, Loeb Classical Library 31 (Cambridge, MA: Harvard University Press, 1914), pp. 146–147.

i.e. words.¹² This copying technique, widespread in surviving sources, reflects the likely purpose of ‘writing’ at this time as a means of preserving public lectures and orations to be re-read aloud rather than studied silently.¹³ Examples of this type show a kind of intersection between oral and literate cultures, with literate objects serving a predominantly oral function, often preserving a record of an oral event, something normally attributed to musical notation.

Early Silent Reading and Privacy

The shift from oral to literate reading cultures may have been driven, in part, by the demands of scholarship. For modern scholars, silent reading is the default approach, allowing vast quantities of information to be interpreted and stored quickly and efficiently. This ‘storage’ of interpreted information often takes place through literate means, such as notes or annotations to key points, rather than whole passages verbatim. However, this was not always the case in historical oral and literate cultures, as evidenced by technological aspects of manuscripts, the layout of libraries, and iconographical signifiers throughout the period.¹⁴

One of the most often cited (and arguably misinterpreted) pieces of evidence for early silent reading is found in Augustine’s *Confessions*, where he remarks on the peculiar reading habits of his teacher, Ambrose:

But when he was reading, his eyes would scan over the pages and his heart would scrutinize their meaning—yet his voice and tongue remained silent. Often when we were present (no one was ever forbidden to enter, nor was it his custom to have those approaching him announced) we saw him reading like that, silently, but never aloud.¹⁵

Augustine’s discussion of this instance is suggestive that Ambrose’s practice was noteworthy and unusual: there is clearly some peculiarity in Ambrose’s reading method. Although Augustine attributes this silent reading practice to Ambrose wanting

¹² Paul Saenger, *Space Between Words: The Origins of Silent Reading* (Stanford: Stanford University Press, 1997), pp. 6–9.

¹³ The case for personal correspondence is more complex, and goes beyond the scope of this thesis.

¹⁴ In describing the ancient world as having a ‘predominantly oral culture’, I do not mean to suggest that the culture was illiterate. Literacy played an important part in these ancient societies, and coexisted (not necessarily on an equal footing) with oral culture.

¹⁵ St. Augustine, *Confessions*, VI.iii, ed. and trans. Carolyn J. B. Hammond, *Volume I: Books 1-8*. Loeb Classical Library 26 (Cambridge, MA: Harvard University Press, 2014), pp. 242–243. It is important to note that this instance almost certainly refers to a different kind of silent reading, which was carried out to increase the personal connection to a text rather than increase reading speed.

to save his voice, the difficulties posed by old Latin scripts and manuscripts where word division, a feature that we take for granted in modern writing, was lacking, make this instance noteworthy. Ambrose's silence can probably be attributed to a wish to keep his prayers private and is distinct, at least in emphasis, from our modern conception of silent reading. Nevertheless, it is significant that we have some early evidence of a form of silent reading.

This evidence comes, in part, from a study of technical aspects of early manuscripts. Early Latin writing, as evidenced by numerous surviving manuscripts, consisted of long rows of undivided capital letters, or their cursive equivalents, capturing a kind of 'phonetic' transcription of something to be read aloud.¹⁶ The human eye would have struggled to retain its focus on the indistinct chain of letters to extract intelligible meaning. Thus, it seems that a kind of 'vocalisation' was required to elucidate the meaning. Such a realisation would have allowed greater amounts of information to be retained from the script where meaning was hidden by the unbroken phonetic chains, which prioritised syllables and letters over units of meaning.

Some writers have linked 'primitive' phonetic syllabic chains with musical notation. Paul Saenger notes that 'a written text was essentially a transcription which, like modern musical notation, became an intelligible message only when it was performed orally to others or to oneself.'¹⁷ This view, as evidenced by Figure 1 and demonstrated by this thesis, is a gross oversimplification of the ways in which musical notation can be read, failing to acknowledge that musical notation can be realised internally through silent contemplation.¹⁸ In Part Two of this thesis, I contend that musical notation, even for polyphonic music notated consecutively across pages, could be read silently.

Technological advances in manuscripts

Going hand-in-hand with the move towards more literate cultures of reading are developments in the production of manuscripts. Perhaps the most significant of these is the gradual application of word division and other methods of sectional marking in manuscript sources, helping to articulate visually the structure of a text. Word division,

¹⁶ Paul Saenger, 'Silent Reading: Its Impact on Late Medieval Script and Society', *Viator*, 13 (1982), p. 370.

¹⁷ Saenger, 'Silent Reading', p. 371.

¹⁸ These issues are explored more fully in Part Two, especially in Chapters Three and Five.

in particular, helps to divide the content of a manuscript into more manageable units of intellectual significance, attributing meaning to these both when read silently and aloud, paving the way for silent comprehension of texts.

The earliest uses of word division are found in chapter titles and important sectional markers within large intellectual texts, something seen in many early copies of Isidore of Seville's *Etymologies*, a seventh-century encyclopaedic text that continued to be studied and copied into the sixteenth century.¹⁹ In articulating the intellectual structure clearly, a reader would have been able to locate specific text sections quickly, without having to find these within unbroken chains of syllables, an ideal process for a reference text such as this.

Such a technological development in the copying of manuscripts might also demonstrate a shift in the way that readers gathered information from texts. This is indicative of important changes in scholarly approach in the Carolingian period.²⁰ Instead of learning a text by rote, the use of such sectional divisions facilitated something approaching the kind of referential silent reading that dominates modern practices of scholarship.²¹ This aided the drawing together of different viewpoints on particular subjects, forging intertextual and intratextual links.

In manuscripts that were produced in Britain and Ireland there is further evidence for the widespread use of word division, and, by implication, the possibility of silent reading, as early as the eighth century, much earlier than on the continent.²² In addition to increasing the intelligibility of the text, word division also aided visual retention of textual material by allowing the reader's eyes to fix on several smaller points. Thus, word division created a distinct visual identity for each word in a language, something that had been much less clear when the syllables forming the word were presented in an unbroken phonetic chain. Saenger directly correlates the introduction of word division in manuscripts from the British Isles with the imposition of silence in the

¹⁹ Isidore discusses music in a number of places in the *Etymologies*, though as a speculative subject.

²⁰ Great changes took place in musical practices during this time. This is explored in some detail in Chapter 2. On some musical aspects of this trend, see James Grier, 'Adémar de Chabannes, Carolingian Musical Practices, and Nota Romana', *Journal of the American Musicological Society*, 56/1 (2003), pp. 43–98.

²¹ This is not to say that rote learning did not have a place in educational systems across the Middle Ages. Rote learning coexisted with other educational systems.

²² Saenger, 'Silent Reading', p. 378. Italy lagged behind in the adoption of word division, with some thirteenth-century manuscripts still not having adopted the practice. There are also some instances where German manuscripts, often from centres founded by the Irish, use word division. See, Armando Petrucci, 'Reading in the Middle Ages', *Writers and Readers in Medieval Italy*, ed. and trans. Charles M. Radding (New Haven: Yale University Press, 1995), p. 135.

scriptorium, raising questions about scribal reading and broader reading practices amongst the educated public.²³

The likely introduction of silence into the scriptorium, though indicative of manuscript production techniques, would seem to suggest strongly that silent reading practices were at work in other spheres. The move towards scribal silence was likely to have been triggered by developments in reading practices, which raises interesting questions about the links between reading and learning at this early stage. I shall return to this point later in this chapter.

Images of the Reader and Writer

As word division was increasingly implemented in scribal practice, images of readers and writers also begin to change. Up to this point, images of the silent reader are rare, with most images showing group or performative reading. By the tenth century, however, authors are often shown to write directly into a book, rather than through dictation to an amanuensis.²⁴ Silent writing, and, by implication, reading, is exemplified in iconographical terms as early as the ninth century.²⁵ The ‘Ebbo Gospels’ are among the most famous of surviving early tenth-century manuscripts and include a number of depictions of the gospel authors composing through the process of writing.



Figure 2. St Matthew, depicted writing his gospel in the Ebbo Gospels (F-EP 1, fol. 18v).

²³ Saenger, ‘Silent Reading’, p. 378.

²⁴ The term ‘amanuensis’ also encompasses a wide range of other scribal tasks.

²⁵ Although the Gospels were not newly composed texts, the depiction of the author was, to some extent, realistic.

Figure 2 depicts St Matthew in the process of writing directly onto a writing surface, probably a parchment of some sort. The similarities in pose to Figure 1 are immediately obvious, though it is significant that this figure is depicted as writer rather than reader. In his left hand, he is holding an ink-horn to allow the quill, which is held in his right hand, to flow smoothly over the page.²⁶ The fact that the process of composition is being shown as silent here might also suggest that the consumption of composed material could have been silent. It forges a direct connection between the writer and his text, perhaps intensifying the reading experience. Significantly, the illustrator neglects to show any text on the writing surface, but it is safe to assume that the image is intended to depict St Matthew in the process of writing his gospel, acting as an iconographical marker of the content to follow, and its importance.

Images similar to Figure 2 are found in abundance in manuscripts from this period, and may provide some evidence to suggest that the notion of authors writing directly into an authorial exemplar, probably in silence, was widely accepted by this stage. This process allowed an author to take direct control of his text, and serves further to increase the likelihood that silent reading was now widespread: texts did not necessarily need to be ‘heard’ to be ‘read’. However, this is not to suggest that silent reading had replaced oral reading exclusively, rather that the two types of reading coexisted.

Such a coexistence of these two spheres is expressed technically by Armando Petrucci, who suggests a third category that occupies a kind of ‘middle ground’: silent reading, ‘murmured’ reading, and reading aloud.²⁷ Their respective uses were governed not only by intellectual aptitude or skill, but also by social situation and textual requirements: different texts and social scenarios required different modes of reading.

Silent reading and writing was ideal for prayer and devotion as it increased the privacy and spiritual intensity of the reading experience. However, there is some evidence that silent reading did not dominate educational or scholarly environments. Indeed, silent reading (in its recognisable modern form) was probably not particularly fostered in such environments until the twelfth and thirteenth centuries through changes

²⁶ In addition to the four evangelists, St Jerome is frequently presented in this pose. It became increasingly common as the Middle Ages progressed to present writers of all status by means of iconography of this type.

²⁷ Cited in Jacqueline Hamesse, ‘The Scholastic Model of Reading’, *A History of Reading in the West*, ed. Guglielmo Cavallo & Roger Chartier, trans. Lydia G. Cochrane (Amherst: University of Massachusetts Press, 1999), p. 104. See Armando Petrucci, ‘Lire au moyen âge’, *Mélanges de l’École française de Rome: Moyen âge–temps modernes*, 96 (1984), pp. 603–616.

in scholastic practices. Quiet, ‘murmured’ reading was preferable for scholarship, forming a central part of the ‘rumination’ process.²⁸

Oral reading was popular in courtly environments, particularly in the context of the performance of poetry and historical epics. Kings, well into early modern times, had books read to them rather than reading direct from the books themselves, as a form of entertainment.²⁹ To read in a group almost always required oral reading and to read privately was the time to either consume the text silently or quietly, emphasising the importance of social setting and the type of material in determining the appropriate mode of reading.

To address the coexistence of oral and silent reading cultures, some language scholars have suggested that it would be better to place texts on a spectrum of silent/oral reading to understand their associated methods of engagement.³⁰ This allows the practice of reading to be contextualised without polarising two different modes of reading.³¹ Such a scale also permits multiple modes of reading associated with a certain style of texts, or particular aspects in its makeup, an idea that is applied to some of Tinctoris’s texts later in this thesis.

Reading in Education

Given that the focus of this thesis is on the notational treatises of Johannes Tinctoris, a musical theorist and teacher responsible for some of the most didactically useful fifteenth-century musical texts, it is important to consider the wider relationship between reading and education throughout the Middle Ages. From this, a richer context can be set for the discussions of music theory throughout the Middle Ages in Chapter Two. Although early medieval reading practices are difficult to recover accurately, it is clear that reading came to be considered a foundational part of educational curricula.

The *Didascalicon* of Hugh of St Victor (c. 1096–1141) is one of the first witnesses to the increasing importance attached to reading in education, explicitly

²⁸ Hamesse, ‘Scholastic Model’, p. 104.

²⁹ In this instance, ‘read’ is taken to mean a performative type of reading. King Charles VIII of France (r. 1484–98) had a Reader, Guillaume Tardif, a noted humanist.

³⁰ This is advocated by Walter Ong, *Orality and Literacy* (London: Routledge, 1988). For a general survey of Ong’s work see Elspeth Jajdelska, ‘Introduction’, *Silent Reading and the Birth of the Narrator* (Toronto: University of Toronto Press, 2007), p. 6.

³¹ The impact of written script upon oral language is an important factor to consider when examining the wider impact of silent reading. See Ong, *Orality and Literacy*, pp. 16–77.

outlining texts to be read in particular subjects. Hugh's overarching aim was to define the particular aspects of knowledge that should be important to a man in the pursuit of attaining his divine destiny.³² This text states explicitly on numerous occasions the fundamental role that reading played in the twelfth-century school curriculum, seemingly facilitated by the increased availability of texts, changes in manuscript production techniques, and widening of academic fields.³³ This twelfth-century alliance between reading and education is a legacy that remains with society today, with the two being almost inextricably linked, particularly in the Western world. It would seem that the change in reading habits went hand-in-hand with a shift in scholastic aims: 'Knowledge became the prime goal of reading. The reader's first priority was no longer wisdom, as it had been with the monks and their spiritual readings.'³⁴

Book Three of the *Didascalicon* is symptomatic of these changes, being almost entirely devoted to the process of selecting and consuming texts for the acquisition of knowledge, with some subjects including lists of specific key texts recommended by the author. This model of study epitomises the shift in scholastic approach in the twelfth century, and is demonstrative of the importance of reading in knowledge acquisition. Readers were now required to consume texts and make links between them, rather than ruminating upon a largely unchanging body of literature on particular subjects.

This change in readers' goals had a direct impact on the stages of cultural reading, comprehension and understanding. In monastic culture, the three stages towards wisdom were long established as reading, meditation, and contemplation. The new wave of scholasticism, burgeoning at the universities, replaced the older idea of 'wisdom' with three new approaches to texts: explication and commentary (*legere*); discussion (*disputare*); and consideration of spiritual dimensions of texts (*praedicare*).³⁵ Malcolm Parkes notes:

³² Jerome Taylor, 'Introduction', *The Didascalicon of Hugh of St Victor* (New York: Columbia University Press, 1961), p. 3. On Hugh's work and its Boethian musical foundations see Andrew Hughes and Randall Rosenfeld, 'Hugh of St Victor', *Oxford Music Online. Grove Music Online* (Oxford University Press), online, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/13515> (accessed 24 October 2014).

³³ Hamesse, 'Scholastic Model', p. 103. This is not to say that scholars until this point did not attach importance to reading. Hugh simply stated the importance of reading books to acquire knowledge, and was the first to make the importance of reading as part of education so explicit.

³⁴ Hamesse, 'Scholastic Model', p. 110.

³⁵ Hamesse, 'Scholastic Model', p. 112. This tripartite model is closely related to Dominican spirituality.

During the course of the twelfth century ... There were new kinds of books ... and new kinds of readers. The monastic *lectio* was a spiritual exercise which involved steady reading to oneself, interspersed by prayer, and pausing for rumination on the text as a basis for *meditatio*. The scholastic *lectio* was a process of study which involved more ratiocinative scrutiny of the text and consultation for reference purposes.³⁶

Thus, discussion grew to be an ever more important part of scholarship, laying the foundations of the modern-day tier of secondary literature which critically reviews the primary sources and canon of scholarship that come before it, perhaps showing prototypical forms of Tinctoris's critique of contemporary practices.

By the twelfth century, silent reading had become established as a much faster way of absorbing text-based information than oral reading. Though this does not preclude the legitimacy of oral reading, it seems that scholastic practices had shifted to the new silent technique. One of the likely reasons such a shift was the requirement of university scholars, particularly those studying canon law, to keep up to date with the ever-expanding corpus of works.³⁷ Students were advised to read foundational theological texts alongside specific *glossae* that elaborated upon the original content, helping to build a set of intertextual relationships between works.³⁸ Copies of theological texts were often annotated with references to corresponding passages and insights in associated *glossae*, aiding the reader in maintaining an awareness of contemporary thinking. In effect, cross-references between *glossae* and theological texts meant that the scholar was able to deal with the primary text and evaluate multiple secondary interpretations, emphasising the importance of personal interpretation and critique – scholastic techniques clearly evidenced in Tinctoris's treatises as discussed in Part Two.

This rather idealised notion of scholastic reading is, however, probably somewhat distant from the practical reality. Many students, and to some extent teachers, would undoubtedly have relied upon extracts, summaries, and *glossae* to consume the

³⁶ Malcolm M. Parkes, 'Influence of the Concepts of *Ordinatio* and *Compilatio* in the Development of the Book', *Medieval Learning and Literature: Essays Presented to R. W. Hunt*, ed. J. J. G. Alexander and M. T. Gibson (Oxford: Oxford University Press, 1976), p. 115. See also an update to Parkes's classic essay in, Richard H. Rouse and Mary A. Rouse, 'Ordinatio and compilatio revisited', *Ad Litteram: Authoritative Texts and Their Medieval Readers*, ed. Mark D. Jordan and Kent Emery Jr. (Notre Dame: University of Notre Dame Press, 1992), pp. 113–134.

³⁷ Saenger, 'Silent Reading', p. 385.

³⁸ The Anonymous of St Emmeram's *De musica mensurata* uses a similar approach. See Chapter Two.

knowledge contained within the original text.³⁹ In some cases, readers probably did not make a direct connection with the texts that they were commenting upon or discussing. The ever-growing body of literature almost inevitably led to summaries and extracts being used as ‘shortcuts’, allowing readers to keep pace.⁴⁰ For the present discussion, however, the fact that this reading most likely took place in silence is particularly important, given the clear pedagogical underpinning and likely silent readership of Tintoris’s texts.

Given that silent reading had probably become the primary reading mode for education and scholarship, it is unsurprising that evidence to confirm these shifts can be found in some changes in the layout of the libraries at educational institutions, used for a range of subjects. Universities are particularly important in this regard as further evidence can be found in the types of material on offer and the methods through which access was granted.

In the thirteenth century, a number of Oxford and Cambridge colleges moved their libraries into central halls and furnished these areas with desks and benches where readers sat next to each other rather than in individual ‘cells’. Such a change in the layout of a library was clearly symptomatic of changes in contemporary reading culture. Readers could study next to each other and, through silent reading, without disturbing other nearby scholars.⁴¹ Similar layout alterations, along with changes in reference and lending practices, came into place in the Sorbonne in 1290, suggesting that this apparent shift was more than isolated moves at two British institutions. Indeed, these changes would seem to point towards the type of reading depicted in Figure 1.

Given the expensive nature of larger manuscripts, extended reference works were often chained to central desks so that they were restricted to library use only. In chaining such works, these books became the starting point for many scholarly pursuits and were available to all with access to the library: they underpinned scholarship.⁴² Evidence found in the records of Merton College Library, Oxford, further supports this.⁴³

³⁹ Hamesse, ‘Scholastic Model’, p. 113.

⁴⁰ This is not to suggest that readers did not want to engage with primary texts. Instead, it would seem that practical ‘shortcuts’ were often required.

⁴¹ Saenger, *Space Between Words*, p. 263

⁴² The chaining of reference works could be seen as being analogous with the use of a search engine or library catalogue as a starting point.

⁴³ Merton College (Oxford) was the first college to adopt such a policy in 1289. On this development, see H. W. Garrod, ‘The Library Regulations of a Medieval College’, *The Library*, 4th series, 8/3 (1927), pp. 312–335.

In Merton's thirteenth-century library, only chained books were stored in the library itself. Other items, presumably more specialised texts, were stored in treasury chests, described in contemporary documents as *cistae librorum* [chests of books]. The fact that other books were stored outside of the main library would suggest that a reader was expected to consult the chained text first, before moving on to the specialised texts referred to in this central or primary text if required.⁴⁴ Perhaps something of this can be seen in Tinctoris's referential citations in *De arte contrapuncti*, referring the reader to more specific examples found in more specialised musical manuscripts. The 'new' library gradually introduced shelved books throughout the fourteenth century, moving towards a layout that remains with us today.

Silence was imposed in libraries laid out in the new fashion, not only because it may have achieved unequivocal status as the norm for scholarly reading practice, but because even those who mumbled as they read would create sufficient noise to disturb those working around them.⁴⁵ When all readers had murmured to themselves, the low-level sound acted as a neurological 'wall', blocking out other sounds, but when silence was imposed, even the smallest murmur could disturb.⁴⁶ As a result, the reading experience became more personal and led to multiple interpretations of key texts, one of the foundations of modern scholarship.⁴⁷ It also encouraged detailed reading of specific passages and a process of critical interpretation and evaluation, traits that are easily seen in most of the music treatises discussed in Chapter Two.

Conclusion

Over the course of this chapter a number of developments in the gradual shift from predominantly oral understanding to visual comprehension as a type of reading have been outlined. It is clear that many of the cultures of reading in the ancient world were predominantly oral, though this is not to say that silent reading did not occur. Where it did, silent reading almost certainly operated in a different manner to that which dominates modern reading culture in the West. Instead, a reader might have read

⁴⁴ See Garrod, 'Library Regulations'. His paper also refers to other important work on this area, especially P. S. Allen, 'Early Documents Connected with the Library of Merton College', *The Library*, 4th series, 4/4 (1924) pp. 249–276.

⁴⁵ This point is noted in Humbertus de Romanis, *Opera de vita regulari*, ed. Joachim Joseph Berthier (Marietti, 1956), vol. 1, p. 421.

⁴⁶ Readers sometimes read in individual 'cells', further preventing the travel of sound.

⁴⁷ This silence imposed allowed readers to retain the privacy of their thoughts, which some feared would lead to the spread of heretic thoughts. See Saenger, *Space Between Words*, pp. 264–265.

prayers, spiritual texts, private letters or other private documents very quietly, or silently, to prevent others from hearing their contents, rather than using this technique to increase reading speed or improve information retention.

In the early medieval period, significant developments were made in manuscript layout, with the widespread application of word division acting as a catalyst for the expansion of silent reading in a range of intellectual and cultural arenas. Each word acquired its own visual identity, making its meaning accessible through visual comprehension alone, i.e. without translating the words into sound. The sheer quantity of texts that the medieval scholar was required to read as part of their university education demanded that specific sections of works could be accessed quickly in a referential manner.

To the medieval scholar, silent reading offered the perfect solution, and was greatly facilitated by the aforementioned developments in manuscript layout and echoed by changes in library design. Indeed, the new type of critical scholarship that aimed to interpret, comment upon, and draw links between texts required a kind of referential reading that an oral practice was not best suited to.

As Chapter Two will show, the gradual shift towards visual comprehension rather than oral (and aural) realisation is also mirrored in the developments in musical notation and the change of focus in music theory. The earliest forms of musical notation, such as neumes, acted as a kind of *aide-memoire* to a reader, where a melody did not have a clearly distinguished visual identity that staff notation helped to create. However, the widespread use of staff notation did not wholly overcome the challenges that a reader could have faced in trying to silently comprehend musical notation, particularly in the context of a music theory treatise. Chapter Two examines the ways in which examples in music theory treatises show evidence of early versions of Tinctoris's exemplification strategies, and what such might suggest about the readership of such texts.

Chapter Two: Musical Exemplarity in Music Theory, 1000–1450

Music theory, like many other intellectual disciplines, went through radical changes during the course of the Middle Ages. Often, the stages of such changes went hand-in-hand with developments in practical music-making and music as an intellectual discipline: theory advanced in response to, and sometimes influenced, practice. Discussions of ‘music’, in its most abstract sense as an extension of mathematics and astronomy, appear in many ancient texts. From the sixth century onwards, Boethius’s *De institutione musica* followed a similar direction and became the central music theory text for any scholar wishing to study music as part of the *quadrivium* of the liberal arts.¹ This treatise does not discuss the kinds of issues that would relate to the practical musician, such as notational practice or modal categories, and differs significantly in intellectual compass, genre and purpose from Tinctoris’s much later notational texts.² Instead, Boethius’s text was intended for the music scholar, or *musicus*, to consult as part of a broader programme of liberal arts study.³

This chapter will examine some key texts from the Middle Ages to outline significant developments and changes in the approaches towards musical exemplification in music-theoretical contexts. The case studies chosen for this chapter have been selected primarily for their relative importance among contemporaneous texts. Other factors influencing the selection of these texts include the availability of manuscript facsimiles (both printed and digital) and published editions.⁴ This chapter does not intend to offer an exhaustive account of historical exemplification practices.⁵ Instead, its function is to set the exemplification strategies in Tinctoris’s treatises within a richer historical context, considering the predominant trends of exemplification in key music theory treatises.

¹ On music as a subject of the *quadrivium*, see Joseph Dyer, ‘The Place of *Musica* in Medieval Classifications of Knowledge’, *The Journal of Musicology*, 24/1 (2007), pp. 3–71.

² Lawrence Gushee discusses the different genres of music theory in the medieval period in his seminal article on the topic: Lawrence Gushee, ‘Questions of Genre in Medieval Treatises on Music’, *Gattungen der Music in Einzeldarstellungen: Gedenkschrift Leo Schrade*, ed. Wulf Arlt (Bern: Francke Verlag, 1973), pp. 365–433.

³ The classifications of *musicus* and *cantor* are often characterised as mutually exclusive, a view that misrepresents the degree of coexistence that probably existed.

⁴ Many of the editions are taken from the TML database. Although not exhaustive, this database is probably the largest repository of music theory texts from this period and includes almost all key texts. See <http://www.chmtl.indiana.edu/tml/start.html> (accessed 8 June 2015).

⁵ I hope to pursue this further in future research.

Pre-1100 Musical Exemplarity: Speculative Traditions

Given that the main focus of this thesis is the use of musical examples in Tinctoris's notational treatises, that is, texts focused on practical music, the discussion that follows is necessarily brief. However, to omit texts of the *musica speculativa* tradition entirely would misrepresent the origins of practical musical exemplarity.

The widespread circulation and relative comprehensiveness of Boethius's *De institutione musica* made his text undoubtedly the most influential music theory text in the Middle Ages.⁶ Calvin Bower notes that there are 137 surviving manuscript copies or fragments of *De institutione musica*,⁷ a monumental total when compared to the survival of most of Tinctoris's treatises in three main sources, with a few treatises also appearing in a handful of others. This emphasises the continuing importance of Boethius's treatise in liberal arts programmes, and his enduring presence in manuscript culture.

For Boethius, and many of his contemporaries, music was an extension of mathematics, providing a practical way to understand mathematical proportions. Despite this different focus, the patterns of exemplification are interesting, given the copying of his text over many centuries, and are in some ways similar to Tinctoris's diagrammatic examples.

Indeed, such was the interest in Boethius's *De institutione musica* that it underpinned the so-called *musica speculativa* tradition. However, the continued interest in his text led to a rather peculiar transmission process, almost without parallel in the field of music theory. Despite the main text remaining, somewhat remarkably, fairly consistent, the choice of examples, diagrams, and figures used varied significantly across the centuries.⁸ These diagrams, although subject to radical revision, were clearly conceived as an integral part of the text, often being introduced with '*descriptio*' [delineation/marketing out] or a similar phrase that indicates the required presence of exemplary content. At a time when producing manuscripts was very expensive and

⁶ All references to the text and translations are taken from Anicius Manlius Severinus Boethius, *De institutione musica*, ed. and trans. Calvin Bower, *Fundamentals of Music* (New Haven & London: Yale University Press, 1989).

⁷ Bower, 'Introduction', *Fundamentals of music*, p. xxxviii.

⁸ This topic has been discussed at length in Elizabeth A. Mellon, *Inscribing Sound: Medieval Remakings of Boethius's De institutione musica*, PhD diss. (University of Pennsylvania, 2011). My discussion draws heavily upon her work. Such variation was not unique to Boethius's text, and was fairly standard for texts transmitted over a long period of time. Nevertheless, the range of exemplary approaches is, in itself, significant.

page space had to be used very efficiently, the inclusion of so many diagrams, often lavishly constructed, is testament to the important status that examples held within the theoretical whole (see Figure 3 and Figure 4 below).



Figure 3. Boethius, *De institutione musica*. Diagram showing harmonic proportional relationships (CH-SGv 296, fol. 93v).⁹

⁹ This twelfth-century manuscript also includes Boethius's *De arithmetica*.

meaning, making the memorisation of their contents more challenging. However, for a contemporary reader, the form of these kinds of diagrams, even accounting for possible errors introduced as scribes copied such complex figures, may have facilitated conceptual memorisation in a way that is only beginning to be explored in modern scholarship. These diagrams are indicative of styles recommended in early treatises on the memorial *artes*, where conceptualisation through a mental diagram or image was considered an important part of the memorisation process.¹¹

In using techniques associated with memorisation, such as curved lines to link parts of the diagram as advocated in the *Ad Herennium* tradition, Boethius's scribes show an explicit recognition of a mode of reading – and by implication, a hypothetical reader – for which these diagrams cater. A reader could have engaged with the text to understand the context of the diagram, and then internalised the diagram to retain a kind of conceptual map.¹² The use of curves in the twelfth-century manuscript (Figure 3) would have further aided the type of memorisation prevalent at this time, perhaps giving an insight into the ways in which readers might have engaged with this content.

In short, Boethius's treatise is indicative of a wider interest in music as a mathematical and speculative construct that persisted throughout the medieval period. Despite the differences in subject matter, there are some clear similarities to the examples used in practical music theory texts before 1100 and, indeed, throughout the Middle Ages, as discussions in this thesis will show. Examples are used to support (and further) understanding of text-based theoretical discussions, showing evidence of revision as usage changed.

Pre-1100 Musical Exemplarity: Practical Texts

Although music theory from before 1100 was predominantly focused on *musica speculativa*, a small yet significant number of treatises from this period survive. These represent some important steps towards the types of musical exemplarity that is seen in Tinctoris's theoretical texts.¹³

¹¹ See Mary Carruthers, *The Book of Memory: A Study of Memory in Medieval Culture*, 2nd edition (New York: Cambridge University Press, 2008). Her study encompasses a range of historical evidence from across the medieval period, marking the twelfth century as a turning point in the practical study of the memorial art, seemingly somewhat analogous with the growth of practical music theory in the thirteenth century.

¹² Analogies with the use of the Guidonian Hand in later theory are immediately apparent here.

¹³ On practical discussions in pre-1100 music theory treatises, see Charles M. Atkinson, *The Critical Nexus: Tone-System, Mode, and Notation in Early Medieval Music* (New York: Oxford University Press, 2009).

It is almost inconceivable to discuss this without examining the so-called *Musica enchiriadis* (henceforth *ME*). This treatise dates from the later part of the ninth century, and is among the first treatises to address practical music (of sorts), using notated musical examples, albeit on proto-staff notation, to support points.¹⁴ It would seem that the anonymous author composed *ME* to address some of the issues that singers involved in everyday religious worship faced when performing music. This practical focus is fused with elements of the *musica speculativa* tradition, with copious allusions to Censorinus's *De die natali* (AD 238), Augustine's *De musica* (AD 387–9), and Boethius's *De institutione musica*.¹⁵

Without delving too deeply into the anonymous author's fusion of practical theory with ancient wisdom, it is sufficient to say that *ME* aims to provide a practical discussion of music theory that is supported and justified by references and allusions to key authorities on music theory. Such attempted reconciliation is neatly demonstrated in its eighth chapter:

Demonstrandum nunc, quomodo haec quattuor ptingorum vis modos, quos abusive tonos dicimus, moderetur, et fiat dispositio talis: Sternantur in ordine veluti quaedam cordae e sonorum notis singulis e regione positae procedentes. Sint autem cordae vocum vice, quas eae significant notae. Inter quas chordas exprimat neuma quaelibet, ut puta huiusmodi:

It must now be demonstrated how the *vis* [nature] of these four *phthongi* [tones] governs the modes, which we wrongly call tones. Let there be such a disposition: Let them [the *soni* or *phthongi*] be arrayed in order as if they were strings, proceeding in a straight line after the individual *notae* [symbols] of the *soni* [tones] have been written. Let these strings be in the place of the sounds that these *notae* [symbols] signify. Let some melody be copied among these.¹⁶

In this passage (Figure 5), the anonymous author demonstrates how the four *soni* (the notes that make up each tetrachord) relate to the production of the eight tones [*toni*]. The notation that follows this passage of text presents an Alleluia melody that is mapped on to 'strings' [*cordae*] corresponding to the notes to be sung.¹⁷ On the left-hand side of Figure 5 the daseian symbols can be seen to represent the tones and

¹⁴ See Raymond Erickson, *Musica enchiriadis and Scolica enchiriadis*, Music Theory Translation Series (New Haven: Yale University Press, 1995).

¹⁵ Erickson, 'Introduction', *Musica enchiriadis*, p. xx

¹⁶ Translation adapted from Atkinson, *Critical Nexus*, p. 124.

¹⁷ This is referred to as 'cithara notation' in Giovanni Varelli, 'Two Newly Discovered Tenth-Century Organa', *Early Music History*, 32 (2013), pp. 277–315.

semitones outlined in a table at the beginning of the treatise. In effect, the syllables making up ‘Alleluia’ are allied to tones and semitones that a singer might sing using ancient methods, somewhat reconciling the practical and more abstract spheres.



Figure 5. *Musica enchiridiadis*, Ch. 8. Example showing notated ‘Alleluia’ (F-Pn Lat. 7211, fol. 3, top; GB-Ob Canon. Misc. 212, fol. 4v, bottom).

The author demonstrates the theoretical point here using a practically-minded notational approach to enhance the clarity of the point. Although this type of notation cannot be realised fully by modern musicians, the links to ancient Greek music theory, as filtered through Boethius, would have been better understood by a contemporary audience. Its graphical properties serve to help visualise the theoretical point in ways that a text-based explanation could not.

Despite showing that musical examples of one sort or another were, in some cases, used for practical topics in early theory, this treatise is seemingly so well-known because of its unusualness, both in content and style. Hucbald of St. Amand (c. 850–930), an author who, for many years, was thought to have written *ME*, also used daseian notation extensively. This misattribution, maintained for a significant part of the

Hucbald's choice of example relates closely to the text in more than topic alone, describing each instance where a semitone occurs meticulously, using syllables as a reference point. Given that a single interval position is used for each syllable, the reader would have been able to follow the diagram horizontally, using both the theoretical and sung texts to aid the identification of the semitones in the notation.

There are many examples of this type in Hucbald's treatise, and thus it seems that the reconciliation of the spheres of music that underpins the approach of *ME* has a partial precedent in Hucbald's work. Figure 6 shows that technical discussions of practical music did take place, albeit using different exemplification strategies. In both Figure 5 and Figure 6, the technical discussion is aided by examples accompanying the specific points, with many of these examples using proto-staff notation showing relational pitch without indicating rhythm.²¹ However, this type of notation, although appearing in a few treatises, seemingly had only limited impact, as the study of *musica speculativa* as part of a liberal arts programme took priority for all but a small number of readers actively engaged in the education of young singers or regular musical performance.

Guido d'Arezzo, Hermannus Contractus, and trends in exemplarity c. 1000–1230

Guido d'Arezzo is perhaps second only to Boethius in fame for a music theorist of the Middle Ages, best known for the supposed 'invention' of a method of signing syllables using the hand as a conceptual map of musical space. This conceptual map became known as the Guidonian Hand, an image that pervaded music theory throughout the Middle Ages, supposedly forming the foundation of music pedagogy for centuries.²² He is also often credited with the development of staff-based notation, first adding a red line (representative of C) to provide a greater sense of pitch specificity to plainchant neumes. This, in theory at least, would allow a singer to read a new piece of music at sight, showing pitch relationships with greater precision.

Based upon the surviving sources, Guido's *Micrologus* seemingly achieved a similar status to Boethius's *De institutione musica*, being the most widely transmitted

²¹ Rhythmic information might have been implied through performance practice, though this is now lost to us.

²² It seems likely that he was one of its earliest practitioners, if not its 'inventor'. For ease of use, I will retain the term Guidonian Hand.

music treatise other than Boethius's throughout the medieval period. It survives in at least 70 manuscript sources from the eleventh to the fifteenth century, a number significantly larger than the next most often transmitted treatise. Although circulated widely, the *Micrologus* does not include theoretical discussions of either of the proposals that have secured Guido's relative fame.²³ Instead, the *Micrologus* serves as a compendium of musical elements, probably for singers at an early stage in their training.

Despite the fact that Guido does not make use of staff-based notation in this treatise, musical examples are still included using letter notation. In the fifth chapter, Guido discusses the *diapason* and the rationale for using the first seven letter names, a topic that would probably have been of little interest to the speculative musician.²⁴ In establishing the repeating pattern of the letters A–G, Guido suggests that many singers can sing the same antiphon according to a natural concord (the diapason) and includes an example to demonstrate this (Figure 7), justifying the system practically.



Figure 7. Guido d'Arezzo, *Micrologus*, Ch. 5. Example of letter notation (F-Pn Lat. 7461, fol. 3, detail).²⁵

²³ Staff notation is mentioned in the prologue as a method by which singers can learn new chants very quickly. Guido, *Micrologus*, Prologus, ed. Jos. Smits van Waesberghe, *Corpus scriptorum de musica*, vol. 4 (Rome: American Institute of Musicology, 1955), p. 85, 'Tandem affuit divina gratia, et quidam eorum imitatione chordae ex nostrarum notarum usu exercitati ante unius mensis spatium invisos et inauditos cantus ita primo intuitu indubitanter cantabant, ut maximum plurimis spectaculum praeberetur'. [Presently Divine Grace favored me, and some of them, trained by imitating the [steps of the mono]chord, with the practice of our notation, were within the space of a month singing so securely at first sight chants they had not seen or heard, that it was the greatest wonder to many people.] trans. Warren Babb, *Hucbald, Guido, and John on Music* (New Haven and London: Yale University Press, 1978), p. 58.

²⁴ See Guidonis Aretini, *Micrologus*, v, ed. Jos. Smits van Waesberghe, pp. 107–113.

²⁵ F-Pn Lat. 7461 includes all four of the surviving music theory treatises attributed to Guido, presenting the *Micrologus* first.

Guido's example (Figure 7) includes three voice parts, all of which present the same melody (G, A, A, G, A, A, B, C, B, A, G, A, A) in different octaves, moving in parallel motion and therefore vertical alignment, with the text 'Summi regis archangele Michael.' This demonstrates the practical application of Guido's point concisely. The decision to use letter notation, whilst intriguing, might be accounted for as part of an exemplification strategy.

By using letters, Guido did not require the reader to have any prior knowledge of musical notation systems to access its meaning. Instead, only knowledge of letter-based note labels is required, something that would have been introduced in the very early stages of musical training, probably before notation. This approach may show an implicit awareness of the likely readership groups for this treatise. Such an example would have given a 'helping hand' towards understanding if required, and serves to demonstrate the practical application of a theoretical statement, though its simplicity does not preclude engagement by more advanced readers.

In presenting this theoretical point and musical example together, Guido shows that, even in the early Middle Ages, there were frameworks to exemplify musical points. Indeed, the exemplification strategy at work here, although significantly different in appearance, holds some similarities to that of *ME*. The use of letter notation, however, neither situates the theoretical point within wider musical practice, nor prepares the reader fully for engagement with more established forms of musical notation. The terms 'graves', 'acutae', and 'superacutae' would have partially addressed the lack of octave specificity, but solutions that were both more elegant and technically specific were available. It does, however, retain a sharp sense of pedagogical focus, with little contextual 'clutter'.

Guido's surviving treatises were almost entirely dedicated to practical musical issues and probably aimed at students of singing. However, another key theorist of the period, Hermannus Contractus (1013–1054), took a markedly different approach to the two different spheres of music theory.²⁶ Instead of producing broad-ranging compendia as Guido did, he focused his only surviving music theory treatise, simply titled *Musica*,

²⁶ On the biography of Hermannus Contractus see Lawrence Gushee, 'Hermannus Contractus', *Grove Music Online. Oxford Music Online* (Oxford University Press) <http://www.oxfordmusiconline.com/subscriber/article/grove/music/12864> (accessed 29 October 2014).

upon specific theoretical issues of more scholarly interest, namely, the relationship between the species of the fourth, fifth and octave and the ecclesiastical modes.²⁷

Much like the author of *ME*, his treatise attempts to reconcile discussions of speculative theory with contemporary musical practice, though a greater emphasis is placed on the former. In doing this, Hermannus made use of diagrams that relate more closely to those of the Boethian tradition, quite different from those of the *Micrologus*. Indeed, Hermannus's ambition in this project is reflected in one of the intended readership groups that he acknowledges in his text as 'future "composers" of new chant melodies, singers trying to orient themselves through the repertory, and general readers ... who simply wish to deepen their knowledge of the laws of music'.²⁸ Despite making such a statement, the treatise does not include any musical notation or pieces of performable music. Diagrams, however, are found in abundance, as Figure 8 demonstrates.



Figure 8. Hermannus Contractus, *Musica*. Lambda diagrams showing the mirrored tone-and-semitone patterns of the species of 4th and 5th in ascent and descent.²⁹ US-R 92 1200, p. 117 (top) and p. 120 (bottom).

²⁷ This subject might have attracted some practical interest, but the bias of the text is clear.

²⁸ Stefano Mengozzi, *The Renaissance Reform of Medieval Music: Guido of Arezzo between Myth and History* (Cambridge: Cambridge University Press, 2010), p. 39.

²⁹ The difference in ascent and descent fascinated music theorists until the sixteenth century. Hermannus uses the diagram to point out that it goes tone-tone-semitone and in descent it goes semitone-tone-tone, even though it is same species of diatessaron or diapente.

The respective layouts of these examples are closely linked, working through four groupings (*proti, deuteri, triti, tetrardi*) systematically. Indeed, the use of the same simple shape strengthens the visual links between these examples. These visual similarities facilitate the memorisation of the contents: each diagram acts as a conceptual map of the theoretical material to be recalled from the memorial archive.

Thus, it is clear that theorists recognised the value of diagrams in aiding the memorisation of theoretical points, even from relatively early in the Middle Ages from a music-historical viewpoint. Although examples are accorded important status in the theoretical whole, the strategies of exemplification differ greatly from those focused upon notational issues, the direct predecessors of Tinctoris's texts. Hermannus's aim here was to synthesise his lengthy text-based discussion into a memorable graphical form. Guido's aim was to provide some form of practical demonstration of his points. For both theorists, it would seem that the diagram served as a kind of conceptual map of the theoretical point, offering a summarisation of the the precept under discussion, showing a partial precedent for one of the variants of the instantiation model of exemplification to be discussed in Chapter Three. This practice of exemplification, however, was to change radically for practically focused music theory in the thirteenth century.

The seeds of musical exemplarity: the Parisian *musica mensurabilis* complex

In Chapter One, a number of the most important developments in scholarly activity and reading practice from the thirteenth century, including the growth of universities and the effects that these had on educational and scholarly approaches, were outlined. These radical changes in scholarship also impacted upon the study of music theory, which saw significant developments to both its text and non-text content.

The thirteenth-century rediscovery of Aristotelian thought and its increasing importance in university teaching, alongside other changing scholarship patterns, saw a shift from more speculative discussions of music to practically focussed, often notationally based, musical discussions. Practical music was increasingly becoming a legitimate subject of study, examining practical phenomena associated with contemporary musical performance, a shift that was perhaps most noticeable at (and best documented from) the University of Paris.

Paris was seemingly a hotbed for the development of polyphonic music in the thirteenth century, with the Cathedral of Notre Dame, and its associated musical institutions, forming a central part of this burgeoning musical culture. The interest in music extended beyond the well-documented performative activities.³⁰ From the extant sources, it would appear that Paris was also a centre for intellectual thought on music. Given that the University of Paris was perhaps the largest university at this time, and had a flourishing Arts faculty, it seems likely that the musical circles associated with the Cathedral of Notre Dame might also have been associated with the university, if not the Arts faculty itself. There is no formal evidence to suggest that practical music formed part of the official university curriculum, though it seems likely that it formed at least a part of informal extra-curricular activities.³¹

Polyphonic music had become an increasingly important part of the musical repertory of the Cathedral of Notre Dame, and thus notational developments were to be found in abundance to cope with this level of musical invention. This view is supported by the survival of polyphonic sources from the period, and the biographical details of major composers who had been active there, such as Leoninus and Perotinus.³² With the expansion of measured polyphony came the need for a more codified form of notation that could indicate both pitch and rhythm with reduced ambiguity, aiding performance directly from the notation itself.³³ As composers began to experiment with the musical possibilities offered by more rhythmically precise notation, individual voice parts increasingly needed to be correctly aligned to avoid dissonant clashes, and thus notational reforms were required to address this.³⁴ It is perhaps because of this interest that writings of this sort on measurable music appear to have been in vogue in

³⁰ Anonymous IV leaves us information on the most important composers active at Notre Dame that complements the surviving practical sources.

³¹ On the place of music in the arts faculty, and possible musical activities there, see Gilles Rico, *Music in the Arts Faculty of Paris in the Early Thirteenth and Early Fourteenth Centuries*, D.Phil diss. (University of Oxford, 2005). Much like today, students and staff were probably involved in many musical activities outside the formal curriculum. See also, Joseph Dyer, 'Speculative *musica* and the medieval university of Paris', *Music & Letters*, 90/2 (2009), pp. 177–204.

³² For a brief survey of these developments see Thomas Forrest Kelly, *Capturing Music: The Story of Notation* (New York: W. W. Norton & Co, 2015), pp. 79–112.

³³ This is not to say that music notation before this time lacked rhythmic indication, rather that it was not notated explicitly. On the rhythm of earlier genres such as organum purum see Charles M. Atkinson, 'Franco of Cologne on the Rhythm of Organum Purum', *Early Music History* 9 (1990), pp. 1–26; Jeremy Yudkin, 'The Rhythm of Organum Purum', *The Journal of Musicology*, 2/4 (1983), pp. 355–376; Edward Roesner, 'The Performance of Parisian Organum', *Early Music*, 7/2 (1979), pp. 174–189.

³⁴ Polyphony of a certain complexity can be coordinated through the rules of consonance, but as polyphony became more intricate, greater rhythmic precision was required.

Paris from c.1250 to the end of the century (and beyond), particularly amongst those presumed to have affiliation with the university.³⁵

The five best-known treatises on *musica mensurabilis* which are believed to have some links to the University of Paris were written by Johannes de Garlandia, Magister Lambertus, Anonymous of St. Emmeram, Franco of Cologne, and Anonymous IV.³⁶ Some of these treatises survive in multiple manuscript versions, transmitted over many centuries, providing a useful set of sources from which to cross-reference changing approaches towards musical exemplarity within a fixed frame of reference.³⁷ The obvious links in content, structure and terminology place these treatises in a complex of sorts. Johannes de Garlandia's text seems to have been the earliest, given that it acts as a model for aspects of all the other texts in the complex.³⁸ Indeed, some aspects of Lambertus's discussions of *musica plana* can be linked explicitly to recensions of Garlandia's texts.³⁹ This complex of treatises was to have a profound effect upon the nature of music theory for the next three centuries. These authors adopted new critical methods and exemplification strategies, often 'borrowed' from other disciplines undergoing their own radical changes, which allowed practical music to be discussed as a legitimate scholarly subject.

Although there is significant overlap in the subject-matter of these treatises, each theorist adopts a distinctive exemplification strategy through which incremental developments can be traced. Despite the variation in approach, the repertory used for the musical examples in these treatises can be pinned down to 46 manuscripts in total, with at least one work from each of these manuscripts appearing in some form in one of the treatises.⁴⁰ The close relationship between these texts, and the approximate sequential progression that the surviving evidence suggests, makes these ideal case studies to show the evolution of exemplification strategies in interrelated texts.

³⁵ This likely association is highlighted by shared terminology, treatise structures, and notational approaches.

³⁶ Editions and translations of these treatises will be indicated as their respective texts.

³⁷ I plan to explore these changes more fully in my future research.

³⁸ Yudkin foregrounds this in his introduction to the Anonymous of St. Emmeram's *De Musica mensurata*, pp. 1–29. See Jeremy Yudkin, 'The Influence of Aristotle on French University Music Texts', *Music Theory and Its Sources: Antiquity and the Middle Ages* (Indiana: University of Notre Dame Press, 1990), pp. 173–189.

³⁹ Christian Meyer, 'Introduction', *The 'Ars musica' Attributed to Magister Lambertus/Aristoteles*, ed. Christian Meyer and trans. Karen Desmond (Farnham: Ashgate, 2015), pp. xviii–xix.

⁴⁰ See Jeremy Yudkin and Todd Scott, 'Ut Hic: Announcing a Study of Musical Examples in Five Thirteenth-Century Music Treatises', *Essays on Medieval Music in Honor of David G. Hughes*, ed. Graeme M. Boone (Cambridge, MA: Harvard University Press, 1995), pp. 471–485, esp. Table 1 (pp. 473–474).

Johannes de Garlandia (fl c.1270–1320): *De mensurabili musica*

De mensurabili musica [On measurable music] attributed to Johannes de Garlandia is one of the most important monuments in thirteenth-century music theory. The treatise inspired a generation of music theorists who built their treatises upon ‘Garlandian’ foundations, deviating little from the original structure whilst making substantial theoretical advances and responding to practical trends in the genre.

Before examining the contents of the treatise, it is important to draw attention to the issues associated with Garlandia’s authorship of *De mensurabili musica*. Long thought to be the author of two musical treatises, *De mensurabili musica* and *Plana musica*, recent scholarship now suggests that Garlandia may not have been the original author of these two important treatises. Instead, he may have revised and updated the treatises of another, hitherto unidentified, theorist.⁴¹ Other interpretations suggest that Garlandia may have been a Parisian bookseller responsible for the production of some aspects of Jerome of Moravia’s theoretical collection,⁴² *Tractatus de musica*, which includes many of the texts discussed here. For the present discussion, the attribution to Garlandia will be retained in lieu of a better alternative.

De mensurabili musica survives in two sources, with the earliest dating from c. 1260. The treatise is best known for its pioneering treatment of rhythmic modes, something attested to by the not unproblematic narrative of Anonymous IV, whose theoretical structure is highly irregular.⁴³ The anonymous theorist, and the lack of sources to contradict him, suggests that rhythmic teaching had been predominantly oral until this point, governed by the rules of consonance more than specific durations indicated explicitly in notation. *De mensurabili musica* is seemingly the first treatise to codify the system of rhythmic modes.

Garlandia’s treatise, in its two different guises, contains 63 notated musical examples, more than was common in earlier practical music theory treatises.⁴⁴ Notated musical examples were also a key part of all of the other texts that formed the *musica*

⁴¹ For a summary of the competing identifications of the author of these treatises, and a controversial attribution, see Pamela Whitcomb, ‘Teachers, booksellers and taxes: reinvestigating the life and activities of Johannes de Garlandia’, *Plainsong and Medieval Music*, 8/1 (1999), pp. 1–13.

⁴² On the identification of Jerome of Moravia as Jerome of Moray, a Scottish friar, see Michel Huglo, ‘La *Musica* du Fr. Prêcheur Jérôme de Moray’, *La théorie de la musique antique et médiévale* (Aldershot: Ashgate Publishing, 2005), pp. 113–116.

⁴³ On the peculiarities of Anonymous IV’s narrative, see Heinrich van der Werf, ‘Anonymous IV as Chronieler’, *Musicology Australia* 15 (1992), pp. 3–25.

⁴⁴ Few treatises in the TML database or Coussemaker’s *Scriptores* from before Garlandia’s include so many notated examples.

mensurabilis complex, aside from the treatise of Anonymous IV, showing a shift towards practically focused music theory.⁴⁵ Lambertus's treatise contains 104 musical examples, with 70 of those being related directly to *musica mensurabilis*. Franco of Cologne's *Ars cantus mensurabilis* contains 83 examples, and the lengthy *De musica mensurata* of the Anonymous of St. Emmeram includes 150 examples.⁴⁶

One of the most common strategies of exemplification found in Garlandia's treatise is to take a short extract from an existing melody to demonstrate a particular rhythmic point. However, these are not deployed to critique contemporary notational practice as Tinctoris does later.⁴⁷ Instead, they provide short examples of good theoretical practice, as shown in Figure 9.



Figure 9. Johannes de Garlandia, *De musica mensurabili*. Example showing the first rhythmic mode, using a melody with the text 'Latus' (F-Pn Lat. 16663, fol. 67r).

The example includes a notated passage, texted with 'Latus', to demonstrate the characteristics of the first rhythmic mode, as discussed in the text. The example serves simply to illustrate Garlandia's description of the first mode, providing an instance of the theoretical point of the text that a reader could apply to other scenarios. The inclusion of a citation helps to frame the theoretical point in a realistic musical context, using musical practice as a means to support his point in a way that the traditional *auctoritates* for music could not.

As will be outlined below, this approach lays the foundations for the

⁴⁵ The treatise of Anonymous IV includes musical examples as though dictated to a scribe who noted them down verbatim in text form. See Rob C. Wegman, 'The World According to Anonymous IV', https://www.academia.edu/2339629/The_World_According_to_Anonymous_IV (accessed 21 October 2014), print publication forthcoming.

⁴⁶ Gilles Rico, *Music in the Arts Faculty of Paris*, p. 273. The Anonymous of St. Emmeram's *De musica mensurata* only survives in D-Mbs 14523, fols. 134r–159r, whereas Franco's treatise survives complete in six, significantly varied, sources.

⁴⁷ Tinctoris's approach is explored more fully in Chapter Four.

development of thirteenth-century Parisian music theory, with all these writers sharing similar, though not identical, approaches towards theoretical exposition and exemplification.⁴⁸ Through the examination of three case studies from this complex of treatises on *musica mensurabilis*, the manner in which the theorists approached musical examples, and how this developed over the course of the century, will be surveyed.

Magister Lambertus: *Ars musica* (c. 1270)

The *Ars musica* attributed to Magister Lambertus is a pair of treatises that have, until very recently, attracted less scholarly attention than the texts of Franco of Cologne or Anonymous IV.⁴⁹ This apparent neglect possibly stems from its ‘transitional’ status, occupying (approximately) the period between Johannes de Garlandia and Franco of Cologne. However, its transitional nature makes Lambertus’s *Ars musica* invaluable in understanding developments in the strategies of exemplification for notational theory.

Although most famous for his advocacy of nine rhythmic modes rather than the conventional six, Lambertus makes use of many examples to demonstrate a range of theoretical points, and has interesting views on a number of topics.⁵⁰ The *Ars musica* is divided into two treatises: the first on *musica plana* followed by a brief tonary; the second on *musica mensurabilis*. The prologue to the first includes lengthy quotations and explorations of Boethius’s *De institutione musica*, I.xxxiii, ‘Quid sit musicus’, and has an *accessus* that is somewhat modelled on discussions of music from the treatise on philosophy by Dominicus Gundissalinus.⁵¹ This shows that the treatise was founded upon scholarly models, even if the subject-matter extended beyond the normal discussions of the time.

The *Ars musica* survives complete in two manuscripts, and fragmentarily in a further three.⁵² F-Pn Lat. 11266 (henceforth **P**) preserves both treatises forming the *Ars musica* and is probably the oldest source. I-Sc L.V.30 also preserves the complete *Ars*

⁴⁸ Similarities in layout can also be ascribed to contemporary scribal practices, though the links to the text cannot be explained fully by this.

⁴⁹ On Magister Lambertus, his *Ars musica*, and its relationship to other contemporary theory, see Christian Meyer (trans. Barbara Haagh-Huglo), ‘Introduction’, *The ‘Ars musica’ attributed to Magister Lambertus/Aristoteles* (Farnham: Ashgate, 2015), pp. ix–xxxvi. See also Gordon A. Anderson, ‘Magister Lambertus and Nine Rhythmic Modes’, *Acta Musicologica*, 45 (1973), pp. 57–73.

⁵⁰ See Christian Meyer (trans. Barbara Haagh-Huglo), ‘Introduction’, pp. xvii–xxxvi.

⁵¹ Christian Meyer, ‘Introduction’, pp. xvii.

⁵² The four (mostly) complete sources are F-Pn Lat. 11266, fols. 1–35r; F-Pn Lat. 6755 (2); I-Sc L.V.30, fols. 14r–32r; Erfurt, Ampl. 8° 94 – a source which may have originated from Paris. Closely related texts are also found in D-Bds Mus. 1520 and D-Mbs 24809. It seems that the treatise enjoyed some circulation beyond the Parisian university milieu.

musica, though somewhat anachronistically, given the distinctly *Ars nova* focus of the other theoretical texts in this volume. These complete sources include some 100 short examples of varied genre, a figure nearly double that of the total examples found in either rendering of Garlandia's treatise on measurable music.

The present study of Lambertus's exemplification strategies will focus on **P**, a presentation manuscript consisting of the *Ars musica* (fols. 1–35) and a collection of polyphonic music that was added at a later stage of the thirteenth century.⁵³ Given that this source is the oldest complete version of Lambertus's *Ars musica*, it is our closest witness to contemporaneous trends in examples.

Lambertus's treatises are among the earliest texts to make widespread use of what I describe in this thesis as 'instantiation' in relation to practical music. Instantiation, in its basic configuration, occurs where one or more parts of the theoretical text are described precisely in the theoretical text and presented identically, often in the same order, in the accompanying example.⁵⁴ This exemplification model is one of three explored in this thesis: instantiation, citation, extrapolation.⁵⁵ When such 'instances' are presented in a larger context, this type of exemplification operates in its 'projection' variant, where content from the theoretical text is mapped into a more realistic context that does not detract from the theoretical focus. This can include the addition of pitch content to rhythmical points, and the combination of various instances into a single example.⁵⁶ Under this exemplification variant, specific content is framed in a small musical context, contextualising the content without obscuring the theoretically important points.

Lambertus deploys this exemplification strategy in his discussion of melodic modes. The text, which explicitly describes the opening of an antiphon using solmisation syllables and further signals its inclusion with 'verbi gratia', is reproduced in the accompanying example (Figure 10). He writes:

Talis est differentia quarta primi modi quod quandocunque antiphona incipit in F et a <i>fa</i>	So follows the fourth <i>differentia</i> of the first mode: whenever an antiphon begins on F and
--	---

⁵³ See Mark Everist, 'Music and Theory in Late Thirteenth-Century Paris: The Manuscript Paris, Bibliothèque Nationale, Fonds. Lat, 11266', *Royal Musical Association Research Chronicle*, 17 (1981), pp. 52-64. The notation of the musical collection at the end of the manuscript betrays a Franconian influence, placing its copying date after Franco's treatise.

⁵⁴ On the 'instantiation' model of exemplification, see Chapter Three.

⁵⁵ These three models are explored more fully throughout Part Two. For detailed definitions of all three models, see the introduction to the second part of this thesis.

⁵⁶ This is explored more fully in Chapters Three and Four.

descendat in *ut* vel in *re*, verbi gratia: | descends from *fa* to *ut* or to *re*, for example:⁵⁷

The text describes the melody as descending from F *fa* to C *ut* or descending from F *fa* to D *re*, melodic movements that are matched in musical notation between the opening two notes of the first two sections, marked out with vertical strokes (see Figure 10). This is demonstrative of a decision to include a specific example, selected for its theoretical usefulness. In addition to forging links between the text and example, the use of an existing melody would also integrate this point within contemporary performance culture, and was a fairly common approach for similar points at this time. Later theorists such as Walter Odington and Petrus de Cruce made use of similar pitch indications in the body of the text relating to musical examples, suggesting that this was considered to be a useful exemplification strategy.⁵⁸



Figure 10. Lambertus, *Ars musica*, mm307. Example 11 (bottom) with accompanying theoretical text (F-Pn Lat. 11266, fol. 14v).

⁵⁷ Lambertus, *Ars musica*, m. 307, ed. Christian Meyer and trans. Karen Desmond, *The 'Ars musica' Attributed to Magister Lambertus/Aristoteles* (Farnham: Ashgate, 2015), pp. 46–47. All subsequent references to Lambertus's text are taken from this edition and translation. In the absence of chapter divisions, passages are indicated using 'mm' reference number from the volume. At this point, the text of this edition follows I-Sc L.V.30 a, which differs substantially from Coussemaker's *Scriptores de musica medii aevi*, ed. Edmond de Coussemaker (Paris: Durand, 1864-76; reprint ed., Hildesheim: Olms, 1963), vol. 1, p. 262. Available at http://www.chmtl.indiana.edu/tml/13th/ARITRA_TEXT.html (accessed 7 March 2015).

⁵⁸ See, especially, Walter Odington, *De speculatione musica*, V:xviii, 'De tonis', ed. Coussemaker in *Scriptores de musica medii aevi nova series a Gerbertina altera*, 4 vols (Paris: Durand, 1864-76; reprint ed., Hildesheim: Olms, 1963), vol. 1, pp. 218–234.

This visual layout of Figure 11 strengthens the link between the musical notation and theoretical text, with both aspects clearly working as part of a theoretical whole, stressing the interdependence of these two parts in communicating theoretical content. Despite the clear differences from Figure 10, elements of the theoretical text are ‘projected’ into musical notation. However, this degree of projection seems to prioritise factors outside of the theoretical text, and thus verges on the extrapolation model of exemplification that is discussed extensively in relation to Tinctoris’s texts in Chapter Five.

This kind of exemplification occurs relatively infrequently within the context of a theoretical treatise, and is perhaps suggestive of theorists beginning to experiment with the relationships between text and notation as ways to aid reader understanding. Lambertus may have chosen this approach to provide a degree of familiarity for his readers; it may have encouraged a type of ‘concurrent reading’ whereby the text and musical demonstration could be consulted simultaneously. Though distinct from apparently similar reading practices evidenced in Tinctoris’s treatises, it is nevertheless significant that theorists began to exploit more fully the interdependence of theoretical text and musical notation, with the case here providing one such instance of striking alignment.⁵⁹

The Anonymous of St. Emmeram: *De musica mensurata*

The Anonymous of St. Emmeram’s *De musica mensurata* (1279) is a monumental work of music theory totalling some 38,000 words.⁶⁰ The anonymous treatise is also unusual in that it is written in the form of didactic leonine verse with accompanying prose commentary, some of which takes the form of interlinear glosses.⁶¹ I know of no other music theory treatise to adopt this form of didactic verse, though Lambertus’s text does make use of other forms of didactic verse in the *musica plana* section of the text.

⁵⁹ Petrus de Cruce’s *Tractatus de tonis* (Coussemaeker’s *Scriptores*, vol. 1, p. 311) is a particularly good example of this, probably emerging in the years immediately following the composition of Lambertus’s text. In De Cruce’s text, large portions of the treatise show evidence of this strategy of exemplification, suggesting that this was something of a trend in musical exemplarity. There is also an argument here to suggest that the theoretical text and musical notation are presented in this way to aid memorisation.

⁶⁰ This figure is staggering compared to the other treatises of the *musica mensurabilis* complex, which rarely extend beyond 12,000 words.

⁶¹ Leonine verse is a literary term used to describe a medieval poetic text which contains internal rhyme between the final syllable and the middle syllable of a line. It is so called because it is first found in a *Historia sacra* text, attributed to a ‘Leoninus’, though it may refer to the twelfth-century Benedictine musician of the same name. The verse form is a non-traditional Latin poetic form.

Though designed to appear as a commentary on an authoritative work by a different author, both parts are the work of a single unidentified author. Whatever the motives for this stylistic choice, it is clear that it builds upon the long-held traditions of medieval scholarship and exegesis in a different way from other *musica mensurabilis* treatises.⁶² Indeed, the textual variety in the treatise, and the use of terminology not always associated with contemporary music theory, points towards an author with scholarly pretensions keen to demonstrate his erudition publicly. This points to a different rhetorical strategy from those seen in the treatises by Lambertus and Franco.⁶³ Despite the differences in rhetorical form, *De musica mensurata* neatly represents the transition of music theory from writers such as Lambertus, to Franco of Cologne and the later *Ars nova* theorists, occupying an important place in our understanding of this transition.

The treatise survives in only a single manuscript, D-Mbs Clm. 14523, an intriguing artefact in itself, given the composite nature of its contents.⁶⁴ In addition to *De musica mensurata*, this manuscript also contains a copy of Boethius's *De institutione musica*, though it should be noted that the Anonymous of St. Emmeram's treatise appears in a markedly different hand to the majority of the manuscript. Indeed, the differences in page size, scribal hand and text style suggest that this treatise was a later addition to the manuscript, and not conceived as part of the original project.

Given that the anonymous theorist's treatise stems from the 'Garlandian' tradition of music theory, and includes allusions to his text on mensural music, it is unsurprising that a wide range of examples are used to demonstrate many different types of theoretical points, including citations from polyphonic repertory similar to that found in Franco's *Ars cantus mensurabilis*. The sheer quantity of small-sized text crammed onto each page (ranging between 45 and 62 lines per side), which is often quite difficult to read, forces the small examples to be placed into available gaps, making them appear in subordinate position to the theoretical text. Indeed, this is in stark contrast to the space accorded to musical examples in other texts discussed thus far, indicating a different purpose for this copy of the treatise. Such a cramped layout

⁶² Jeremy Yudkin, 'The Anonymous Music Treatise of 1279. Why St. Emmeram?', *Music & Letters*, 72/2 (1991), pp. 177-178. Some sections of Lambertus's treatise are written in verse, perhaps suggesting a didactic function for this form.

⁶³ Given the approach and content of the treatise, it is likely that author had some association with the University of Paris. The length may point towards an aspiring scholar, keen to demonstrate his erudition somewhat flamboyantly.

⁶⁴ See <http://opacplus.bsb-muenchen.de/search?oclcno=162323129> (accessed 16 June 2015).

is maintained across all four gatherings of this treatise, which is significant given that it is the work of two different scribes, one of which had a slightly more formal hand. The hand for the musical examples is almost certainly French, placing this treatise within the context of other contemporaneous music treatises. It would seem that this copy of the treatise was rather more ‘functional’ than presentational, representing a different, lower cost, transmission process from the other theoretical manuscripts discussed above.⁶⁵ Due to the necessary brevity of the discussion here, and the many similarities to texts discussed above, only one type of example will be explored.

Although Franco of Cologne is often credited as being the first to make extensive use of citations from existing polyphonic works (almost exclusively from the Notre Dame repertory) in a music theory treatise, the Anonymous of St. Emmeram makes frequent use of such citations. Indeed, the anonymous text was probably slightly earlier than Franco’s treatise given that the *Ars cantus mensurabilis* is not referred to in the anonymous text but the theories emerging from Lambertus’s *Ars musica* are discussed and criticised in some detail (without mention of Lambertus’s name). The association with the repertory of Notre Dame is clear for the identifiable works, and for those that cannot be identified the link seems highly likely.⁶⁶

Figure 12 contains three short musical extracts, all of which have now been identified.⁶⁷ All three are vertically aligned in ‘quasi-score’ format, an approach also seen in Franco’s *Ars cantus mensurabilis*.



Figure 12. Anonymous of St. Emmeram, *De musica mensurata*, ii. A set of citations shows hoquet passages in vertical alignment (D-Mbs Clm. 14523, fol. 153r).

⁶⁵ These issues are discussed more fully in Jeremy Yudkin, ‘Introduction’, *De musica mensurata: The Anonymous of St. Emmeram* (Bloomington: Indiana University Press, 1990), pp. 10–63, esp. pp. 34–43.

⁶⁶ On the sources of these citations, see Yudkin and Scott, ‘Ut hic’. See also note 40. Despite having a precise date for *De musica mensurata*, its relationship to other sources is much less clear.

⁶⁷ ‘In seculum’ is a well-known citation from the Notre Dame repertory. The parent source for ‘Manere’ is identified in Mary Wolinski and Barbara Haggh, ‘Two 13th-century hoquets on *Manere* recovered’, *Early Music History*, 38/1 (2010), pp. 43–57. David Catalunya recently identified the two-voice ‘amen’ as a citation from a colossal four-voice *Amen* setting. See David Catalunya, ‘Medieval Polyphony in the Cathedral of Sigüenza: A New Identification of a Musical Example quoted in the Anonymous Treatise of St Emmeram (1279)’, *Studi musicali: nuova serie*, 5/1 (2014), pp. 41–82.

In aligning the different polyphonic parts vertically, the scribe has made it significantly easier for the hocket effect to be understood visually, rather than through a more complex process of aural imagination or performance of consecutively notated parts. This almost certainly demonstrates a pedagogical choice, presumably made by the theorist, to adapt existing musical notations to best demonstrate the theoretical point. The use of vertical alignment stresses the importance attached to the visual comprehension of musical examples in a theoretical context, even at this early music-historical stage. In turn, this may leave some clues as to possible modes of reading associated with such texts, pointing towards a silent reader consulting this text in private.

However, the relationship between the musical notation and text is different here from the case shown in Figure 10 from Lambertus's *Ars musica*. The anonymous text describes the notational phenomenon on display in the musical example, but does not state specifically how it is manifested in the notation, or highlight the key theoretical moments.⁶⁸ Instead, the theorist trusts in the notation to demonstrate fully the theoretical points made in the paragraphs that preceded the examples, with the use of vertical alignment aiding the visual comprehension of this otherwise aural phenomenon. Although some practical sources do make use of vertical alignment, to the best of my knowledge no extant sources present the parent works for these citations in this format.

The citation with the incipit 'In seculum' shows a hocket passage based upon a piece of music with the same text that survives in the Montpellier Codex (F-MO H 196, henceforth **Mo**) on fol. 3r. **Mo** is one of the finest surviving repositories of thirteenth-century Parisian musical repertory, further linking this treatise with the musical climate of Paris.⁶⁹ This concordance would also suggest that the theorist, or scribe, had access to musical sources containing this repertory, a hypothesis that is further strengthened by the repertoire cited throughout the treatise.⁷⁰ Significantly, the parent work from

⁶⁸ See Anonymous of St. Emmeram, *De musica mensurata*, ii, ed. and trans. Jeremy Yudkin, pp. 226–229.

⁶⁹ See Mary Wolinski, 'The Compilation of the Montpellier Codex', *Early Music History*, 11 (1992), pp. 263–301.

⁷⁰ Indeed, the repertoire cited in many of the *musica mensurabilis* treatises can be found in the Montpellier Codex, suggesting that its repertory is probably representative of contemporary musical tastes. From this link, one could very tentatively suggest that some of the anonymous compositions may be compositions by the *musica mensurabilis* theorists. The idea of a 'theoretical canon' is something Jeremy Yudkin outlined in 'Ut hic'.

which this hocket is drawn is not presented in vertical alignment in **Mo**, and is presented in the more commonly used consecutive voice layout.⁷¹ This would seem to suggest that this layout was chosen as part of a strategy of exemplification, applied with relative consistency across the whole treatise.

Theoretical treatises securely dated before 1279 do not often employ this kind of vertically aligned notation in discussions of complex rhythm in polyphonic music. The change in approach may, in part, be attributed to the emerging popularity of hocket, and highlights one possible way in which theorists responded to changing musical tastes. Indeed, a similar approach is taken in Franco of Cologne's discussions of hocket, perhaps indicating something of a codified theoretical practice for indicating such content in a theoretical context. In this instance at least, the theorist seems to have prepared this example to aid private contemplation, a view further corroborated by the use of verse/commentary format and his direct address of a single reader throughout the treatise.⁷²

Franco of Cologne: *Ars cantus mensurabilis* (c. 1280)

The *Ars cantus mensurabilis* (c. 1280), which Anonymous IV attributes to a 'Franco di Colonia', marks the final case study in this survey of developments in exemplification from thirteenth-century music theory.⁷³ This treatise demonstrates the next step in the progression towards the practice of regularly citing polyphonic musical extracts from existing works as part of the main theoretical discussion. Franco's treatise, arguably, had the greatest influence upon the next generation of music theorists, spawning many 'look-a-like' treatises and compendia, such as the anonymous *Ars musicae mensurabilis secundum Franconem* (CS 15), which appeared shortly after the *Ars cantus mensurabilis*, and Robert de Handlo's *Regule*.⁷⁴ These 'look-a-like' treatises adopt similar exemplification strategies that I am not able to discuss at length here.

The popularity of Franco's treatise probably lay in its focus on notational reforms that provided greater rhythmic specificity, allying specific rhythmic durational values to particular noteshapes. This reduced the level of rhythmic ambiguity inherent in earlier notational forms founded on rhythmic modes by making notational

⁷¹ I have been unable to find another vertically aligned source for this work.

⁷² Rico, *Music in the Arts Faculty of Paris*, p. 275.

⁷³ Almost all of the surviving sources attribute this treatise to a 'Franco', though his region of origin seems slightly less secure.

⁷⁴ Handlo's treatise includes numerous examples that follow similar models to those outlined above.

combinations indicating rhythm less context-dependent.⁷⁵ It continued a trend that is clear even in Lambertus's *Ars musica* towards the semibreve as a unit of tempus and towards greater rhythmic specificity.⁷⁶ It built upon the existing staff-based models, but allied noteshapes and groupings with durational values, thus clarifying existing notational systems. While exerting great influence on the development of practical music theory as a discipline, the treatise also bears the influence of late thirteenth-century intellectual trends, particularly the interest in Aristotelian logic at the University of Paris.⁷⁷ Its brevity and technical precision was an appealing feature for readers of music theory, making it a relatively user-friendly handbook on musical notation.⁷⁸

Franco's treatise is characterised by the inclusion of citations from existing musical works to demonstrate theoretical points. Although the St. Emmeram Anonymous also made use of pre-existent works in his treatise, Franco's text makes much more frequent use of such citations, allowing them to become fully integrated parts of his argument.⁷⁹ These citations function in a different fashion to those found in Tinctoris's texts, being used to exemplify theoretical points rather than critique contemporary practice.⁸⁰ The continued copying of Franco's treatise well into the fifteenth century offers a rare and interesting perspective in understanding how the role of examples changed in theoretical texts, and the ways that examples were adjusted or 'updated' to hold greater relevance to a contemporary audience. As with Boethius's *De institutione musica*, the text remained largely unchanged but the examples were, in many cases, altered almost beyond recognition.

The treatise survives in eight manuscript sources that are spread both geographically and chronologically. Two sources are roughly contemporaneous with the composition of the treatise: F-Pn Lat. 11267 (P1)⁸¹ and F-Pn Lat. 16663 fols. 76v-

⁷⁵ At this historical distance, the level of ambiguity is probably greater than in Franco's own time. Nevertheless, his theories attached durational value to individual noteshapes.

⁷⁶ See Meyer, *Ars Musica*, 'Introduction', p. xix.

⁷⁷ Michel Huglo, 'Recherches sur la personne et l'œuvre de Francon', *Acta Musicologica*, 71/1 (1999), p. 13. See also Yudkin, 'The Influence of Aristotle'.

⁷⁸ This starkly contrasts the Anonymous of St. Emmeram's verbose and cumbersome *De musica mensurata*.

⁷⁹ See Christian Thomas Leitmeir, 'Types and Transmission of Musical Examples in Franco's *Ars cantus mensurabilis musicae*', *Citation and Authority in Medieval and Renaissance Musical Culture: Learning from the Learned*, ed. Suzannah Clark & Elizabeth Eva Leach (Woodbridge, Suffolk: Boydell Press, 2005), pp. 29–44.

⁸⁰ On Tinctoris's use of citations from pre-existent works, see Chapter Four.

⁸¹ P1 contains Franco's treatise alone. The compact size and neatness of the text would suggest moderate care and expense in preparation. The opening folios see rough scribbles in various hands and

83r (P2). Both date from the thirteenth century and are of Parisian origin, offering some of the best insights into the examples in the original rendering of Franco's treatise.⁸²

The citations from pre-existent repertoire deployed throughout the treatise seem to further support an apparent Parisian link, as demonstrated by the first example of the treatise, though this is far from conclusive. This example (Figure 13) is a citation of the *duplum* part of the double motet *Chorus innocentium sub Herodis/In Bethleem Herodus iratus*, a piece that is cited in numerous treatises of the so-called 'Gaudet brevitare moderni' tradition in various guises.⁸³ Franco quotes the first ten notes of the *duplum* part, omitting all other voices. This could, arguably, be interpreted as the musical example being taken out of its musical context to demonstrate a simple notational point that probably could have been demonstrated using a newly composed example, as Tinctoris might have done. However, it is indicative of an earlier practice of exemplification.⁸⁴ Franco writes:

Si autem longam longa sequatur, tunc prima longa sub uno accentu tribus temporibus mensuratur et perfecta longa nuncupatur, sive sit figura vel pausa:

Now if a longa is followed by a longa, then the first longa measures three tempora under one accent and it is called a perfect longa, irrespective of whether it be a figure or a rest, as here:⁸⁵



Figure 13. Franco of Cologne, *Ars cantus mensurabilis*, v. Example showing that a longa followed by a longa is perfect (F-Pn Lat. 16663, fol. 78r).

a notated passage of music in the fifth rhythmic mode, probably suggesting that this was a personal copy.

⁸² The other five sources are as follows: F-Pn Lat. 16667, fols. 152–165; F-SDI 42, fols. 43–53v; I-MA D.5.ind., fols. 110–118; I-TRE [MS without no.], fols. 3–14 (MS written by Gaforus); S-Uu C 55, fols. 20–43. See Andrew Hughes, 'Franco of Cologne', *Oxford Music Online. Grove Music Online* (Oxford University Press), <http://www.oxfordmusiconline.com/subscriber/article/grove/music/10138> (accessed 9 September 2013).

⁸³ Peter M. Lefferts, *Robertus de Handlo: The Rules, and Johannes Hanboys: The Summa*, p. 167, n. 168. Many of the other nine roughly contemporaneous treatises, which are strongly indebted to Franco, remain anonymous. It appears that Franco's text was carefully studied, perhaps in much the same way that Tinctoris's works were favourites of Gaforus and, perhaps to a lesser extent, Giovanni Spataro and Giovanni del Lago in the sixteenth century. The piece is also cited in Petrus Picardi's *Musica mensurabilis* (missing notation), the Anonymous of St. Emmeram's *De musica mensurata*.

⁸⁴ For a later point of comparison, see Chapter Three.

⁸⁵ Franco of Cologne, *Ars cantus mensurabilis*, Ch. 5, ed. and trans. Rob C. Wegman (online), https://www.academia.edu/2080505/Franco_of_Cologne_The_Art_of_Measurable_Song_c.1280 (accessed 6 September 2014), p. 4. All subsequent references to the text will be taken from this edition and translation.

The text here outlines, with specific rhythmic details, the main point to be demonstrated, that is, a longa followed by a longa measures three tempora and is called a perfect longa. However, it should be noted that this example is faulty in all but two sources, one of which uses a different piece of music, causing problems for readers of certain manuscripts.⁸⁶ Although Franco uses a citation from a pre-existent polyphonic work, it is clear that its function is more graphical than ‘musical’. In the later sources of Franco’s text, the examples are so far removed from this original, that their theoretical usefulness is significantly reduced. However, the theoretical point this example makes, in all its forms, could have been easily demonstrated through a simple newly composed graphical miniature, and thus further examination of this exemplification strategy is required.

Indeed, the answer, as Christian Leitmeir has observed, might lie in a consideration of contemporary practices of scholarship.⁸⁷ During the twelfth and thirteenth centuries, scholarship was founded upon the use of *auctoritates* (authoritative texts) to support arguments. These *auctoritates* included texts by Plato, Aristotle, Boethius, and Christian authors such as St. Augustine. For music theory, the main ‘authoritative’ text was Boethius’s *De institutione musica*, a text that was not especially relevant to the notational concerns of the thirteenth-century musician. Thus, theorists were forced to look elsewhere for authoritative support to legitimise their arguments in the contemporary scholastic model.⁸⁸

It seems that Franco used citations from existing works as authoritative sources to support his works, though readers from outside of music theory may not have accepted their scholarly value fully. The authority of these citations is ‘bolstered’ by passing references to Boethius, Guido and Gregory in the prologue to the treatise, acting as a kind of intellectual defence from those who sought to challenge the validity of Franco’s claims. However, these authors are not invoked in the main theoretical content, and thus their presence serves only to show awareness of their texts, perhaps even showing evidence of ‘name dropping’.

⁸⁶ Leitmeir, ‘Types and Transmission of Musical Examples, pp. 29–44, esp. pp. 40–44.

⁸⁷ Christian Thomas Leitmeir, *Sine auctoritate nulla disciplina est perfecta: Medieval Music Theory in Search of Normative Foundations*, in *Between Creativity and Norm Making: Tensions in the Later Middle Ages and the Early Modern Era*, ed. Sigrid Müller and Cornelia Schweiger (Leiden: Brill, 2013), pp. 31–60.

⁸⁸ Lambertus, for example, underpins his treatise with models from Dominicus Gundissalinus.

The graphical function of the notation in Figure 13 is further emphasised when the different manuscript sources are compared in their presentation of this point. Unlike later treatises that tended to include the same examples across different sources, with only small discrepancies that can be ascribed to scribal mistakes, the sources for Franco's treatise show significant changes in the examples to fit changing needs.⁸⁹ A brief comparison of the examples presented in **P1** and GB-Ob Bodley 842 (henceforth **O**) is particularly illuminating.⁹⁰

In place of 'In bethleem', a common example in contemporary Parisian sources, the **O** scribe includes a citation with the text 'Pater omnium creator mundi salus' (Figure 14).



Figure 14. Franco of Cologne, *Ars cantus mensurabilis*, Ch. 5. 'Pater omnium creator mundi salus' (GB-Ob Bodley 842, fol. 51r).

This example, though different from the other sources of the *Ars cantus mensurabilis*, still exemplifies Franco's theoretical point. Given that **O** is the only known English source for Franco's text and includes a different example, it seems likely that the scribal exemplar only indicated the citations of existing musical examples through text incipit. A scribe could use this incipit to locate an example within a central manuscript or from loose sheets. The incipit 'In bethleem', though referring to a popular piece in extant continental sources, does not correspond to any piece from the known English repertory at this time, and thus it seems that the scribe was forced to include a different example to demonstrate this theoretical point. It is likely that a highly musically literate scribe who understood Franco's theoretical teaching made this choice, and was thus able to select a suitable example in the absence of that recommended by the theorist. This source may therefore provide a glimpse into an otherwise unknown musical repertory

⁸⁹ As will be shown in Part Two, Tinctoris's texts show a remarkable degree of similarity across the manuscript sources.

⁹⁰ Leitmeir, 'Types and Transmission of Musical Examples', pp. 40–44.

of the period, though I am unable to explore this issue fully here.⁹¹ This also suggests that musical examples, at this time, were not always notated fully in exemplar copies of texts, perhaps indicating that theorists were often less concerned with the precise example to be included. It would seem that text incipits were used to identify examples, perhaps showing the implicit assumption that these works were readily available to those responsible for the copying of such texts.

Summary

From the case studies explored above some initial conclusions can be drawn about the developments in approaches towards musical examples during this period. The first of these is that, within a period of about fifty years, polyphonic examples and citations from voice parts in pre-existent polyphonic works seemingly developed from being something of a rarity to a more common feature in music theory treatises, reflecting a shift in exemplification strategies. Partial precedents for Tinctoris's techniques, and those of his more immediate predecessors, can be seen upon closer examination, though these techniques were in a prototypical stage.

Secondly, it would seem that examples were not always written out in full in the exemplar copies from which scribes copied these treatises, leading to relatively stable text transmission and a somewhat less stable example transmission, a point also demonstrated by variations in other types of diagrammatic content, as evidenced by the transmission of Boethius's texts. This does not necessarily reduce the importance of examining the examples in these texts, but is demonstrative of a different exemplification strategy, affecting the formation of the theoretical 'whole'.

From this historical survey, it seems that theorists were beginning to incorporate the kinds of example that a potential reader might have encountered in a practical source as the focus shifted towards practical matters, particularly topics pertaining to musical notation. However, the indication of these in exemplar copies, possibly via reference to text incipits, did not always allow for the consistent transmission of non-text material. Despite this, these developments show that musical examples increasingly came to be

⁹¹ Issues of this sort, though admittedly for a later period, are discussed in Gianluca d'Agostino, 'Reading theorists for recovering "ghost" repertoires: Tinctoris, Gaffurio and the Neapolitan Context', *Studi Musicali*, 34/1 (2005), pp. 25–50.

viewed as legitimate authorities, providing evidence to justify theoretical points in a practical sense, showing at least partial precedents for some of Tinctoris's techniques.

The evolution of musical exemplarity throughout the fourteenth and early fifteenth centuries

Although the second half of the thirteenth century saw many important developments in practical music theory, as evidenced by the *musica mensurabilis* complex, the fourteenth and early fifteenth centuries should not be discounted as periods of significant development in musical exemplarity. Indeed, the works of writers such as Marchetto of Padua were widely disseminated and exerted a great influence on later theorists such as Johannes Tinctoris.⁹² Marchetto's theoretical treatises, judging from Herlinger's detailed analysis, were viewed as important texts by his contemporaries, given that they were copied, abridged, and reworked numerous times across the fourteenth and early fifteenth centuries. Discussions of aspects of his *Lucidarium* appear in the treatises of Prosdocimo de' Beldomandi and feature in the sixteenth-century Del Lago/Spataro correspondence, alongside detailed discussions of Tinctoris's *De arte contrapuncti* and the works Franchinus Gaforus.⁹³ Marchetto's treatises, much like some of Tinctoris's texts, often theorise beyond the level required for practical understanding, providing exhaustive explorations of topics that extend into the realm of theoretical fantasy. It is for this reason, however, that his texts continued to fascinate later theorists.

In the interests of brevity, the present discussion will focus on the *Lucidarium*, given its widespread transmission in fifteen manuscript sources in a complete, or near-complete, form, and the influence that it had upon later theorists, including as Tinctoris.⁹⁴ The *Pomerium* has been more prominent in modern scholarship, probably

⁹² Elements of this influence permeate Part Two. Marchetto's influence is discussed at length in Jan Herlinger, 'Marchetto's Influence: The Manuscript Evidence', *Music Theory and Its Sources: Antiquity and the Middle Ages*, ed. André Barbera (Notre Dame: University of Notre Dame Press, 1990), pp. 235–258. See Jan Herlinger, 'L'influsso di Marchetto: prove manoscritte', *La filologia musicale: istituzioni, storia, strumenti critici*, vol. 3, ed. Maria Caraci Vela, pp. 201–228. I am grateful to Dr Herlinger for sharing his encyclopaedic knowledge of the Marchetto sources with me.

⁹³ See *A Correspondence of Renaissance Musicians*, ed., Bonnie J. Blackburn, Edward E. Lowinsky, Clement A. Miller (Oxford: Clarendon Press, 1991), pp. 148–151. The influence on Tinctoris and Gaforus is particularly centred on the chromatic semitone and issues relating to tuning.

⁹⁴ Herlinger observes that 'on the basis of standard reference works and textbooks, anyone would conclude that the *Pomerium* is the more significant of the two. However, when considered in light of the number of surviving sources, it would appear that the *Lucidarium* exerted a greater influence its

due to its focus on notational practice that was quickly outdated in its own time. It would seem that the *Lucidarium*, surviving in more sources and whose theoretical arguments appear more frequently in later theory, exerted a greater influence at the time. Thus, the *Lucidarium* is a more suitable treatise to use as a case study for approaches towards musical exemplarity in this context.

Examples in Marchetto of Padua's *Lucidarium* (1317–1318)

Given that the *Lucidarium* focuses on *musica plana*, the examples in this treatise are mostly monophonic or diagrammatic. It must therefore be stated at the outset that a slightly different exemplification approach is at work here than the treatises on measurable music. The majority of these examples are newly composed monophonic miniatures and are presented without text. However, my case study here shows a newly composed polyphonic example showing foundational contrapuntal formulas.

Marchetto's discussion of tuning, particularly the 'diesis', or five-part division of the tone, is significant, given that he is among the first to discuss the tuning implications of notational symbols.⁹⁵ It seems clear from the widespread citation of this point that his views attracted the attention of contemporary musicians.⁹⁶ Elements of his discussion can be found in Tinctoris's discussions of the chromatic semitone in *De arte contrapuncti*, albeit in a slightly confused manner.⁹⁷

Although this topic is fairly abstract, Marchetto provides a musical example to show how the 'sound' of the different types of semitone can be notated (see Figure 15). This example consists of three two-voice, note-against-note contrapuntal formations, each of which deploys a chromatic semitone on the second note of the upper voice. In the first part, this sign is used in the first part to indicate the 'chromatic' sound of this

contemporaries. The focus on fourteenth-century notational practices probably rendered the *Pomerium* obsolete for later theorists. See Herlinger, 'Marchetto's Influence'.

⁹⁵ Marchetto's tuning system uses the following ratios: Whole Tone = 9:8; Diesis = 1/5 Tone; Minor [Enharmonic] Semitone = 2 Dieseis; Major [Diatonic] Semitone = 3 Dieseis; Chromatic Semitone = 4 Dieseis. See Herlinger, 'Marchetto's Division of the Whole Tone', *Journal of the American Musicological Society* 34 (1981), pp. 193-216; Ronald Woodley, 'Sharp Practice in the Later Middle Ages: Exploring the Chromatic Semitone and its Implications', *Music Theory Online*, 12/2 (May 2006).

⁹⁶ Herlinger, 'Marchetto's influence', p. 238.

⁹⁷ See *De arte contrapuncti*, II.xvii, ed. D'Agostino, pp. 308–311. On this topic see Margaret Bent, 'On False Concords in Late Fifteenth-Century Music: Yet Another Look at Tinctoris' *Théorie et analyse musicales 1450–1650: Actes du colloque international Louvain-la-Neuve, 23–25 septembre 1999*, ed. Anne-Emmanuelle Ceulemans and Bonnie J. Blackburn (Musicologica Neolovaniensia, Studia 9; Louvain-la-Neuve, 2001), pp. 65–118.

type of semitone and, by implication, the number of dieses that occur after the chromatic semitone, helping further to strengthen the links between the text and notation.

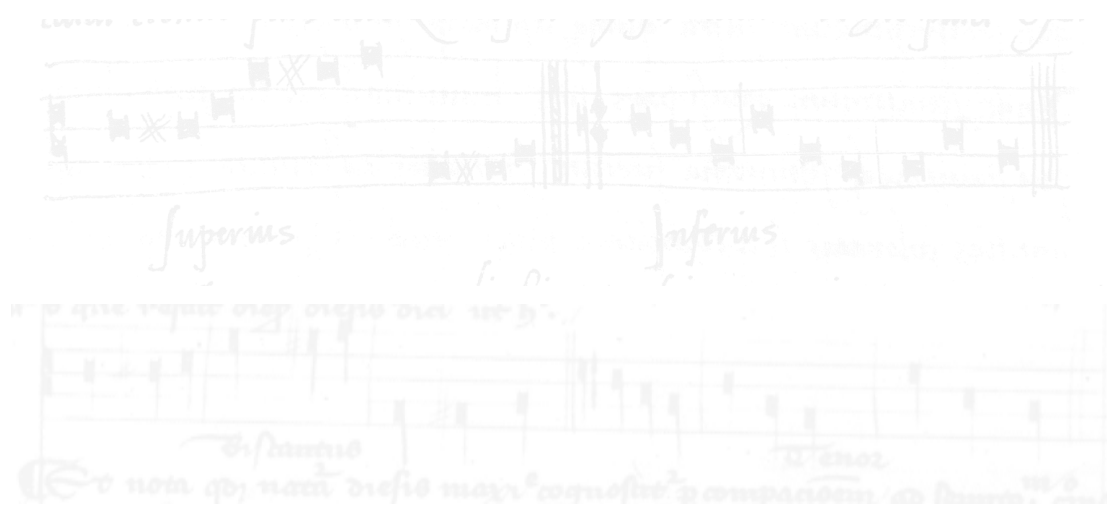


Figure 15. Marchetto of Padua, *Lucidarium*, II.vi.4, Example showing different types of semitone (I-PEc 1013, fol. 12v, top; US-Cn 54.1, fol. 14v, bottom).

This example brings a practical focus to an otherwise abstract discussion of tuning issues, though it does not enlighten the reader on the precise subdivision of the tone.⁹⁸ In earlier speculative texts such discussions often focussed upon the mathematical ratios of tuning, using diagrams with multiple curved lines to link specific distances proportionally. Marchetto takes a different approach that is seemingly more appropriate to his readership, using practical music to demonstrate the point. In adopting such an approach, Marchetto maintains the practical focus of his discussion without feeling the need to justify his point with further evidence. This is demonstrative of the emergence of practical music theory as a legitimate standalone discipline, and the changing practices of scholarship with which it was associated.

This newly composed example (Figure 15) clearly demonstrates the theoretical point required by the text, suggesting its integral place within the theoretical whole, even if it is somewhat schematic. It makes use of an early form of what is described later in this thesis as the instantiation exemplification model, whereby instances of the theoretical point, in this case the practical application of the ‘chroma’ (linked to the chromatic semitone), are mapped into musical notation with little or no contextual

⁹⁸ Note the omission of rests in the Superius of I-Pec 1013.

‘clutter’. However, Marchetto goes to some length to bring a slightly more ‘exploratory’ dimension to his musical example here, offering multiple scenarios in simple, note-against-note polyphonic contexts. This exemplification strategy is deployed for all of the examples discussing aspects of semitones and the diesis in the *Lucidarium*.⁹⁹ As will be demonstrated later, this holds significant similarities to the exemplification strategies adopted by Tinctoris in his notational treatises.

In contrast to the *musica mensurabilis* treatises of the thirteenth century, there is only limited variation across the sources of the *Lucidarium*, even in those separated by some historical distance. Indeed, US-Cn 54.1 is the oldest dated manuscript to contain the *Lucidarium*, and I-PEc 1013 (**Pg**) is a late fifteenth-century theoretical compilation that includes a pedagogical motet by Tinctoris and some of his other extended polyphonic miniatures.¹⁰⁰ The fact that both of these sources include the same example (Figure 15), and all other sources include one that is very similar, suggests that the example was notated in full in the authorial exemplar, demonstrating the importance Marchetto attached to this content. It is possible that the inclusion of such content required a fully notated form in the exemplar, as only a lengthy text-based explanation could have preserved this for a scribe to copy.

Despite the relative uniformity of the exemplification of notating the chromatic semitone, Marchetto’s demonstrations of hexachordal mutation differ in more significant ways, though, crucially, not to the same extent as some of the thirteenth-century texts discussed above. Marchetto, rather like Tinctoris, provides a monophonic musical example to show the hexachordal mutations possible on each note.¹⁰¹

In F fa ut sunt due voces et due mutationes. Prima est cum convertitur fa in ut propter ascensum nature in b rotundum; secunda e converso, ut hic:

On F fa ut there are two syllables and two mutations. The first occurs when fa is changed to ut on account of an ascent from the natural property to that of round b; the second when the reverse is the case, as here:¹⁰²

⁹⁹ See, Marchetto of Padua, *Lucidarium*, II.v–II.ix, ed. and trans. Jan Herlinger, *The Lucidarium of Marchetto of Padua* (Chicago: University of Chicago Press, 1985), pp. 130–160. All subsequent references to the text and translations will be taken from this edition.

¹⁰⁰ Jan Herlinger has suggested to me that the Milan source preserving the *Lucidarium* is probably the earliest surviving copy, though this source lacks a date. On Tinctoris’s pedagogical motet, see Bonnie J. Blackburn, ‘A Lost Guide to Tinctoris’s Teachings Recovered’, *Early Music History*, 1 (1981), pp. 29–116.

¹⁰¹ A more extensive comparison of exemplification techniques for hexachordal mutation can be found in Chapter Three.

¹⁰² Marchetto of Padua, *Lucidarium*, VIII.ix.9–11, pp. 284–285.

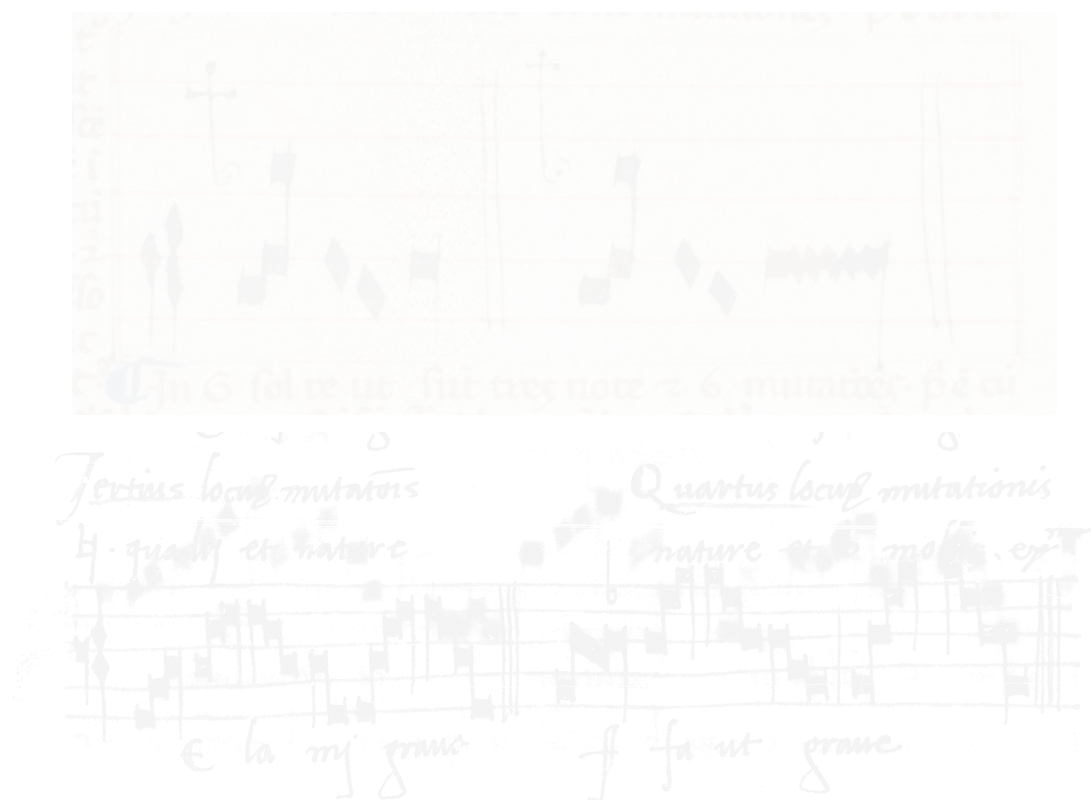


Figure 16. Marchetto of Padua, *Lucidarium*, VIII.ii.11. Example of hexachordal mutations on F fa-ut (CH-E 698, fol. 19v, top; I-PEc 1013, fol. 26r, bottom).

The differences between the two manuscripts in Figure 16 are immediately apparent. CH-E 698 includes an example that consists of only five notes, repeated in an identical form after a vertical stroke, whereas **Pg** provides a much more extended example. It is this latter version that appears in most of the main *Lucidarium* manuscripts, suggesting that it is closer to Marchetto's original intention, even if there are some small differences in its presentation across these main sources.

In providing a more extended example, the theoretical point is demonstrated more comprehensively and situated within a more 'realistic' context. **Pg** includes a caption text that identifies the mutations being demonstrated, helping to strengthen the links to the text, and to differentiate the example from the demonstration of mutations on E la-mi. This would aid a reader in identifying the mutations being demonstrated in the example, and perhaps aid a kind of concurrent reading, emphasising the notational relevance of the example. However, the text labels are not placed precisely at the points of mutation, and thus they can be judged to function as captions rather than active agents in the exemplification. Therefore, the example does not provide the additional

mechanisms seen in Tinctoris's mutation examples in the *Expositio manus*, though the theoretical point is still demonstrated clearly.¹⁰³

Despite the apparent advantages of including a longer example, the different approach in CH-E 698 might have been advantageous to certain readership groups. The brevity of the example, and by implication the lack of 'extraneous' musical detail, could have aided a reader who was less familiar with music theory and musical practices. The small size of this manuscript (14.5 × 11cm) might account for the change in example here, given that there would have been insufficient space for the original example.¹⁰⁴

What is clear, even from this single case, is that examples were still subject to substantial change in the transmission process. However, the degree of similarity between sources across a wide historical period suggests that Marchetto indicated the specific content of his examples in his exemplar, most likely a different approach to the authors of the *musica mensurabilis* treatises. This point is supported by the fact that all but three of the sources present an example that takes a recognisably similar form to the more extended one from **Pg**, a late fifteenth-century source.¹⁰⁵ As these examples are newly composed, they would not have been available in contemporary sources, suggesting a degree of 'tailoring' not immediately apparent in earlier texts. Marchetto's approach towards exemplary content would seem to suggest that examples were increasingly viewed as an integral part of the theoretical 'whole', but were still subject to a greater degree of variation than the main text. Even taking this degree of variation into account, the examples were almost certainly indicated with greater specificity, perhaps even in full, in the exemplar copy, rather than through text incipits or text-based descriptions: they functioned more actively in the exemplification process. Nevertheless, they were still subject to scribal alteration.

Philippe de Vitry and the 'Ars nova'

Another of the most important fourteenth-century music theorists was Philippe de Vitry (1291–1361), a distinguished composer and poet who may have been associated at some point in his career with the University of Paris. His supposed *Ars nova* 'treatise' is one of the most frustratingly problematic texts from this period, as it does not survive

¹⁰³ This technique is discussed more extensively in Chapter Three.

¹⁰⁴ On this source see <http://www.e-codices.unifr.ch/en/description/sbe/0689/> (accessed 15 June 2015).

¹⁰⁵ Marchetto, *Lucidarium*, p. 284.

in a complete form in any single source. Sections of the text are scattered across five manuscripts, many of which are theoretical compendia, leading Sarah Fuller to describe it as a ‘phantom’ treatise.¹⁰⁶ The sections that appear in more than one source also show significant differences that go beyond scribal variation, raising yet more questions about the transmission of this text. In terms of notated content, the most complete source is V-CVbav Barb. lat. 307 (fols. 19r–20v), a manuscript that also includes a fragment of Johannes de Muris’s (attr.) *Libellus cantus mensurabilis*. In this discussion, the musical examples from the explanations of tempus and modus will be examined to understand the exemplification strategies at work.¹⁰⁷

After explorations of aspects of monochordal theory (harmonic ratios, etc.), mutations, and semitones, the focus shifts towards the notational practices to indicate mensuration and rhythm. The first mensural topic to be discussed and supported by a number of examples is imperfect tempus.

Two types of example appear with relative frequency in this part of the treatise, though it should be noted that similar types of examples are also found in some earlier treatises. The first is a simple graphical definition, where the content of the text is presented in a simple graphical form (resembling notation) that serves as a definition rather than establishing a broader musical point.

Quando tres ponuntur, prima valet tres minimas, secunda duas, tertia solam, ut hic:	When three [notes] are placed for it, the first is worth three minims, the second two, and the third a single one, as here: ¹⁰⁸
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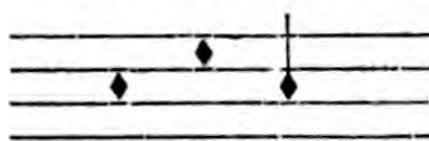


Figure 17. Philippe de Vitry, *Ars nova*. Short graphical demonstration of a rhythmic scenario in imperfect tempus. Image taken from CS III, p. 19.

The accompanying example (Figure 17) is very short, consisting of only three noteshapes, presented on a clefless staff. As required by the text, the example includes

¹⁰⁶ On this issue, see Sarah Fuller, ‘A Phantom Treatise of the Fourteenth Century? The *Ars nova*’, *Journal of Musicology*, 4/1 (1985–1986), pp. 23–50.

¹⁰⁷ All references to the *Ars nova* text are taken from John Douglas Gray, *The Ars Nova Treatises Attributed to Philippe de Vitry: Translation and Commentary*, PhD diss. (University of Colorado, 1996), pp. 40–50 (edition) & pp. 89–96 (translation).

¹⁰⁸ Philippe de Vitry, *Ars nova*, p. 40 (ed.) & p. 89 (trans.).

two semibreves and one minim, with the relative durational values matching those described in the text: three minims, two minims, one minim. In this instance, the theoretical content has been defined graphically through an example resembling notation.

The same exemplification strategy is used for the remainder of the discussion of imperfect tempus. What is significant here, however, is that musical examples are only provided for the discussion of imperfect tempus. Perfect tempus is only discussed in passing and lacks detailed explanation and exemplification. Another unusual aspect of the ordering of the text here is that the example that includes six individual minims, the most basic expression of perfect tempus, is placed as the fourth example rather than the first.¹⁰⁹ This type of ordering does not seem the most logical, pedagogically, and is far from comprehensive.

The second example type to be discussed from this part of the treatise focuses on the correct signs for perfect and imperfect tempus. As with the example discussed in Figure 17, these serve a primarily graphical function, largely due to the absence of a clef. However, these examples use three- or four-line staves, giving them a visual appearance closer to that of the type a reader might engage with in a practical source.

Unde sciendum quod, ad temporis perfecti designationem, circulus apponatur rotundus, quia forma rotunda perfecta est. Vel secundum aliquos obliqui apponantur tractuli tres, et unum est, ut hic:

Whence it should be known that to indicate perfect tempus, a round circle is placed alongside because a round form is perfect. Or, according to some, three oblique strokes are placed alongside, and both are one thing, as here.¹¹⁰



Figure 18. Philippe de Vitry, *Ars nova*. Miniature example of perfect tempus (V-CVbav Barb. lat. 307, fol. 19v).

¹⁰⁹ Such an approach is markedly different to Tinctoris's demonstrations of foundational material. See Chapter Three.

¹¹⁰ Philippe de Vitry, *Ars nova*, p. 42 (ed.) and p. 91 (trans.).

The accompanying example (Figure 18) demonstrates both aspects of the theoretical text. It opens with a circle signature, thus addressing the first signature described in the text preceding the example to indicate perfect tempus. A short rhythmic passage consisting of three semibreves, a breve and a long follow this opening signature, articulating the perfect tempus signified by the circle. The second indicator of perfect tempus, as outlined in the text, is the inclusion of three oblique strokes, which are placed after the initial rhythmic figure in Figure 18. Thus, both methods of indicating perfect tempus are used in this more extended example. The greater length enhances the ‘musical’ function of this example. However, no clef is provided, thus making pitch/solmisation content only relative rather than specific. This, in turn, suggests that this example was primarily intended for visual comprehension rather than aural realisation.

The two types of examples described briefly here appear closer to the Franconian tradition of examples than those found in Marchetto’s *Lucidarium*, as one might expect from the Parisian connection. Indeed, many treatises dedicated to notational issues adopt this type of exemplary approach. One such example of this is Johannes de Muris’s (attr.) *Libellus cantus mensurabilis*, where numerous notation points are provided with this type of musical example, as Figure 19 demonstrates.



Figure 19. Johannes de Muris (attr.), *Libellus cantus mensurabilis*. Example showing a notational scenario with relative pitch/solmisation content and superposed mensuration signatures (V-CVbav MS Reg. lat. 1146, fol. 36).

In a similar fashion to the two cases from De Vitry’s *Ars nova*, the example from De Muris’s text (Figure 19) includes simple graphical definitions of notational scenarios described in the main text. Interestingly, De Muris presents these definitions with superposed mensuration signs to present the scenarios in different mensurations, showing economical use of the exemplary content.¹¹¹ Although using notational

¹¹¹ Tinctoris uses superposed mensuration signs in two of his examples in *De regulari valore notarum*. See Chapter Three.

shapes, the example clearly serves a graphical function, providing definitions of a specific scenario containing two longs, two breves, and two semibreves, divided into sections. Such an example lacks the ‘active’ exemplification characteristics of Marchetto’s *Lucidarium*, though is still didactically useful.

Thus, many of the musical examples in these texts occupy a space closer to graphical demonstrations to illustrate specific notational points rather than broader musical practices. However, it seems clear that musical examples were not always applied consistently in any of the iterations of Vitry’s text. The use of examples for some theoretical points but not others is indicative of a different pedagogical approach to those of later treatises. It also, crucially, gives some indication of the status which certain theorists accorded musical examples at the time. Despite this, it is clear that the musical examples included here were constructed to demonstrate the theoretical point of the text, if not to establish broader musical practices or offer alternate scenarios in these cases. Such an approach holds similarities with the graphical definitions offered in the opening stages of many of Tinctoris’s texts, most notably those on imperfection, alteration and the musical dot.

Berkeley Treatises (1375)

The so-called Berkeley treatises, probably by the Parisian author Goscalcus, are a set of five late fourteenth-century treatises that cover several different aspects of music theory. They are notable for the diverse range of examples and diagrams used for demonstration across the five distinct treatises that span both practical and speculative music. The dating of this set to 12 January 1375, preserved uniquely in this format in US-Be 744 (henceforth **Be**), rests on a colophon found at the end of the third treatise.¹¹²

There is little reason to question the accuracy of this dating, certainly for the first three treatises, given that the topics addressed and the approaches towards this material are, for the most part, typical of late fourteenth-century practice. The contents of the second and third treatises, which are modelled upon the *Ars contrapuncti secundum Johannem de Muris* and the *Libellus practice cantus mensurabilis secundum Johannem de Muris*, show the most explicit links to key fourteenth-century texts. The

¹¹² The colophon is reproduced in full in Oliver B. Ellsworth, *The Berkeley Manuscript: A New Critical Text and Translation* (Lincoln, Nebraska & London: University of Nebraska Press, 1984) pp. 182–183. All subsequent references to the treatises are taken from this edition.

first and fourth treatises do not hold such clear links to other texts, though the first is fairly typical of its time, focusing upon modes, hexachords and, significantly, the *coniuncta*. However, the same cannot be said for the fourth, which is a rather unusual creature, both in terms of text and examples.¹¹³

Although a wide range of exemplary material is used across the set, the present discussion, in the interests of brevity, will focus on the first and fourth treatises to provide a cross-section of the approaches towards exemplification. The first treatise covers topics pertaining to the Guidonian Hand, and treats the topic quite differently from Tinctoris's *Expositio manus*. After outlining foundational topics such as the positions on the Hand, intriguingly without the use of examples or diagrams, the author provides several citations from pre-existent melodies to demonstrate *coniunctae* (see Figure 20).

Preterea secundum usum communem prima coniuncta accipitur inter A et B graves, et signatur in B b signo, et incipit eius deduccio secundum eos inferius sub Γ, sic quod in B gravi cantatur fa, et de hoc exempla habentur in Responsorio de Beata Virgine Sancta et immaculata, ubi dicitur non poterant, et in Responsorio Emendemus in melius, ubi dicitur et miserere...

Furthermore, according to common custom, the first *coniuncta* is taken between A and B graves; it is signed on B with the sign b, and its hexachord begins (they say) lower, below Γ, so that fa is sung on B *gravis*. There are examples of this in the Responsoy of the Blessed Virgin *Sancta et immaculata*, where “non poterant” is said, and in the Responsoy *Emendemus in melius*, where “et miserere” is said...¹¹⁴

Figure 20. First Berkeley Treatise. Examples of *coniunctae* (US-Be 744, p. 6, left, and p. 7, right).

¹¹³ Ellsworth notes that the author, presumed to be the same as the first three, is on rather less familiar territory in the fourth and fifth treatises. See Ellsworth, *The Berkeley Manuscript*, p. 7.

¹¹⁴ Ellsworth, *The Berkeley Manuscript*, pp. 54–55.

The author outlines the common practice of taking the *coniuncta* between A and B *graves* as being signed with b, viewing this as *fa* being sung on B *gravis*. A pre-existent piece is cited here and, rather significantly, the section of the work from which the citation is drawn is labelled in the text. The first example in Figure 20 shows a section of music with the text ‘Non poterant’, as stated in the main theoretical text. The text describes the citation with relative specificity, referring to an identifiable location within the parent work, the Responsory of the Blessed Virgin *Sancta et immaculata*, allowing the reader to situate this citation within the context of a larger work.

In using this approach, the author helps to ensure that the correct example is included by a scribe (if indicated only through text incipit in the exemplar), and allows the reader to explore the parent work further if desired.¹¹⁵ However, the musical notation lacks any additional information to show the key theoretical point. This meant that a reader would have been required to understand (to some degree) the content of the theoretical text and its application in order to access the material on display in the notation. Taking this into account, it is clear that the theorist wanted to forge links between the text and example as part of an exemplification strategy, ‘integrating’ the example as part of the theoretical whole.

There are clear similarities between the approach taken here and the thirteenth-century treatises discussed earlier in this chapter: a short musical citation from a pre-existent work is referred to in the text, creating a link between notation and text, and indicating the presence of an example. However, one significant difference here is that the text describes the location of the citation within the parent work with some specificity, creating links between the theoretical point, musical citation, and broader performance culture. Nevertheless, the approach is quite different from that seen in Marchetto’s *Lucidarium* (see Figure 15 and Figure 16).

Similar exemplification approaches are seen throughout the rest of the first treatise. The second and third treatises make use of a range of in-text citations showing specific rhythmic points, as seen in numerous treatises on mensuration in the fourteenth century.¹¹⁶ However, the approaches taken in the fourth treatise differ significantly

¹¹⁵ Contemporary conceptions of the ‘inner ear’ are difficult to ascertain from the extant sources. Nevertheless, it might be possible to infer that the theorist hoped this reference would trigger an aural memory of this piece.

¹¹⁶ See, for instance, Robert de Handlo’s *Regule; Ars discantus secundum Johannem de Muris* (CS 3:9); *Libellus cantus mensurabilis secundum Johannem de Muris* (CS 3:7); Anonymous XI’s *Tractatus de musica plana et mensurabili* (CS 3:38).

from these. Indeed, Ellsworth notes that the fourth and fifth treatises in the collection make use of more florid language, though this stylistic change is attributed to a change of subject-matter rather than a change of author.¹¹⁷ This is particularly true of the fourth treatise, an unusual text that is also found in B-Gu 70, a source containing unusual readings of some of Tinctoris's treatises.

The fourth Berkeley treatise is characterised by the inclusion of a number of diagrams showing ancient instruments, many appear as 'classicised' versions of instruments from the Middle Ages, and diagrams showing proportional relationships. Given that proportional diagrams have been discussed in relation to Boethius's treatise (see Figure 3 and Figure 4), the brief discussion that follows will focus on the illustrations of instruments.

Throughout this treatise, which is a mix of highly derivative passages, the author uses illustrations of musical instruments to support the 'historical' narrative outlining the addition of 'cordae' [strings].¹¹⁸ The first diagram, located on the left-hand side of Figure 21, shows the composition of a tetrachord by Albinus, which is exemplified using an instrument labelled in the text as a 'kithara'.¹¹⁹

Aliud tetracordum Albinus composuit, quod citharam nuncupavit, qui in ea lidium feriens corpus, dyapason eii fuit deductivum sufficiens personare, quam taliter compilavit:	Albinus composed another tetrachord, which he referred to the kithara. He caused the Lydian to sound on it by striking the body, and he drew out of it the diapason; he put the kithara together this way: ¹²⁰
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¹¹⁷ Ellsworth, *The Berkeley Manuscript*, p. 7.

¹¹⁸ Much of the 'historical' evidence the author presents to support his narrative is either misinterpreted or incorrect. Ellsworth's footnotes clearly highlight these shortcomings.

¹¹⁹ On a possible identification of Albinus in Boethius's treatise, see Christopher Page, 'Fourteenth-Century Instruments and Tunings: A Treatise by Jean Vaillant?', *The Galpin Society Journal*, 33 (1980), p. 22.

¹²⁰ Ellsworth, *The Berkeley Manuscript*, pp. 194–195.



Figure 21. Fourth Berkeley treatise. Illustrations of instruments to accompany ‘historical’ narrative (US-Be MS 744, pp. 52–53).

The pitch labels C, D, G, C, placed upon each of the strings (from top to bottom) could have been expressed more simply using a four-line diagram. Instead, a more visually appealing example is used, perhaps giving an insight into the exemplification strategy at work. Indeed, by placing such basic information within this type of illustration, the theorist might have intended this information to be memorised, with the image acting as a kind of visual ‘snapshot’ to be recalled. The use of a relatively elaborate illustration would have aided the visual retention of each step in the historical narrative, with readers being able to ally these points to a particular instrument image in their own memorial archive. In this instance, it seems that the theorist used examples to aid memorisation rather than to provide an ‘active’ demonstration of specific theoretical content. Indeed, the copy of this fourth treatise that survives in B-Gu 70 (G) retains almost identical diagrams, suggesting that this was part of a strategy and not down to scribal choice.

The fact that these diagrams are preserved to a high degree of similarity in two different sources is significant. It seems highly unlikely that a scribe could have completed these diagrams from the descriptions in the text alone or from a lengthy text-based description included as additional notes in the exemplar. These diagrams, then, were almost certainly conceived as an integral part of the text and not added by a single

scribe. Such diagrams are highly unusual and this treatise thus demonstrates an interesting diagrammatic approach towards musical exemplification.

Prosdocimo de' Beldomandi's *Tractatus plane musice* and *Contrapunctus*

Prosdocimo de' Beldomandi's eight treatises on music are key to understanding the changes in early fifteenth-century music-theoretical approaches.¹²¹ Prosdocimo was professor of arts and medicine at the University of Padua, and used Marchetto's *Lucidarium* as a source for a number of the discussions in his *Tractatus plane musice*, the focus of the present discussion. Indeed, the links between the *Tractatus plane musice* and Marchetto's *Lucidarium* allow the modern scholar to observe some of the changes in musical exemplification strategies over the course of a century within a fixed frame of reference.¹²²

Unlike Marchetto's *Lucidarium*, Prosdocimo's treatise on plainchant uses musical examples exclusively for the final topic, modal classifications, preferring discursive descriptions for other topics. Prosdocimo's monophonic examples are taken directly from existing repertoire, a choice that may be indicative of his own musical activity and his intellectual focus. He outlines the historical justification for the eight modes, and includes lengthy text-based descriptions of the construction of each mode, and their sound. However, when it comes to explaining the identification of modes from plainchant, his approach differs markedly.

Expeditio ergo modo cognoscendi tonos in quolibet cantu, psalmis exceptis, restat nunc declarare qualiter psalmi in ipsos intonando abinvicem per octo tonos diversificantur, qui modus per regulas aliquas non habetur, sed solum per exempla aliqua antiquitatis usitata traditur, que communiter assignari solent scripturis ... Prima ergo exempla sunt hec primitus infrascripta.

The manner of recognizing tones in any chant—the psalms excepted—having been expounded, it remains now to explain how the psalms are diversified one from another in intoning them according to the eight tones. The manner is not grasped through some rules but is handed down only through some examples anciently used, which are customarily assigned to written form...The first examples, then, are these written first below.¹²³

¹²¹ On Prosdocimo's biography, see Jan Herlinger, 'Prosdocimus de Beldemandis', *Oxford Music Online. Grove Music Online* (Oxford University Press), online, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/22430> (accessed 8 April 2015).

¹²² Given that both built their careers in Padua and bearing in mind the widespread influence of the *Lucidarium*, Prosdocimo's use of Marchetto's text is unsurprising.

¹²³ Prosdocimo de' Beldomandi, *Tractatus plane musice*, ed. and trans. Jan Herlinger, *Prosdocimo de' Beldomandi's Plana musica and Musica speculativa* (Urbana: University of Illinois Press, 2008), pp. 122–123.

The text here clearly requires the presence of some musical examples but, unlike Marchetto's discussion of modal classifications, does not give any specific guidance as to how to identify the modes. Instead, lengthy passages of texted plainchant are included with simple text introductions such as 'Modus primi toni' and similar. These labels, though identifying the mode, do not explain its construction from species of fourths and fifths.

It would seem that, in this case at least, Prosdocimo was less concerned with tailoring his approach to fulfil the didactic needs of young practical musicians. Instead, it seems that he was discussing modal classifications in an academic sense, perhaps for an intellectual audience (perhaps even non-musicians), who would not have benefited from, or necessarily been interested in, an exhaustive discussion of the construction of each mode. Indeed, the level of generality in Prosdocimo's treatise on plainchant would seem to suggest that it was not intended as a teaching text for the training of young singers, or as a reference text for an experienced musician. It uses a different pedagogical logic that centres on an intellectual exposition and exploration of a practical phenomenon, considered from an academic perspective.

The terminology used and the emphasis placed upon textual description would also seem to point towards a university reading public. Given that Prosdocimo held the position of Professor of Arts and Medicine at the University of Padua, a university readership as a primary audience seems highly plausible; he almost certainly had numerous disciples. This is not to diminish the rigour apparent in his music treatises, but rather to suggest that the preference for text-based examples, and the way that those few notated examples are deployed, is indicative of different spheres of readership from those of the Berkeley treatises or Marchetto's work.

Prosdocimo's treatise on counterpoint, *Contrapunctus*, also uses a similar exemplification strategy. This treatise is one of only a few to discuss, even in general terms, the use of florid *musica ficta* practices in early fifteenth-century musical performance. Unlike later treatises on counterpoint, Prosdocimo's *Contrapunctus* focuses on two-voice note-against-note counterpoint, somewhat limiting the range of examples.

The only musical example in Prosdocimo's *Contrapunctus* that is included in the majority of sources is found at the end of the fifth book of the treatise. This supports the discussions of *musica ficta*, building upon the foundational topics explicated in the

first four books. Prosdocimo likens *musica ficta* to a colouring of consonances that could not be created in any other way, offering new harmonic possibilities. He writes:

<p>Hinc est quod quanto consonantia imperfecta magis appropinquat perfecte ad quam accedere intendit, tanto perfectior efficitur, et inde dulcior armonia causatur. Et ut melius supra dicta intelligantur, pono hoc exemplum:</p>	<p>This is because the closer the imperfect consonance approaches the perfect one it intends to reach, the more perfect it becomes, and the sweeter the resulting harmony. And so that what has been said above may be better understood, I present this example.¹²⁴</p>
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Figure 22. Prosdocimo de' Beldomandi, *Contrapunctus*, V.vi (CH-E 689, fol. 55r).

For each pair of notes in this two-voice example, one of the voice parts has a symbol resembling either a round-b or a square-b, providing a chromatic alteration to the note to increase the 'sweetness' of the harmony, demonstrating Prosdocimo's point. The pitch alteration of one voice part through *ficta* is demonstrated in each segment of the example, alternating between the upper and lower voices.

The two voices are presented in quasi-vertical alignment, though the ligatures are not aligned with score-type precision. In most cases, the type of ligature used also matches across the voices, alternating between upright and oblique formations, marking out each section of the example. In visually aligning the notation here, Prosdocimo presents an example that could be understood fully through visual consultation alone. Such an approach facilitates an internal auralisation of the musical content as well as performative possibilities, offering multiple reading options.

Figure 22 shows an example that provides some scenarios indicative of a more general practice, but, crucially, does not have any specific theoretical content mapped from the theoretical text (i.e. pitch content). It also demonstrates that the value of

¹²⁴ Prosdocimo de' Beldomandi, *Contrapunctus*, V, ed. and trans. Jan Herlinger, *Prosdocimo de' Beldomandi: Contrapunctus* (Lincoln: University of Nebraska Press, 1984), pp. 82–85.

including musical examples continued to be recognised, though in Prosdocimo's case, notated examples are rather scarcer than in other texts. Nevertheless, it is clear that practical musical examples featured in more intellectually focused music treatises, in ways that they would probably not have a century earlier.

This example bears some similarities to those showing chromatic semitones in Marchetto's *Lucidarium*, discussed earlier in this chapter (see Figure 15). In Prosdocimo's treatise, the use of note-against-note counterpoint to demonstrate multiple instances of a theoretical point is significant. To my mind, this exemplification strategy is a clear forerunner to Tinctoris's note-against-note examples that are discussed at length in Chapter Three of this thesis, and builds upon some of the models set out by Marchetto.

Conclusion

Given that the necessarily brief survey of some developments in musical exemplarity is now complete, a few general conclusions can be made. These conclusions are intended to create a historical backdrop against which Tinctoris's treatises can be set. As stated at the outset, the aim was not to provide a detailed and exhaustive history of musical examples, and thus the conclusions remain fairly general. I hope to pursue further research in this area in the future.

In the early part of the Middle Ages, musical examples were recognised as a valuable way to demonstrate theoretical points, albeit in a markedly different fashion from Tinctoris's treatises discussed in Part Two. The examples of daseian notation shown from the *Musica enchiriadis* and Hucbald of St. Amand's *De harmonica institutione* have a distinctly practical flair that attempts to synthesise complex theoretical information into an accessible graphical form. These examples were notated in a fashion that did not give the rhythmic specificity of later treatises, but nevertheless functioned 'musically' within the theoretical whole, showing great care in their construction. In these cases, the exemplary content works with the main theoretical narrative, clearly articulating the relationship between the notation and theoretical text, forming a coherent theoretical whole.

In discussing practical music theory from before 1100, it is important to draw attention to musical examples of the *musica speculativa* tradition. The development in the exemplary content in transmissions of Boethius's music treatise is testament to the

changing approaches towards musical exemplarity across the Middle Ages. These sources show an increasing move towards examples as legitimate methods of demonstrating (and memorising) theoretical points, a technique further explored in practically focused treatises.

Indeed, Guido d'Arezzo's treatises used a different type of notation from their predecessors. In his widely disseminated *Micrologus* letter notation rather than staff-based notation is deployed to demonstrate theoretical points. Although using different systems, the early forerunners of the more complex exemplification models found in Tinctoris's theoretical texts can be seen. Theoretical points are structured in such a way that the text–example links are clear. However, the use of letter notation and the lack of any specifically mapped content are demonstrative of a practice in development, forging a different text–example relationship.

In the thirteenth century, a change in the position of music as an intellectual discipline, and an increased theoretical interest in practical music, affected approaches towards musical exemplarity radically. The treatises forming the Parisian *musica mensurabilis* complex, probably produced by authors associated with the University, demonstrate a shift towards practical music as a legitimate theoretical topic. The principal treatises of this complex show a gradual shift towards the use of citations from existing monophonic and (importantly) polyphonic repertoire to demonstrate theoretical points. Although these theorists deploy examples effectively and more regularly, there are significant variations across the sources that often diminish the function of the example within the theoretical 'whole'. Despite the fact that such variations can, in many cases, be attributed to scribal practices and errors, it seems likely that the theorists did not always include or indicate their desired examples and citations in full in an exemplar copy.

In the fourteenth and early fifteenth centuries, musical examples became a much more common feature of music theory treatises. Theorists seemingly indicated musical examples or figures with greater specificity in their exemplars. Marchetto of Padua's *Lucidarium* was one of the most influential texts of the period, clearly influencing later theorists, including Tinctoris. Despite surviving in numerous manuscripts, ranging in date from the early part of the fourteenth century until the late fifteenth century, the musical examples included are generally concordant. However, there is still some variation between the sources in their presentation of the musical examples. These changes may have been carried out to address the needs of certain types of readers. In

all forms, the *Lucidarium* makes extensive use of short monophonic examples that were clearly composed specifically for inclusion in this treatise. This specificity is reflected in the closer text–example relationship, with some content being clearly mapped into the musical notation, showing early forerunners to Tinctoris’s use of instantiation.

The Berkeley treatises offer an interesting twist in the development of musical exemplarity in music theory. The exemplification emphasis of the fourth treatise seems to be upon memorisation rather than ‘active’ demonstration. In contrast, the first treatise adopts a relatively similar approach to the type of examples found in Franco of Cologne’s *Ars cantus mensurabilis*, using citations from existing repertoire to establish broader points. The examples demonstrate particular theoretical practices, and are not designed to provide simple graphical demonstrations of basic theoretical points. In both cases, however, examples form an integral part of the theoretical whole, clearly evidenced by the construction of the text.

Prodocimo de’ Beldomandi also presumes a certain level of understanding in his treatises. Indeed, the two treatises considered in this discussion, *Plana musica* and *Contrapunctus*, make only limited use of notated examples. Lengthy text-based descriptions somewhat address the lack of notated exemplification, albeit in a less useful fashion for the practical musician concerned with notational phenomena, suggesting a different type of readership.

This evidence paints a historical picture in which exemplary content became an increasingly important part of treatises dedicated to a number of aspects of music theory. Practical music theory treatises capture key points of development in this trend, wherein different exemplification strategies are used to achieve specific theoretical and pedagogical results. Although these developments do not necessarily follow a linear trajectory, it is clear that theorists approached exemplary content in increasingly systematic ways for didactic purposes that aided understanding, supported theoretical points, and integrated music theory more closely with musical performance. This thesis contends that these trends in exemplarity are shown in a highly developed form in the notational treatises of Johannes Tinctoris. His notational works show approaches that can be translated into ‘models’, demonstrating carefully considered approaches that extend the techniques evidenced in earlier theoretical works. The degree of rigour in his texts has long been recognised, but never explored fully in relation to his musical examples. It is this contention that forms the basis of Part Two: how does Tinctoris use musical examples to create a coherent theoretical whole?

PART TWO

Part Two

Introduction

In Part One of this thesis, I surveyed and examined a number of key developments and changes in scholarly reading practices, alongside developments in musical notation and music-theoretical topics to better understand how readers might have engaged with different types of musical notation, particularly in the context of theoretical texts. Part One also considered some of the changes in approach towards exemplary content in music theory treatises from before 1100 until Tinctoris's time, highlighting the different uses of such content in a variety of music treatises, and establishing an understanding of early forerunners to Tinctoris's exemplification techniques.

Chapter Two has demonstrated that the complex text-image-reader relationship formed in music theory manuscripts, as distinct from treatises on other subjects, led to a range of different approaches being taken. It would seem that there was a general trend towards increasing specificity in the choice of exemplary content, suggesting that examples became increasingly viewed as an integral part of the theoretical 'whole', something Tinctoris's texts would support, though this trend is far from being a straightforward linear progression. In some cases, the examples in these texts changed over time, with later sources including different examples altogether, whilst retaining largely identical texts.

By the thirteenth century, approaches towards musical exemplarity had changed. Musical examples came to function as integral parts of the theoretical text with increasing frequency, as evidenced by the treatises of the *musica mensurabilis* complex. The perceived legitimacy of practical music theory as an intellectual discipline, analogous with significant changes in scholarship practices, required exemplary content of a different sort. The apparently ever-evolving nature of notational and discant practice meant that the authoritative texts of Boethius, Ptolemy and other texts of the *musica speculativa* tradition, widely acknowledged as the foundation of liberal arts study, had little practical or technical relevance. Thus, thirteenth-century theorists such as Johannes de Garlandia and, later, Franco of Cologne made extensive use of musical examples. In Franco's case, many of these were drawn from existing works associated with repertory that was probably popular in Paris, though this is far from certain.¹

Approaches towards musical examples in theoretical contexts continued to develop in the fourteenth century. Marchetto of Padua's *Lucidarium*, one of the key texts investigated in

¹ See Christian Thomas Leitmeir, 'Types and Transmission of Musical Examples in Franco's *Ars cantus mensurabilis musicae*', *Citation and Authority in Medieval and Renaissance Musical Culture*, ed. Suzannah Clark and Elizabeth Eva Leach (Woodbridge: The Boydell Press, 2005), pp. 29–44.

Part One, included examples specifically composed for theoretical demonstration. These examples, though varied to an extent across the surviving sources, retain a reasonable degree of similarity. The reduction in variation between sources, some of which are separated by many decades of historical distance, is indicative of a trend towards tighter authorial controls exerted in exemplar copies for non-text content.²

Alongside this reduction in variation, fourteenth-century treatises dedicated to practical music adopted new pedagogically-focused approaches that show the important status accorded to examples by some theorists in the formation of the theoretical ‘whole’. Throughout the *Lucidarium*, the theoretical focus of the examples can be seen clearly, albeit often within slightly larger musical contexts of a lengthy example that extend beyond the strict requirements of the text, expounding the precept in an ‘active’ manner. Similar approaches can also be seen in the so-called Berkeley treatises.

Thus, techniques of exemplification clearly changed radically across the Middle Ages, with a general trend towards increasing theoretical specificity in the exemplification strategies adopted to support theoretical discussions. Part Two demonstrates that Tinctoris’s texts mark the high point of this trend in the manuscript culture of music theory, and act as a fulcrum for the transition of music theory from manuscript to print.

_____ Before examining the exemplification strategies in Tinctoris’s notational treatises, it is vital to establish a broad outline of the types of examples found in these texts. As will be demonstrated throughout Chapters Three, Four and Five, identifiable patterns of exemplification, akin to strategies or models, apply thematically across Tinctoris’s theoretical oeuvre. To demonstrate the thematic application of such techniques, each chapter will focus principally upon a single exemplification strategy or example type, highlighting the ways that these broad models are adapted to a range of scenarios.

Table 1 outlines the three basic example types found in Tinctoris’s nine notational treatises: ‘graphical’, ‘monophonic’ and ‘polyphonic’.

² An example of this more limited variation is discussed in relation to the exemplification of hexachordal mutation in Chapter Three.

Table 1. Broad classifications of examples in Tinctoris’s nine notational treatises, listed in approximate chronological order.

Treatise	Graphical/Definition	Monophonic	Polyphonic	Total
<i>Expositio manus</i> (c. 1472–1473)	17	14	-	31 ³
<i>Proportionale musices</i> (before c. 1475)	1	-	62	63
<i>De imperfectione notarum musicalium</i> (before c. 1475; after <i>Prop. mus.</i>)	-	69	1	70
<i>De regulari valore notarum</i> (before c. 1475; after <i>De imperf.</i>)	1	36	-	37
<i>De notis et pausis</i> (before c. 1475–1480; after <i>De reg. val.</i>)	5	23	-	28
<i>De alteratione notarum</i> (before c. 1475–1480)	-	15	-	15
<i>De punctis</i> (before c. 1475–80)	-	28	3	31
<i>De natura et proprietate tonorum</i> (6 November 1476)	7	57	5	69
<i>De arte contrapuncti</i> (11 October 1477)	238	1	59	298

This table offers statistical data on the examples used in these texts, showing that the most common type of musical example is that classified as ‘graphical’. One might infer from this statistical data that graphical examples are the most important type of example in Tinctoris’s notational treatises. However, this classification is too broad to account fully for the subtle nuances in the musical examples deployed across a range of theoretical scenarios, and overstates their importance significantly.

Indeed, the sheer number of examples in *De contr.* significantly skews these figures, an issue explored further in Chapters Three and Five. With 298 examples in this treatise alone,

³ This total excludes the three-voice miniature with the text ‘Kyrie die Domine sed leyson dic misere’ found after the conclusion of this treatise in **Br1**. It is probably by a different author and bears no relevance to the treatise, and therefore should not be counted as an example.

more than half of the total number of examples and around 80% of all ‘graphical’ examples in Tinctoris’s notational output are contained within a single treatise, limiting the usefulness of statistical analysis. Thus, a more nuanced examination that considers the examples within specific exemplification contexts is required to understand Tinctoris’s strategies more fully.

Part Two groups these examples according to exemplification strategy rather than statistical categories of Table 1. Such an approach allows for examples that use similar strategies to be considered together, creating the opportunity for meaningful and insightful comparisons to be drawn across his oeuvre, significantly enriching our understanding of the subject.

In comparing examples within more specifically defined theoretical contexts, it has become clear that patterns of exemplification can be identified, acting as ‘models’. These patterns demonstrate a more carefully considered and strategic approach towards musical exemplarity as a key part of the theoretical text, with many of the instances considered in Chapters Three, Four and Five showing a reliance upon musical examples to aid textual brevity.

The three main models found in Tinctoris’s notational treatises are ‘instantiation’, ‘citation’, and ‘extrapolation’. The instantiation model is applied in cases where examples provide specific ‘instances’ of clearly defined theoretical points. Such a classification relates to the material that it exemplifies and to the content of the main text, not to the number of voices in an example. Extensions of instantiation include the technique of ‘projection’, whereby the specific instances described in the text are mapped onto a slightly more extended musical example. However, examples constructed in this manner only contain a small amount of contextual material that serves to frame the specific instance, rather than demonstrate a broader notational practice, distinguishing the practice from the ‘extrapolation’ model.

Tinctoris’s rather unusual practice of citation of passages from pre-existent works to show ‘bad’ examples has been discussed widely in musicological literature.⁴ The citation exemplification model used in these cases appears in a range of texts and theoretical scenarios. This model is often deployed in conjunction with the two other principal exemplification models to form complex pedagogical units, where an instance is defined, and then examples of bad practice are provided, before the opening instance is extrapolated into a larger polyphonic context. Often such citations are ‘context-critical’, providing a critique of an ‘erroneous’ contemporary practice as part of a broader exemplification strategy.

⁴ See, for example, Bonnie J. Blackburn, ‘Did Ockeghem Listen to Tinctoris?’, *Johannes Ockeghem: Actes du XIe Colloque international d’études humanistes*, ed. Philippe Vendrix (Paris: Klincksieck, 1998), pp. 597–640.

The extrapolation exemplification model centres on the placement of a distilled theoretical point within a semi-realistic musical context. This model applies mostly to the newly composed polyphonic miniatures found in the later stages of some of Tinctoris's texts, notably *De arte contrapuncti*. These examples serve to show a scenario in which a theoretical point might be found in practical sources, building upon the simple definitions laid out earlier in the treatise. The distilled instance is extrapolated and presented within a larger context, often requiring more detailed understanding of the text and musical practice, challenging the reader to align multiple mensural polyphonic parts.

Before examining these models in detail in Chapters Three, Four, and Five, a brief outline of the types of exemplary content found in each treatise is necessary, establishing further subdivisions of exemplary material. To further establish common themes across Tinctoris's treatises, these will be ordered by links in content, rather than likely chronology.

Expositio manus

Tinctoris's *Expositio manus* is perhaps his best-known 'elementary' treatise. Its exhaustive treatment of theory pertaining to the Guidonian Hand makes it one of the most comprehensive treatises on the topic. The treatise is noteworthy in a number of respects, providing insights into the overlapping conceptual layers of hexachordal theory, and is furnished with a wealth of musical examples from the graphical and monophonic classifications outlined in Table 1.⁵

Rather unusually in Tinctoris's output, a significant number of diagrammatic examples are deployed, forging interesting text–example relationships.⁶ These account for around half of the 'graphical' examples found in the treatise, appearing mostly in the opening chapters. Diagrams include the Hand with solmisation syllables attached to the joints, a table showing the overlapping hexachords of the Gamut, and figures showing the twenty positions divided into pitch 'classes'. In many cases, they summarise points made in the text, providing a diagram that could be memorised more easily than the extended lists of the main text. The other examples in the *Expositio manus* are best classified as 'monophonic', with most of these staff-based examples demonstrating hexachordal mutations, a topic that has a relatively mixed exemplification history.⁷

⁵ Given the focus upon aspects of plainchant practice, polyphonic examples would not have been especially relevant or appropriate.

⁶ These are explored more fully in Chapter Three.

⁷ On this topic, see Chapters Two and Three.

De natura et proprietate tonorum

Tinctoris's treatise on mode has been much discussed in modern musicological scholarship.⁸ Although best known for its enigmatic statements relating to the identification of modes in a polyphonic context from the Tenor, this treatise offers a wealth of monophonic examples, notated in unmeasured square full notation. In some cases, these examples are presented in groups, perhaps best characterised as example 'clusters'.

There are 69 examples in this treatise, most of which are monophonic. Intriguingly, five polyphonic examples are included, though these are strictly note-against-note counterpoint examples, distinguishing them from the polyphonic citations or newly composed miniatures found in the *Proportionale musices* and *De arte contrapuncti*. For the most part, these examples serve to demonstrate specific types of 'tone' or demonstrate the features that a reader should use to identify specific tones within a melodic context, showing evidence of the instantiation exemplification model. Although this treatise makes use of a smaller variety of examples types than some of Tinctoris's other texts, probably due to the more technically specific subject matter under discussion, the exemplification strategies are noteworthy, with elements of the theoretical text being projected into the musical notation, both in monophonic and note-against-note contexts.

De imperfectione notarum

Tinctoris's treatise on imperfection, along with the treatise on alteration, is one of the most puzzling texts under discussion in this thesis. The complexity of its examples leaves a deceptively straightforward notational treatise as a tantalising insight into the conceptual function (and possibilities) of fifteenth-century mensural notation. The mensural complexity on display, supported by rather limited textual explanation, seemingly suggests fairly expert readers with prior knowledge of the principles of imperfection, alteration and musical dots as its primary readership, with examples regularly extending beyond common practical uses.⁹

As with many of his other texts, Tinctoris attempts to codify the notational topic into a number of general rules, of apparently increasing complexity. Each of these is accompanied by at least one example, though in some cases a series of examples are provided to demonstrate increasingly specific and complex aspects of a precept. In all but one instance, Tinctoris uses

⁸ See Jeffrey Dean, 'Okeghem's Attitude Towards Modality: Three-Mode and Eight-Mode Typologies', *Modality in the Music of the Fourteenth and Fifteenth Centuries*, ed. Ursula Günther, Ludwig Finscher, and Jeffrey Dean (Musicological Studies & Documents 49; Neuhausen-Stuttgart, 1996), pp. 203–246.

⁹ The interrelationships between this treatise and those on alteration, musical dots, and mensurations are explored more fully in Chapter Three.

monophonic examples that were almost certainly composed specifically for inclusion in this text.¹⁰

The content and construction of these examples are discussed at length in Chapter Three, as they offer some of the most interesting cases of the instantiation model of exemplification. Although the examples were clearly skilfully composed, there are some instances where the ordering of Tinctoris's general rules is called into question, notably when an aspect of imperfection practice that is crucial to realising the notation accurately is not covered until much later in the treatise.

De regulari valore notarum

Tinctoris's *De regulari valore notarum* is an often-neglected treatise that is closely linked to the treatises on imperfection, alteration and musical dots, forming complex webs of interdependency. It contains a total of 70 examples, almost all of which are monophonic. For the most part, these monophonic miniatures use the instantiation model of exemplification, though some of the more extended instances use its projection variant, presenting a slightly more exploratory context.

The examples in this treatise, all of which are constructed in a similar fashion, tend to accompany specific points relating to mensurations or mensural combinations. Many examples presume prior knowledge of imperfection, alteration, and musical dots, further emphasising the interdependence between the mensural treatises, a topic discussed more extensively in Chapter Three. Most, but not all, of the examples are highly similar to those of *De imperf.*, *De alt.*, and *De punct.* One particularly interesting approach is the use of superposed mensuration signs to allow a single example to be realised in two different ways, showing an economical usage of exemplary material.¹¹

De alteratione notarum

Tinctoris's treatise on alteration, his shortest text, is perhaps best considered as a companion treatise to the lengthy *De imperf.*, working alongside the treatises on mensurations and musical dots. It consists of fifteen musical examples, all of which consist of only a single voice, spread across just two chapters. Although Table 1 lists all of the examples in this treatise as monophonic, the first example of treatise is type that is unique in Tinctoris's theoretical output.

¹⁰ This anomalous instance is discussed in the latter stages of Chapter Four as it is a voice part from one of Tinctoris's own (possibly lost) polyphonic works.

¹¹ This example is discussed in the latter stages of Chapter Three.

The prologue includes a citation from a voice part of an apparently lost setting of Tinctoris's *Missa Nos amis*.¹² This example is used to explain the motivating factor behind the composition of the treatise, addressing the discussion to 'Guillelmo Guinandi', the choirmaster of a student who supposedly criticised Tinctoris's notational practice.¹³ It is the only instance across Tinctoris's entire theoretical output where he cites a passage from one of his own standalone compositions, and indeed, is the only instance of a notated example appearing in the prologue to any of his treatises.

Aside from this case, the exemplification strategy is highly similar to that of *De imperf.* The fourteen newly composed examples all adopt the instantiation exemplification model (and its variants), and each general rule is accompanied by at least one example, though in some cases two examples are used to capture the full scope of the general rule. Many of the examples in this treatise are slightly more extended than those of *De imperf.*, capturing the process of alteration under many different mensurations within the context of a single example rather than a series of shorter miniatures, demonstrating a subtly different approach, explored more fully in Chapter Three.

De punctis

For non-specialists, the notion of a whole music theory treatise dedicated to the musical dot seems somewhat alien. However, Tinctoris's treatise highlights the notational subtlety of the fifteenth-century mensural system, particularly in regard to imperfection and alteration, capturing subtleties that greatly inform our understanding of the conceptual function of notation at this time. In addition to discussing the three main functions of musical dots (addition, perfection, division), the treatise incorporates examples of how these dots would affect the levels of imperfection and alteration at work in mensural notation, and the ways that their function was implied by notational context. Dots that indicate particular structural points, such as pause markings, repeat marks and, in one source, points of take-up, are also discussed in the final stages of the text, though in somewhat more cursory fashion.

The treatise contains 31 examples, 28 of which are monophonic. The other three are polyphonic examples that occur at the very end of the treatise, accompanying discussions of

¹² Authorship issues are explored in Reinhard Strohm, *The Rise of European Music: 1380–1500* (Cambridge: Cambridge University Press), 1993, p. 531. See Chapter Four, n. 93.

¹³ 'Guillelmo Guinandi' must refer to Antonius Guinati, 'abbot' or master of the Milanese Ducal chapel from 1472–1492. The implications of this dedication upon the dating of the treatise are explored in a commentary note to the *Early Music Theory Online* edition and translation. See <http://earlymusictheory.org/Tinctoris-beta/texts/dealterationenotarum/#pane0=Edited&pane1=Translation> (accessed 30 October 2015).

dots of structural indications. Only the first two of these three are preserved across all extant sources of Tinctoris's text, with the discussion and example of points of take-up only surviving in **G**. This final example does not align with the discussion of the theoretical text, evidence that supports the attribution of this chapter to another, hitherto unidentified, author.¹⁴

The monophonic examples that account for all but these final three examples are similar in content and construction to those found in the treatises on imperfection and alteration, establishing thematic links across treatises. Throughout these examples, the instantiation model of exemplification is adopted, with content from the highly prescriptive text being presented in notation, often matching the order of the main text.

De arte contrapuncti

Tinctoris's counterpoint treatise is undoubtedly his best-known work. This meticulously detailed text is one of the most valuable guides on late fifteenth-century counterpoint, and includes, for the first time, an extensive discussion of the proper regulation of dissonance in counterpoint. The sheer size of this treatise means that it accounts for more than half of the total number of examples found in Tinctoris's notational treatises, and thus offers one of the richest and varied sources for the present study.

The treatise is divided, somewhat unequally, into three books: Book I is the longest and presents a systematic exposition of concords; Book II begins with discords before moving onto more complex issues pertaining to the composition of counterpoint; Book III is the shortest and deals with matters of style in counterpoint through eight general rules, accompanied by lavish musical examples. Although this treatise has the largest number of extended polyphonic miniatures, these are almost entirely concentrated in Books II and III. Book I and the early parts of Book II see the most common use of very short examples detailing individual intervals, often in isolation, offering short 'instances' resembling musical notation. Book II is also one of the first detailed accounts of dissonances in a contrapuntal context, beginning on a similar path to Book I.¹⁵ Tinctoris also includes citations from pre-existent musical works, meaning that multiple exemplification models are at work in close proximity to form more complex pedagogical units.

De contr. also includes numerous polyphonic miniatures, many of which contain textual allusions to people or places associated with either Naples or Tinctoris. Perhaps the best-known

¹⁴ This example, and its problematic authorship, is discussed in Chapter Five.

¹⁵ This aspect of Book II is discussed in Bonnie J. Blackburn, 'On Compositional Process in the Fifteenth Century', *Journal of the American Musicological Society*, 40/2 (1987), pp. 242–246.

example of this type is ‘Beatissima Beatrix’, a motet presumably dedicated to Princess Beatrice, though additional references to St. Beatrice can be interpreted. Although clearly conceived as theoretical examples, these pedagogical miniatures demonstrate Tinctoris’s compositional skill, particularly when the theoretical restrictions imposed by the text are considered. These examples distil the theoretical point and present one or more instances within a miniature polyphonic context, bringing a practical relevance to the theoretical discussions. For the most part, Tinctoris includes three-voice miniatures, though larger polyphonic textures are used sporadically throughout the treatise.

Proportionale musices

Tinctoris’s treatise on musical proportions is another of his best-known treatises, second only to *De contr.* The treatise has been the focus of much scholarly investigation, due to its highly unusual discussion of musical proportions in rhythmic terms rather than the more traditional intervallic context. As in *De contr.*, Tinctoris deploys citations from pre-existent compositions (mostly from apparently well known works), along with newly composed examples. Such citations often demonstrate examples of bad practice, which are then corrected by Tinctoris’s text and his own pedagogical miniatures.

Rather unusually, *Prop. mus.* does not make use of any monophonic examples, even for foundational points, with preference being given to two-voice polyphonic miniatures for the majority of points. These miniatures tend to begin in equal numbers in both parts, before a proportional change is deployed in the Discantus: in almost all cases, the Tenor acts as a reference voice. These miniatures, along with a number of other basic topics, such as mensuration, that are omitted or discussed much later than one would expect, are discussed extensively in Chapter Five.

Tinctoris makes use of the extrapolation model in this context, as his text tends to discuss the proportional relationships in abstract mathematical terms, leaving the demonstration of its musical application to the example. This approach forges a different kind of text–example relationship from some of his other texts. Given that this is probably an early text from his Neapolitan period, the contrasts in exemplification approaches are significant. Tinctoris’s ground-breaking approach to this topic may have been spawned by an interest in the ways in

which improvisational practices from instrumental performance could be preserved in a notational form.¹⁶

With the exemplification models and exemplary content outlined, a more detailed examination of the models of exemplification used across Tinctoris's output can be undertaken. Chapter Three will examine Tinctoris's use of the instantiation model (and its variants), using case studies from a range of Tinctoris's theoretical texts. Chapter Four will assess the exemplification of citations from pre-existent works, focussing primarily upon *De contr.* and *Prop. mus.*, though passing reference will be made to *De imperf.* Chapter Five considers the exemplification strategies associated with Tinctoris's own pedagogical miniatures, examining the extrapolation model in detail.

¹⁶ The similarities to the instrumental duos attributed to Tinctoris in the Segovia manuscript (E-SE Ms. s. s) are striking.

Chapter Three: Exemplification through Instantiation

As outlined in the introduction to the second part of this thesis, it is clear that Tinctoris made use of a wide range of example types across the notational treatises covered in this study. For each type of example, Tinctoris deploys a specific exemplification strategy, the precise details of which can vary on a case-by-case basis. In this chapter, these more subtle variations will be explored in detail, and combined with the discussions of Part One, demonstrating that Tinctoris adopted some techniques, namely those associated with ‘instantiation’, in rather interesting and somewhat unprecedented ways.

Instantiation and Exemplification

Thus far, the instantiation model of exemplification has been defined as being applied when an example demonstrates a single ‘instance’ of a theoretical point, with very little contextual information. For the present discussion, a more detailed definition is required to capture the full range of exemplification achieved through this model.

Instantiation occurs when the content of the theoretical text is presented in musical notation (or another demonstrative form) in such a way that it provides an ‘instance’ of a theoretical point. Although instantiation is applied in a number of ways across Tinctoris’s oeuvre, its most common usage is to demonstrate simple theoretical points in musical notation, providing ‘graphical’ definitions of foundational precepts, often in the early stages of a treatise. However, this model is also used when demonstrating such precepts in a larger musical context, though this context is sufficiently limited to avoid contextual ‘clutter’, as will be discussed later in this chapter.

In most cases, the text relevant to these examples will describe a specific point, such as a musical interval or particular notational symbol, and will be followed by an example providing a specific instance; in effect, the theoretical text is translated directly into a graphical form. Thus, examples using the instantiation model in its simplest form do not contain (or require) any superfluous musical material to contextualise a particular theoretical point. Instead, the example, which often resembles musical notation, functions as a kind of graphical definition, translating the theoretical text into a targeted and tightly focused musical explanation. More advanced variants of this type

of exemplification will be discussed in this chapter, including cases where instantiation is applied to create a somewhat more ‘realistic’ musical context, forming different text–example relationships.

Graphical Examples: Definition through Instantiation

Exemplification through instantiation is most commonly linked to examples falling into the ‘graphical’ category of example types. Examples of this type are often used at the beginning of treatises, or discussions of topics, to define points in a fashion that avoids lengthy text-based explanations.¹ Many of these examples are analogous with dictionary definitions, giving the meaning of terms or symbols without exploring their wider application.

Book I of *De arte contrapuncti* provides the most plentiful source of graphical examples resembling musical notation, with each consonance being defined in a painstaking fashion. Tinctoris’s methodical progression throughout Book I demands that each concord (and its associated contrapuntal motions) should be properly explained before even the simplest counterpoint is attempted, evidencing his belief that a technical grounding was required before complex practices were considered. For most concords, Tinctoris describes the content of the graphical example with such precision that almost every piece of information in the theoretical text is mapped into the example, a technique that is rarely seen applied with such regularity in contemporary texts on counterpoint.

One such example can be found in I.iv, a chapter that discusses both types of third, describing them as ‘imperfect’ and ‘perfect’ (minor and major in modern terminology), providing an example for each (see Figure 23). For the imperfect third, Tinctoris writes:

Semidytonus est concordantia ex mixtura
duarum vocum semitonio et tono abinvicem
distantium constituta, sicut Re Dsolre et Fa
Ffaut gravis, ut hic:

[EXAMPLE - Figure 23]

The semidytonus is a concord constructed out
of the mixture of two pitches distant a
semitone plus a tone from one another, such
as Re in D sol re and Fa in low F fa ut, as
here: [EXAMPLE - Figure 23]

¹ On lengthy text-based descriptions in earlier theory, see Rob C. Wegman, ‘The World According to Anonymous IV’, https://www.academia.edu/2339629/The_World_According_to_Anonymous_IV (accessed 21 October 2014), print publication forthcoming.

<p>Diciturque “semidytonus” a “semus”, idest “imperfectus”, et “dytonus” quasi imperfectus dytonus. Hinc uno tono ac uno semitonio tantummodo constans vulgariter “tertia imperfecta” appellatur.</p>	<p>And it is called the “semidytone” from “semus”, that is, “imperfect” and “dytone” as if an imperfect dytone. Hence, consisting of one tone and one semitone only, it is ordinarily called the “imperfect third”.²</p>
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Figure 23. Tinctoris, *De contr.*, I.iv.1–4. Example showing an imperfect third, matching the prescriptions of the main text (E-VAu 835, fol. 84).

Tinctoris’s text describes the span of the imperfect third as being made up of two notes separated by a semitone and a tone, bringing a sense of specificity to his point by including note labels that articulate the interval in the main text. These notes, re D sol-re and fa F fa-ut grave, are included in all sources for this treatise, forging strong links between the text and musical example (Figure 23).

In this example there are two elements of the theoretical text that have been mapped, perhaps even translated, into the musical notation: the first is the use of the interval of a minor third, as required by the theoretical text; the second is the use of the specific solmisation content in the text. The use of such specific instantiation for exemplification purposes was not widespread in Tinctoris’s time, and was certainly not applied regularly to methodical expositions of each concord.³

By adopting this exemplification strategy, Tinctoris forges a ‘symbiotic’ relationship between the text and example. Such a relationship increases the didactic

² Johannes Tinctoris, *De contr.*, I.iv.1–4., ed. and trans. Jeffrey J. Dean and Ronald Woodley, *Early Music Theory Online*, <http://earlymusictheory.org/Tinctoris/texts/deartecontrapuncti/#pane0=Edited&pane1=Translation> (accessed 17 August 2015). All subsequent references and translations from Book I of *De contr.* will be taken from this source. Editions of Books II and III will be drawn from Gianluca D’Agostino, *Johannes Tinctoris: Proportionale musices [and] Liber de arte contrapuncti* (Firenze: Sismel, 2008) and equivalent translations from Albert Seay, *The Art of Counterpoint*, Musicological Studies and Documents, 5 (Rome: American Institute of Musicology, 1961).

³ Earlier approaches to this material are explored in greater detail in Chapters One and Two. Magister Lambertus’s *Ars musica* includes a similar technique, though in relation to different theoretical material.

usefulness of the example, and defines this concord in both textual and notational forms, giving the reader two ways to understand this point. Indeed, the use of note labels within the main text here is not an isolated instance, with the same practice being used for the definition of each interval (both concords and discords) throughout Books I and II of *De contr.* The consistent application of this approach suggests that it was conceived as a strategy of sorts. Twinned with the repetitious list-like phraseology, this approach suggests that Tinctoris's text could have functioned as a referential guide that the reader could refer back to when interpreting more complex counterpoint in Books II and III, though this does not preclude its use as a teaching text.⁴

In addition to the main elements of instantiation in this example, there is another layer of exemplarity that relates in a broader fashion to the treatise as a whole. Tinctoris's use of void notation for the lowest voice (Tenor) from which the interval is measured, and black-full notation for the counterpoint voice, is a notational practice used throughout the treatise when unmeasured or graphical counterpoint is under discussion. Although this approach was far from original, the use of two different colours helps to distinguish voice parts, and to differentiate the unmeasured examples from those using mensural polyphony to demonstrate contrapuntal practices.⁵

The use of graphical examples is not confined to the treatise on counterpoint, with numerous instances being found in the *Expositio manus*, *De regulari valore notarum*, *De punctis* and *De imperfectione notarum*. As before, these examples are used to provide definitions of musical elements that could not be defined through text-based descriptions in an instructionally useful manner. Although graphical examples are more common in the *Exp. manus*, *De imperf.* offers a particularly intriguing case of instantiation relating to definition-based graphical examples.

In I.ii of *De imperf.*, Tinctoris describes the types of rests used throughout the treatise before deploying them in more extended musical examples. These short examples display many similarities to the figures that introduce clefs in the third chapter of the *Exp. manus*, appearing as in-line graphics. Tinctoris writes:

⁴ See Anna Maria Busse Berger, *Medieval Music and the Art of Memory* (Berkeley & Los Angeles: University of California Press, 2005), especially pp. 111–158. I return to this point in Chapters Four and Five.

⁵ This type of notation is also found in practical sources, perhaps most famously, Du Fay's *Nuper rosarum flores* which includes a mix of void and black-full notation to differentiate *divisi* parts. See I-TRbc 92, fols. 21v–22r. Philippe de Vitry (fourteenth century) also noted this approach in the *Ars nova* attributed to him. His aim was to differentiate the two different functions of red and black notation. Although other theorists adopted similar practices, few applied it with the same systematic meticulousness as Tinctoris.

Et quoniam quattuor sunt istarum quinque notarum quarum cuilibet una singularis pausa est appropriata eiusdem valoris cuius et sua nota, scilicet longa $\overline{\overline{\overline{\text{—}}}}$, brevis $\overline{\overline{\text{—}}}$, semibrevis $\overline{\text{—}}$, et minima $\overline{\text{—}}$, sciendum est quod omnis pausa imperficere potest, imperfici vero non, ut hic:

And since there are four of these five notes to each of which one particular rest is designated, of the same value as that of its note, namely the longa $\overline{\overline{\overline{\text{—}}}}$, the breve $\overline{\overline{\text{—}}}$, the semibreve $\overline{\text{—}}$, and the minima $\overline{\text{—}}$, it must be understood that every rest can imperfect, but cannot be imperfed, as here:⁶

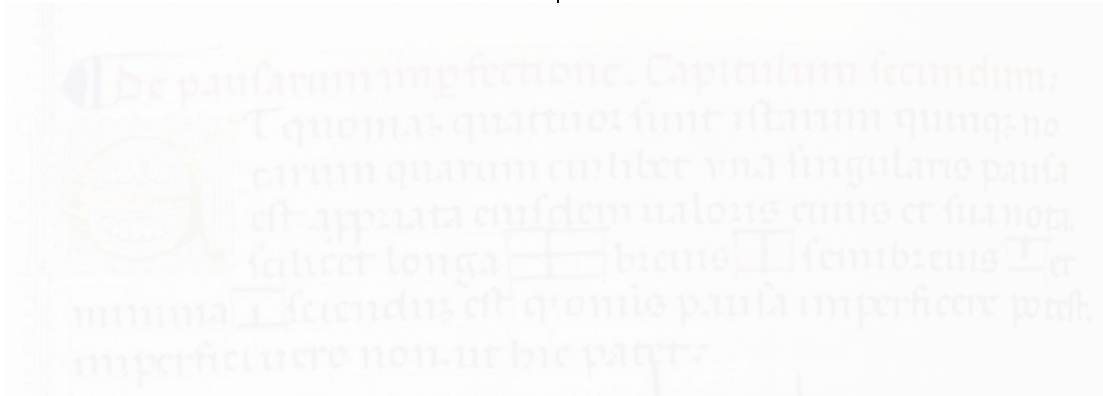


Figure 24. Tinctoris, *De imperf.*, I.ii.2. In-line graphical examples of rests placed on minimal staves (E-VAu 835, fol. 56v).

Adopting an approach that is found in many other treatises, this passage of text is interspersed with four in-line graphics displayed on minimal staves, one for each type of rest used in mensural notation (Figure 24). Each of these graphics is placed directly beside the name of their equivalent note value, drawing clear links between the two elements. However, it should be noted from the outset that their placement on the same visual plane as the main text clearly distinguishes this kind of example from the notated monophonic examples that dominate the non-text content of the rest of the treatise.

Each small graphic is visually distinguished from the text by the use of red ink for the staff lines, required only to show the relative size of each rest. In adopting this approach, Tinctoris provides a graphical definition almost as though it were a text-based one, reducing the level of visual distraction, and potential confusion, that a more extensive diagram could bring. From the perspective of reading, this layout would have allowed the reader to read these symbols with the text in an unbroken fashion, fixing the gaze upon the main body of the text, and allying the notational symbols to their respective durations.

⁶ Tinctoris, *De imperf.*, I.ii.2, ed. and trans. Jeffrey J. Dean and Ronald Woodley, *Early Music Theory Online*, <http://earlymusictheory.org/Tinctoris/texts/deimperfectionenotarum/#pane0=Edited&pane1=Translation> (accessed 16 September 2014). All subsequent references to this treatise will be taken from this edition and translation.

In defining these rests clearly and establishing strong theoretical foundations, one might infer that Tinctoris shows an implicit recognition of the broader needs of the readers who might approach this treatise. Rests would have been familiar to musicians with fairly limited training and feature prominently in a number of the examples throughout the treatise. Thus, Tinctoris does not seem to presume that his readers would have prior knowledge of even the most foundational theoretical precepts, though this can be attributed to Tinctoris's attempts to be as comprehensive as possible. Even so, this would seem to provide evidence for a broader pedagogical structure working across the whole treatise, with Tinctoris probably being keen to support understanding of the more complex issues discussed in the treatise. Graphical definitions of a similar nature are also found in the opening chapter of *De notis et pausis* [On notes and rests], where the five noteshapes that underpin the notation used throughout these texts are defined using minimal staves. This more foundational treatment postdates *De imperf.*, due to internal cross references meaning that *De reg. val.* must have been written after *De imperf.*, and *De not. et paus.* must have been composed after *De reg. val.*⁷ However, Tinctoris's apparent concern for readers with little prior knowledge does not extend to all of the examples in the treatise on imperfection, as outlined later in this chapter (see Figure 41).

Graphical and Diagrammatic Examples: Summation through Instantiation

The discussions thus far have focused upon examples containing only a small amount of graphical material. However, Tinctoris makes use of the instantiation model (and more complex variants) for a range of graphical and diagrammatic examples, including those that demonstrate more complex theoretical points and concepts. One such diagrammatic example of this type can be found in the *Exp. manus*, the treatise containing the majority of Tinctoris's diagrammatic examples, largely due to its exploration of the conceptualisations of musical space, rarely encoded notationally.

The *Exp. manus*, perhaps best classified as an 'elementary' treatise, focuses on topics pertaining to the Guidonian Hand.⁸ In the opening chapters, Tinctoris makes use of a number of diagrammatic examples that demonstrate clear evidence of a kind of

⁷ On this chronology see Table 1 of the introduction to Part Two.

⁸ This classification is based upon the foundational contents of the treatise and not its quality. In a recent keynote address, Stefano Mengozzi suggested that this treatise is not practically minded, giving all of the 'tools' to understand Guidonian solmisation without instructions to apply them in practice.

mapping from the main theoretical text. This process is demonstrated in the third example from the *Exp. manus*. Tinctoris uses this diagram to show the different *claves* (note names⁹) found within the gamut, and maps these in a fashion that provides a graphical representation of the musical space described in the text.

Tinctoris lists each of the note names found within the gamut in an exhaustive fashion, using repetitious phraseology throughout the list.¹⁰ These are discussed in ascending pitch order, beginning with the lowest clef and ending with the highest clef, as is common with other aspects of the gamut in the preceding chapter. The text that immediately follows this list clarifies the appropriate range groupings: ‘graves’, ‘acute’, and ‘superacute’. These range classifications are also used in the example (Figure 25), in keeping with the diagram showing the *loci* in the previous chapter of the treatise (see Figure 40).¹¹

Tinctoris’s text describes each of the clefs in some detail and covers one of the foundational points a reader would need to understand from the very beginning of their musical education to read musical notation and conceptualise pitch-space. A noteworthy aspect of this discussion is that the accompanying diagrammatic example (Figure 25) almost entirely duplicates the text, distilling the key theoretical information into a single diagram.

The main elements of the theoretical text (subject, clef labels, position labels [including solmisation syllables], pitch-space classifications, and the order of pitches) have all been mapped into this example.¹² The pitch classifications placed in semicircles can be read in conjunction with *claves* to form a terminological pair for each pitch area. In effect, the reader could have consulted the diagram alongside the theoretical text to aid full understanding, adopting a kind of ‘concurrent’ reading. The two active elements in the treatise, example and text, work together to form a quasi-symbiotic relationship in which both aspects gain additional clarity. The addition of labels on the right-hand side of the diagram brings further clarification to note names that are duplicated in more than one octave. Tinctoris applies a similar exemplification

⁹ Although ‘*claves*’ is often translated as ‘clef’, in this context, Tinctoris refers to the ‘clef’ of each note, i.e. its note names. Thus, I have adopted an alternative here.

¹⁰ For the full chapter text, see Tinctoris, *Exp. manus*, iii, ed. and trans. Ronald Woodley, online, http://www.stoa.org/tinctoris/expositio_manus/expositio_manus.html (accessed 15 September 2014).

¹¹ These terms, though probably not those used by singers in rehearsal, were common in music theory treatises.

¹² Diagrams of this sort would have familiar to most readers of music theory treatises, and thus Tinctoris builds upon established theoretical traditions here.

strategy to all examples of this type throughout the treatise, a point I return to later in this chapter.



Figure 25. Tinctoris, *Exp. manus*, Ch. 3. Diagram showing the *claves* in ascending pitch order, with pitch-space labels (E-VAu 835, fol. 5v).

The variant of instantiation that can be identified here is different from the short graphical examples of Figure 23 and Figure 24 not only in the type of example used, but also in its function within the theoretical whole. Instead of acting to demonstrate a specific point in a fashion that a reader might encounter it in practical sources, this diagram serves to distil the text into a figure of conceptualised musical space. Therefore, its function is more summative than demonstrative, forming a subtly different relationship with the theoretical point.

Thus, Tinctoris's diagram translates a textual description into an easily-recalled graphical map that probably would have aided the navigation of the conceptual musical space, much like the Hand.¹³ There is significant overlap between this map and other similar diagrams in the treatise, bringing a sense of homogeneity to the discussion of the interlocking conceptual layers of the Hand. In addition to aiding memorisation,

¹³ A similar idea is proposed for the function of the Guidonian Hand in Stefano Mengozzi, *The Renaissance Reform of Medieval Music Theory: Guido of Arezzo between Myth and History* (New York: Cambridge University Press, 2010).

Tinctoris's diagram may implicitly recognise the needs of readers who might not have already internalised such foundational material, constructing the text and diagram in a fashion that would allow meaning to be extracted in a number of ways.

Although this example fulfils a 'summative' function, the instantiation model of exemplification is still at work. As outlined above, the theoretical text that precedes this diagram is largely duplicated by the content of Figure 25. Thus, each of the *claves* described in the text is presented as an instance in the figure, forming a diagram that synthesises the instantiation of each element.¹⁴

Mapping in a broader musical context: Instantiation through Projection

The types of instantiation that have been surveyed so far have all related to graphical examples, most of which are very short and do not establish a wider musical context for a particular theoretical point, or function in a summative sense to draw together an exploration of a specific concept. There is, however, a further variant, namely 'projection', that often applies to slightly more extended examples.

The projection variant is characterised by the placement of content from the text within a musical example that may contain a small amount of notated material that is not directly related to the theoretical point. This extra material serves to frame the theoretical point in a slightly more 'realistic' musical context. It is often used in monophonic examples presented after those outlining foundational points, building upon such points to explore more complex scenarios that can only be demonstrated in a slightly more extended context. However, it is distinct from the extrapolation model discussed in Chapter Five, as the primary focus of projection-based examples remains upon the demonstration of a specific instance and not on the exploration of a broader practice.

Tinctoris makes extensive use of projection across both books of *De imperf.* The third notated example of this treatise provides an ideal case study for this exemplification variant, particularly as it relates directly to the discussions of rests explored in Figure 24. Tinctoris writes:

¹⁴ Similar issues are explored in Figure 40.

Hinc quot et quales notas possunt longa, brevis, semibrevis, et minima imperficere, tot et tales possunt earum pause. Sicque pausa longe maximam, pausa brevis maximam et longam, pausa semibrevis maximam, longam, et brevem, pausa minime maximam, longam, brevem, et semibreve imperficere poterit, ut hic patet:

Hence, however many and whatever kind of notes a longa, a breve, a semibreve, and a minim can imperfect, so many and such kind can their rests. And so a longa rest will be able to imperfect a maxima; a breve rest a maxima and longa; a semibreve rest a maxima, longa, and breve; a minim rest a maxima, longa, breve, and semibreve, as is clear here.¹⁵

Tinctoris's text clearly describes specific rhythmic scenarios that demonstrate some of the ways that rests can imperfect larger note values. The rhythmic scenarios described in the text, and presumably to be demonstrated, are as follows: a longa rest to imperfect a maxima; a breve rest to imperfect a maxima and a longa; a semibreve rest to imperfect a maxima, longa and breve; a minim rest to imperfect a maxima, longa, breve and semibreve. A consideration of the example that Tinctoris includes (Figure 26) demonstrates the careful projection of these rhythmic patterns into musical notation, with added pitch content to establish a 'realistic' musical context.



Figure 26. Tinctoris, *De imperf.*, I.ii.3. Example demonstrating imperfection by rests, working through descending mensural levels (E-VAu 835, fol. 56v).

Figure 26 opens with four maximas, each of which is followed by a rest. These rests descend through the mensural levels, beginning with a perfect longa rest and ending with a minim rest.¹⁶ This systematic descent through the mensural levels means that Tinctoris has demonstrated the application of each of the rest types described above in an easy to follow didactic order. After these four maximas, there are three longas, which are followed by longa, breve, and semibreve rests respectively. This demonstrates the

¹⁵ Tinctoris, *De imperf.*, I.ii.3.

¹⁶ In this case, Tinctoris constructs his example in all-perfect mensuration, offering the maximum number of possibilities across all mensural levels, perhaps showing a degree of 'built-in' pedagogical flexibility.

next mensural level of rests, continuing the carefully constructed rhythmic scenario, projecting the next part of the text into this context. The example concludes with three additional notes that complete the final modus group, articulating the all-perfect mensural structure of the example and presenting imperfection possibilities on all mensural levels in a pedagogically controlled fashion.

Tinctoris's example shows evidence of content being 'mapped' from the text, though in a subtly different form to the aforementioned examples. Each aspect of the theoretical text is presented in the musical notation in a seemingly didactically useful manner, framed in a realistic context with added pitch content. The addition of pitch content has no direct bearing on the main theoretical point, but situates the rhythmic point within a more realistic musical context than a simple graphical definition would have done. Thus, the foundational precept, imperfection *a parte post*, is projected into a more 'realistic' context, enhancing the practicality of the demonstration. This approach also aids a kind of economy in exemplary content, whereby Tinctoris needs only to state a fairly general rule and provide a single example that incorporates instances of this precept in a number of scenarios.

Although the musical notation plays an important role in the theoretical whole, the importance of the text cannot be underestimated. Without the specific content outlined in the text, the text–example relationship would be significantly altered. Thus, Figure 26 shows an instance where it is clear that the text and example work in a quasi-symbiotic relationship, contributing significantly to the clarity of demonstration and, by implication, the reader's understanding.

Such logical ordering underpins the construction of many examples of this type, with some cases following the order of the theoretical text closely. One particularly significant instance of matching orders in the text and example is found in *De reg. val.*¹⁷ Tinctoris uses this type of projection in his discussion of different mensural combinations. This passage begins in the fourteenth chapter and runs through to the conclusion of the treatise, describing a total of sixteen possible mensural combinations. Eloy D'Amerval's *Missa Dixerunt discipuli* is a composition that makes use of all

¹⁷ The relationships between *De imperf.*, *De reg. val.*, *De alt.*, and *De punct.* are intriguing. Tinctoris seemingly assumes a certain degree of prior knowledge of all four.

sixteen combinations, and is one of the only other places to provide such an exhaustive account of this topic.¹⁸

In Chapter 17, Tinctoris describes the second of these sixteen mensural combinations. The whole chapter is provided below.

Secunda species compositionis fit ex modo maiori perfecto, modo minori imperfecto, tempore perfecto, et prolatione maiori. Itaque in ea valet regulariter maxima tres longas, sex breves, decem et octo semibreves, et quinquaginta quattuor minimas; longa duas breves, sex semibreves, et decem et octo minimas; brevis tres semibreves et novem minimas; ac semibrevis tres minimas, ut hic patet:	The second species of composition is made up of perfect major modus, imperfect minor modus, perfect tempus, and major prolation. And so in it the maxima is regularly worth three longas, six breves, eighteen semibreves, and fifty-four minimis; the longa two breves, six semibreves, and eighteen minimis; the brevis three semibreves and nine minimis; and the semibrevis three minimis, as is clear here. ¹⁹
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The text here provides a systematic exposition of the numerical properties of the constituent parts of each mensural level. In outlining the numerical relationships between note values, Tinctoris presents his point in relative abstraction, and clearly highlights the relationships in easily understood terms before musical aspects are considered. This type of text-based description is perhaps somewhat analogous with the ‘tree’ type diagrams that many fourteenth-century theorists favoured when highlighting note value relationships across mensural levels, a point to which I will return later.²⁰ Tinctoris’s decision to progress in the logical order from the highest mensural level to the smallest in the numerical descriptions follows the order of the initial theoretical statement. The careful attention to the ordering of the exposition of theoretical material also extends to the musical example (Figure 27).

¹⁸ On Eloy’s mass, see Rob Wegman, ‘Petrus de Domarto’s “Missa Spiritus almus” and the Early History of the Four-Voice Mass in the Fifteenth Century’, *Early Music History*, 10 (1991), pp. 250–252. Petrus de Domarto’s *Missa Spiritus almus* also includes a number of mensural combinations, but does not exhaustively treat these combinations in the same way as Eloy does in musical terms, or Tinctoris in theoretical terms.

¹⁹ Tinctoris, *De reg. val.*, xvii.2–3, ed. and trans. Jeffrey J. Dean and Ronald Woodley, *Early Music Theory Online* <http://earlymusictheory.org/Tinctoris-beta/texts/deregularivalorenorum/#pane0=Edited&pane1=Translation> (accessed 26 October 2015).

²⁰ Such a diagram was described by Jerome of Moravia as ‘arbor’ of Magister Johannes de Burgundia. One particularly intriguing tree diagram is found in the anonymous *Ars cantus mensurabilis per modus iuris*: see note 23.



Figure 27. Tinctoris, *De reg. val.*, xvii.2–3. Example demonstrating Tinctoris's second mensural combination (E-VAu 835, fol. 51v).

After the mensuration signature and modus lines, Tinctoris places a maxima, followed by three longas, two breves, two semibreves and three minims. The example concludes with a breve followed by a longa, completing the modus unit of the example as required by the signatures. By starting with larger note values and working down through the mensural levels to smaller ones, Tinctoris matches the order of the text and facilitates 'concurrent' reading of the text and example. Each of the notes is presented with the appropriate number of subdivisions for its like value: the maxima is followed by three longas (perfect major modus) and the longa followed by two breves (imperfect minor modus), thus articulating the theoretical text in a notational fashion. In following this order, the theoretical content of the text is mapped into musical notation in a close fashion, effectively translating it into a musical form. The addition of pitch content for a purely rhythmic theoretical point creates a more 'realistic' context, fusing the specificity of the text with mensural notation.

Similar types of example are found in abundance in this treatise, and thus Tinctoris's approach towards material of this sort was clearly well thought out. In such a short example, Tinctoris makes use of all the mensural levels and draws them together into a cohesive miniature. This creates a 'controlled environment' through which the reader could understand and engage with his theoretical point, further confirming the important status accorded to musical examples in Tinctoris's theoretical texts. Such an environment provides a sufficiently detailed demonstration that aids understanding without obscuring the main point with contextual clutter.

Tinctoris's decision to adopt this approach and omit a 'tree' diagram showing the relationships between note values is significant. Tree diagrams were a common type of

example for this topic and can be found in numerous treatises.²¹ One of the most interesting formations is found in Anonymous XI's treatise (fifteenth century), *Tractatus de musica plana et mensurabili*.²² The anonymous theorist presents note value relationships in a circular formation, showing the various combinations of perfect and imperfect quantities on each mensural level within a single diagram rather than a series of near-identical figures (Figure 28). This, in its own way, shows economic use of examples.



Figure 28. Anon. XI, *Tractatus de musica plana et mensurabili*. 'Tree' diagram showing relationships between note values and mensural levels (GB-Lbl Add. MS 34200, fol. 36v).²³

²¹ The text of Anonymous XI frequently cites a 'Johannes Hollandrinus' as an authority on music theory. Indeed, the use of diagrams is seemingly a feature of texts of the so-called 'Hollandrinus' tradition: see C. Matthew Balensuela 'Johannes Hollandrinus [Valendrinus; Olendrinus; Hollandinus; Golandrinus; Eleandrinus; Hallis]', *Grove Music Online*. *Oxford Music Online* (Oxford University Press), <http://www.oxfordmusiconline.com/subscriber/article/grove/music/2242637> (accessed 8 March 2016); see also *Die Lehrtradition des Johannes Hollandrini*, ed. Michael Bernhard and Elzbieta Witowska-Zaremba (Munich: C. H. Beck, 2010).

²² See *Scriptores de musica medii aevi*, ed. Edmond de Coussemaker (Paris: Durand, 1864-76; reprint ed., Hildesheim: Olms, 1963), vol. 3, pp. 416-475.

²³ Image taken from http://www.chmtl.indiana.edu/tml/15th/ANO11TDM_36GF.gif (accessed 19 January 2015). 'Tree' diagrams are also used for alteration and imperfection in Anonymous V's treatise. See Busse Berger, *Medieval Music and the Art of Memory*, pp. 102-110.

Although, tree diagrams offer the reader an opportunity to see the interrelationships between mensural levels in a graphical sense, they are not always followed with musical examples. In providing more realistic notational scenarios, Tinctoris demonstrates how these relationships work in practice, elevating his basic discussions from relative abstraction within a carefully controlled environment that shows direct relevance with real musical practice.

Indeed, the approach taken by Tinctoris to list the mensural combinations in an exhaustive manner is typical of his exemplification strategy. In the majority of his texts, Tinctoris is keen to present exhaustive lists that explore the full intellectual possibilities of the precepts at hand, going beyond the provision of a simple diagram to aid understanding. This is indicative of Tinctoris's tendency to theorise beyond practice, providing an intellectually exhaustive account of a technique or precept that extends outside of the likely requirements in practice.

List-type exemplification of general rules can also be identified in *De alt.* and *De not. et paus.*, though no other theorist explores such an exhaustive list of mensural possibilities. In the treatise on notes and rests, exemplification of this type is prominent in Tinctoris's explanations of the rules for identifying note values within ligature groups. These rules are found in the tenth, eleventh, and twelfth chapters. As the first general rule for the identification of the value of notes at the end of a ligature, Tinctoris writes:

Prima regula generalis est, quod in omni ligatura ascendente, omnes note ultime breves sunt, nisi due tantum sint colligate, quarum prima caudam habeat a parte sinistra sursum protractam, quia tunc ultima sicut prima semibrevis est, ut hic patet:

The first general rule is that in every ascending ligature all last notes are breves, unless only two notes are bound together, of which the first has a tail drawn upward on the left side, since in that case the last note, like the first, is a semibreve, as is clear here.²⁴

²⁴ Tinctoris, *De not. et paus.*, I.xii.3, ed. and trans. Jeffrey J. Dean and Ronald Woodley, *Early Music Theory Online*, <http://earlymusictheory.org/Tinctoris/texts/denotisetpauis/#> (accessed 19 February 2015).



Figure 29. Tinctoris, *De not. et paus.*, I.xii.3. Example to accompany guidance on identifying the value of the final note of a ligature group (E-VAu 835, fol. 45v).

Tinctoris's musical example (Figure 29) includes all of the content required by the theoretical text, offering demonstrations of the ligature groupings described in the text. The text states that the final notes of ligatures are breves unless the ligature has only two notes, the first of which has an ascending stem on its left-hand side. This final point refers the reader back to the first general rule of the tenth chapter where this is articulated in more detail, drawing together different points into a theoretical argument and evidencing a coherent pedagogical trajectory.²⁵

Further evidence for this type of exemplification can be found in the way the text and example work together to form a theoretical whole. The musical example opens with a series of four ligatures, the first two in 'upright' formation, and the latter in 'oblique' formation, the first without stem, and the second with a descending stem on the left. In both cases, the ligatures follow Tinctoris's text, and the relevance to the theoretical point can be seen clearly, showing yet another example that is seemingly constructed to aid 'concurrent' reading.

Tinctoris follows these opening four ligatures with a four-note upright ligature with an ascending stem on the left-hand side, followed by three more upright notes, ascending in stepwise motion. This four-note ligature increases the level of complexity slightly, as it requires the reader to have an awareness of the points that have come before, particularly those governing the identification of the duration of middle notes in a ligature. In effect, Tinctoris situates this example within a pedagogical trajectory, relying upon prior understanding from within this text to identify the correct durational

²⁵ This technique is seen in Tinctoris's other texts and suggests a carefully planned pedagogical strategy.

value. This could have been part of a strategy to affirm knowledge from existing points, though it should be noted that little prior knowledge is presupposed.²⁶

Following this ligature, the second of Tinctoris's theoretical points dominates the rest of the musical example. Four two-note ligatures show instances where the final note is not a breve, because of the stem found on the left-hand side of the first note. In presenting the theoretical material in this order, Tinctoris helps the reader to understand his point by building up layers of complexity as the example progresses, showing clear pedagogical control in its construction.

The theoretical point (and the associated sub-point) offered in Tinctoris's text could have been demonstrated with a much shorter musical example. Indeed, other examples from this part of the treatise tend to contain less contextual content. In projecting his theoretical point into musical notation in this way, Tinctoris provides a variety of scenarios for the reader to see the application of his point, offering a more comprehensive view that takes some notational subtleties into account. Thus, the text and example form a quasi-symbiotic relationship, with both aspects bringing additional clarity and comprehensiveness to the theoretical whole, enhancing its instructional usefulness.

A somewhat similar approach is taken in *De alt.*, for examples showing the rhythmic alteration of specific note values. *De alt.* is divided into two books: the first establishes general rules of alteration; the second examines alteration for specific note values. Given that many of the general rules are more complex than note-value specific scenarios, one cannot help but question whether a more logical pedagogical ordering might have seen the order of the two books reversed. The construction of these examples takes a subtly different form from those discussed above, and thus requires further examination. Tinctoris once again uses the projection variant of the instantiation model, placing a specific theoretical point within a more realistic, yet carefully controlled, musical context.

In his discussion of arguably the most basic scenario requiring the alteration of semibreves, Tinctoris writes:

²⁶ Such a practice is typical of Tinctoris's other examples, but is applied less consistently in texts by other authors.

Si due semibreves sole in tempore perfecto ante brevem aut eius pausam inveniantur, ultima illarum alteratur, ut hic:

If two semibreves are found alone in perfect tempus before a breve, the latter of them is altered, as is clear in the following example:²⁷



Figure 30. Tinctoris, *De alt.*, ii.6. Exemplification via the ‘projection’ variant demonstrating the alteration of semibreves (E-VAu 835, fol. 70).

Tinctoris’s text is both focused and direct, describing a rhythmic scenario that would require the alteration of a semibreve.²⁸ In only going as far as to describe the basic scenario for the alteration of the semibreve, the example becomes the primary focal point for Tinctoris’s explanation of the theoretical point within a mensural context. Thus, the example takes on an ‘active’ role.²⁹ This example is typical of those found in Chapter 2 of this treatise, which are less complex than those outlining Tinctoris’s general rules in Chapter 1, raising some interesting questions about the pedagogical trajectory of the treatise.³⁰

However, the manner of demonstration in this example is closer to the approach seen in the treatise on imperfection than any other text discussed here.³¹ Tinctoris

²⁷ Tinctoris, *De alt.*, ii.6, ed. and trans. Jeffrey J. Dean and Ronald Woodley, *Early Music Theory Online*, <http://earlymusictheory.org/Tinctoris/texts/dealterationenotarum/#pane0=Edited&pane1=Translation> (accessed 19 October 2015). All subsequent references to this treatise will be taken from this edition and translation.

²⁸ Gaforus adopted a similar technique in his discussions of this topic in Book II from his *Practica musice*.

²⁹ ‘Active’ exemplification is discussed throughout Chapters Four and Five.

³⁰ A similar issue is raised by the pedagogical structure of Tinctoris’s *Prop. mus.*, something that is explored further in Chapter Five.

³¹ Such similarities are not all that surprising given the interdependency between the treatises on imperfection, alteration and musical dots.

presents five cases of semibreve alteration in this example, with the level of complexity increasing as the example progresses, perhaps offering differentiated layers of explanation within the same example.

The first case of alteration occurs in the first semibreve ligature, whereby the second of two semibreves between two breves is altered, following Tinctoris's text. This is perhaps the most straightforward and easily understood configuration for semibreve alteration, and is an ideal starting point for this type of example.³² The second case of alteration occurs on the second semibreve of a pair between a breve and breve rest, thus following Tinctoris's sixth general rule.³³

After these first two instances of alteration, the example becomes more complex. A *punctus perfectionis* is added to the breve that follows the first breve rest, preventing its imperfection. The semibreve that follows this should be grouped together with the semibreve after the following breve to create a unit requiring alteration, counting them together in syncopation. The degree of notational complexity here requires the reader to have understood Tinctoris's second general rule, thus showing that this example builds upon (and synthesises) the general rules discussed earlier in the treatise.

The final two cases of alteration are extensions of the first two, with the final semibreve of a chain of five being altered before a breve rest, thus completing perfect units. The example concludes with two breves in ligature and a single maxima to complete the perfect units, bringing the example to a mensural resolution.³⁴

In this example (Figure 30), Tinctoris constructs a controlled environment in which different semibreve alteration scenarios are demonstrated in a variety of notational contexts within a single example. In addition to simply exemplifying his point, the range of demonstration supplied would offer the reader a fairly comprehensive understanding of notational scenarios where semibreve alteration was required. In terms of exemplification here, Tinctoris uses the projection variant in a way that places the notational focus upon the process of alteration, rather than upon a single instance of the practice.

³² It is hard to make a statistical comment upon the frequency with which such figures appear in contemporary repertoire, but it seems safe to suggest that this was probably the most common scenario of semibreve alteration that singers would encounter.

³³ Tinctoris's sixth general rule of alteration states that rests can induce alteration in the same way that their like values can. However, rests themselves cannot be altered.

³⁴ The construction of this example is discussed more fully in Woodley's commentary to his online edition. See note 27, above.

By providing five instances of alteration in the space of such a short demonstration, Tinctoris underpins the construction of the example with the theoretical point, ensuring its active role in his theoretical argument. This would have been more helpful to the reader than an example of a similar length that contained only a single instance of the precept, and may have encouraged further engagement with the details of the notation, exploring some of the more challenging rhythmic and notational possibilities of alteration. Indeed, the extension of this example is further supported by the *mise-en-page*, certainly as it appears in **V**.

‘Active’ musical exemplification using the projection exemplification variant can also be seen in Tinctoris’s *De natura et proprietate tonorum*, though in a different fashion to the treatises on imperfection and alteration. *De ton.*, which like the *Exp. manus* is unusual in Tinctoris’s notational output in its non-mensural focus, includes a mix of monophonic and polyphonic musical examples, most of which are constructed using the same musical models. One such example is found in Ch. xiii, where Tinctoris writes:

Si vero aliquis octo tonorum praedictorum a principio usque ad finem ex speciebus diapente ac diatessaron sibi modo quo diximus attributis non fuerit formatur, immo speciebus unius alterius aut plurium commisceatur, huiusmodi tonus commixtus vocabitur. Verbi gratia, si in primo tono constituatur quarta species diapente regulariter attributa septimo, tunc appellabitur hic tonus primus septimo commixtus, ut hic patet:

If any of the eight tones mentioned above has not been formed from its beginning up to its end from the types of diapente and diatessaron attributed to itself in the way we have described, if, on the contrary, it has been mixed with types of another one or many, a tone of this kind will be called mixed. In other words, if the fourth type of diapente regularly assigned to the seventh is placed in the first tone, then this tone will be called the first mixed with the seventh, as is seen here.³⁵



Figure 31. Tinctoris, *De ton.*, xiii.2–3. Example of mixed tones, divided into sections that demarcate the mixed elements (E-VAu 835, fol. 24).

³⁵ Tinctoris, *De ton.*, xiii.2–3, ed. Albert Seay, *Opera theoretica*, vol. 1 (CSM 22, 1975), p. 78, and trans. Albert Seay, *Concerning the Nature and Property of Tones*, Colorado College Music Press Translations, 2 (Colorado Springs: Colorado College Music Press, 1976), p. 16.

The example shown in Figure 31, which is constructed in much the same fashion as many of those from Chapter Two, is divided into three clear sections, corresponding to the mixture of tones described in the text. Tinctoris writes that the placement of the fourth type of diapente (normally assigned to the seventh tone) in the first tone will result in a tone that is said to be the first mixed with the seventh. From the perspective of exemplification, the first two sections of the example demonstrate the different component parts of this tonal mixture, namely a specific type of diapente and diatessaron.

The opening section of Figure 31 demonstrates the diapente species described in the text, with the melodic content framing the range D up to A. The second section remains largely within the confines of the species of diatessaron described, and thus the component parts of the mixed tone are demonstrated fully. Therefore, the content from the text has been mapped using the instantiation model of exemplification. Tinctoris could have expressed this mixed tone by showing an ascending and descending scalar motion to be interpreted in a purely graphical sense.³⁶ However, the decision to create an example that included a typical melodic line frames this mixed tone in a more instructionally useful context, equipping the reader with the skills to identify these tonal mixtures in common practice. In this case, the context does not detract from the sharp focus of the example, presenting the instance of the theoretical point with great clarity.

In dividing the example into clear sections that mostly correspond to the component parts of the theoretical text, Tinctoris strengthens its pedagogical framework, enhancing the text–example relationship. The first section of the example further contributes to this, as it is a direct copy of the opening of the eighth example of the treatise, perhaps reminding the reader of this earlier example that demonstrated the formation of the first tone. Thus, Tinctoris’s internal pedagogical structures contribute to the type of exemplification at work here that, although based upon a variant of the instantiation model, relates to the didactic trajectory of the whole treatise.

A similar type of exemplification relationship where the musical example functions ‘actively’ in the theoretical discussion can be found in the monophonic examples from the latter stages of the *Exp. manus*. The treatise on the Hand, though characterised by its use of diagrammatic examples (see, for example, Figure 25 and

³⁶ Such an approach is seen in the Berkeley treatises.

Figure 40), deploys monophonic musical examples to great effect in its discussion of hexachordal mutation.

The seventh chapter, *De mutationibus* [On mutations], of the *Exp. manus* consists of a comprehensive list of the possible mutations accompanied by meticulously constructed examples.³⁷ Hexachordal mutation, the conceptual shift between overlapping hexachords that allowed a singer to navigate the gamut using only six syllables, was a topic that was not always demonstrated through notational means in theoretical treatises. Its conceptual nature meant that it was rarely, if ever, notated explicitly in practical sources, and thus theorists explored many different ways to overcome this challenge.³⁸ Because of this, Tinctoris's use of musical notation with additional labels is significant, particularly given that it is, to the best of my knowledge, almost without precedent.³⁹ For the sixth example of mutation, Tinctoris writes:

Sex in A la mi re acuto, scilicet la–mi, mi–la; la–re, re–la; mi–re et re–mi: la–mi ad ascendendum a natura in \flat molle; mi–la ad descendendum de \flat molli in naturam; la–re ad ascendendum a natura in \natural durum; re–la ad descendendum de \natural duro in naturam; mi–re ad ascendendum a \flat molli in \natural durum; et re–mi ad ascendendum a \natural duro in \flat molle, ut hic patet:

Six on high A la mi re, namely la–mi, mi–la; la–re, re–la; mi–re and re–mi: la–mi to ascend from natural to soft \flat ; mi–la to descend from soft \flat to natural; la–re to ascend from natural to hard \natural ; re–la to descend from hard \natural to natural; mi–re to ascend from soft \flat to hard \natural ; and re–mi to ascend from hard \natural to soft \flat , as is shown here:⁴⁰

Tinctoris's text describes the six possible mutations on A la-mi-re, grouped into three ascending and descending pairs: la-mi and mi-la; la-re and re-la; mi-re and re-mi. The use of repetitious phraseology would have helped the reader to identify the key theoretical point clearly, emphasising the points of change. Close examination of the accompanying musical example (Figure 32) reveals that a variant of instantiation is used to integrate the example into the theoretical whole.

³⁷ This list makes clear, by implication, which mutations are not possible.

³⁸ One notable approach is taken by Prosdocimo de' Beldomandi, where the subject is discussed without any diagrammatic or musical examples.

³⁹ Johannes Gallicus also makes use of solmisation annotations in his examples in the *Ritus canendi*, though in a quite different fashion.

⁴⁰ Tinctoris, *Exp. manus*, vii.23.



Figure 32. Tinctoris, *Exp. manus*, vii.3. Example showing the six mutations on A la-mi-re, matching the order of the text (E-VAu 835, fol. 11).

Tinctoris's example presents the three pairs of mutations in the same order as the text, forging strong text–example links and allowing a reader to read the text alongside the notation, offering concurrent reading possibilities. This would have increased the didactic usefulness of the example, with another ‘quasi-symbiotic’ text–example relationship being formed: a reader comfortable with the theoretical material could have understood the contents of the notation through the text, and vice versa, following both elements simultaneously.

This kind of relationship, in itself, shows evidence of a kind of ‘projection’, particularly given that there are additional pitches that are placed between the mutation points. These serve to present each of the hexachordal mutations in a more ‘realistic’ musical context, but function in a different way to the additional pitches in the example from *De imperf.* discussed earlier in this chapter (see Figure 26). These extra notes would help to prepare a reader for the manner in which they might encounter hexachordal mutation in a practical context, as they ‘frame’ the ranges of the hexachords that the singer or reader is required to mutate to and from, and are thus an important secondary part of the demonstration of mutation: they function in both a contextual and active role within the example.⁴¹ Such an approach is pedagogically sound, as the reader would have needed to identify mutations without the aid of labels in practical musical performance, and thus Tinctoris's demonstration seems to strike a balance between didactic handholding and practical reality.

In addition to these features, Tinctoris provides another element to bring greater clarity to the example. This additional element comes in the form of solmisation syllables placed above the points of mutation, in this case centred on A la-mi-re, to indicate the precise mutation taking place. Through placing specific syllables above the

⁴¹ These pitches, necessary to the example, situate the mutations in a ‘natural habitat’, rather than detracting from the key point.

relevant mutation points, Tinctoris draws the example even closer to the main theoretical point, and further strengthens the text–example relationship at work here. This approach raises the visual profile of the points of mutation, making them obvious to even the most inexperienced of readers, an approach that is somewhat analogous with the use of *signa congruentiae* to indicate specific points of dissonance in the later parts of *De contr.*⁴²

At this stage, it will suffice to say that there are two distinct layers to the exemplification here. The main layer (musical notation) makes use of projection, and the additional layer (solmisation labels) makes use of a more simple form of instantiation. In combining these two layers of exemplification, Tinctoris strengthens the text–example relationship to form a more didactically useful theoretical whole. This approach also activates the musical example as part of the pedagogical progression, facilitating engagement on different levels by raising the visual profile of key points.

To my knowledge, Tinctoris’s addition of solmisation syllables to a musical example of this sort at the precise points of mutation is almost entirely without precedent, and represents a significant innovation in exemplarity. Using the TML database, I have only been able to find one instance that makes use of a similar form of solmisation indication in the musical notation from fifteenth-century treatises. The treatise in question survives as a *unicum* in MS B-Gu 70 (**G** henceforth). **G** is an interesting theoretical compendium that contains, amongst other texts, a number of highly unusual readings of some of Tinctoris’s treatises.⁴³ Although this manuscript dates from 1503–1504, this treatise probably dates from the mid-fifteenth-century, based upon its style and theoretical contents.

This music theory treatise, *De arte musicali*, which has been misattributed to Dionysius Lewis de Ryckel (1402–1471), is divided into two books: the first on *musica speculativa*; the second on more practical issues relevant to the present discussion.⁴⁴

⁴² This symbol, and its function within the example, is further discussed in Chapters Four and Five.

⁴³ On the manuscript source itself, see Albert Derolez, *The Library of Raphael de Marcatellis: Abbot of St. Bavon’s, Ghent, 1437–1508* (Ghent: E. Story-Scientia, 1979), pp. 227–234. This source includes the following of Tinctoris’s treatises: *Complexus effectuum musices*, *De ton.*, *De not. et paus.*, *De reg. val.*, *De alt.*, *De imperf.*, *Prop. mus.* An additional chapter is added to *De not. et paus.* which discusses ‘puncti acceptionis’ and does not survive in any other source. I discuss this further in Chapter Five.

⁴⁴ On Dionysius Lewis de Ryckel see Kent Emery Jr., ‘Denys the Carthusian’, *A Companion to Philosophy in the Middle Ages*, ed. Jorge J. E. Gracia and Timothy B. Noone (Malden, MA: Blackwell, 2003), pp. 243–244. Note the omission of music from this description. He is also known as Denys the Carthusian and Denys de Leeuwis. He sought entry to the Carthusian order when he was 18 or 19, but was refused. Instead, the prior of Roermond sent him to the University of Cologne, where he matriculated in 1421 and became a Master of the Arts in 1424.

The attribution of this treatise to De Ryckel seems unlikely given that there is no indication that one of the great polymaths of the Middle Ages had any musical background at all. He authored treatises on a number of subjects, including astronomy and theology, and composed commentaries upon every book of scripture. However, no evidence survives for any musical activity, and thus it seems that Walwein de Tervliet, the cataloguer of the Ghent source, misattributed this treatise to him. It seems more likely that the authorship of this text rests with another Carthusian whose identification is beyond the scope of this thesis.⁴⁵ In terms of content, the treatise includes a lengthy passage extracted from the anonymous *Quatuor principalia*, perhaps suggesting interaction between Carthusian and Franciscan circles.⁴⁶ For the present discussion, I will refer to the author of *De arte musicali* as ‘pseudo-Dionysius’ in the absence of a more credible attribution.⁴⁷

Given that the present discussion centres mostly on practically-focused treatises, only Book II of pseudo-Dionysius’s treatise will be examined here. Book II includes 7 short examples that incorporate the same kind of staff labels that Tinctoris uses in the *Exp. manus*, albeit deployed in a different fashion. Pseudo-Dionysius writes:

Etiam nota quod nulla debet fieri mutatio:
neque ratione ascensus uel descensus cantus:
neque ratione signi: nisi de necessitate: ubi
scilicet euitari non possit.

Mutatio ratione ascensus vel descensus.
Mutatio ratione signi.⁴⁸

Also note that there must be no mutation,
either with respect to the ascent or descent of
the chant: either with respect to the sign,
except with necessity, namely, where it
cannot be avoided.

Mutation in the method of ascent or descent.
Mutation by the sign.

⁴⁵ This treatise is not attributed to Ryckel in the published *Opera omnia*, in Coussemaker’s *Scriptores*, or by Sergej Lebedev in *Cuiusdam cartusienis monachi tractatus de musica plana* (Tutzing: Verlegt bei Hans Schneider, 2000), pp. viii–x. The attribution of this treatise to De Ryckel is described as ‘erroneous’ in Heinrich Hüschen, ‘Kartäuser’, *Die Musik in Geschichte und Gegenwart* 2nd edition, ed. Ludwig Finscher (Kassel: Barenreiter, 1994–2008), vol. 17, p. 1807.

⁴⁶ The passage extracted from the first part of the *Quatuor principalia* is found in the opening of the *musica speculativa* section of *De arte musicali*. The extracted passage begins ‘Utilitas hujus Scientiae...’ and ends ‘sequentem’: see *Quatuor principalia*, London, British Library, Additional 4909, fols. 19v–20r, transcription available at http://boethius.music.indiana.edu/tml/14th/QUAPRIA1_MLBL4909 (accessed 4 February 2016).

⁴⁷ I am grateful to Jeffrey Dean and Ronald Woodley for their help in identifying what little existing literature there is on this treatise and manuscript. I hope to pursue the identification of this anonymous Carthusian author in future research.

⁴⁸ Pseudo-Dionysius (attrib. to Denys the Carthusian), *De arte musicali*, ed. Peter Slemon, online, http://www.chmtl.indiana.edu/tml/15th/GENTPRA_MGRU70.html (accessed 22 September 2014). Translation my own.

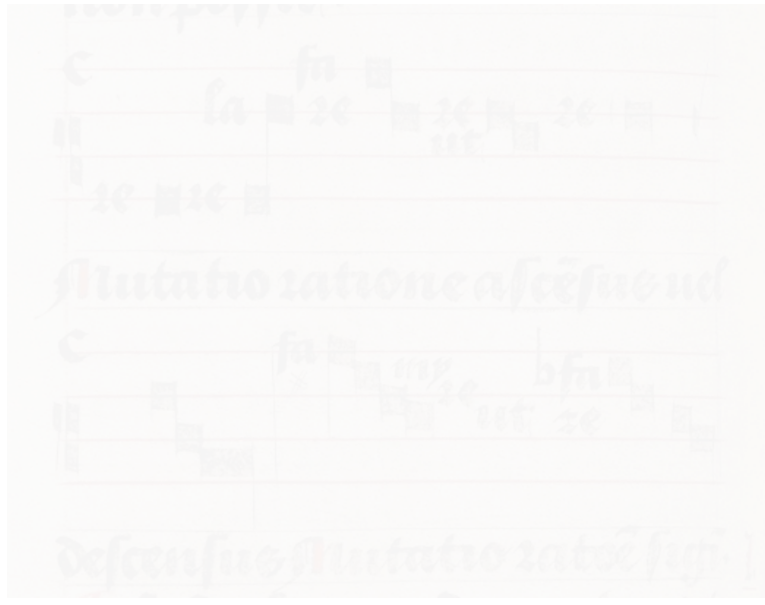


Figure 33. Pseudo-Dionysius, *De arte musicali*, II.xiii. Example showing solmisation syllables placed in the musical notation (B-Gu 70, fol. 115vb).

Figure 33 shows pseudo-Dionysius's exemplification of the mutation process, supported by specific symbols indicating mutation through a change in the type of B: b-fa and b-mi. Although his approach appears to have many similarities to Tinctoris's, at least in visual terms, there are a number of significant differences.

The first of these is that pseudo-Dionysius, or certainly his scribe, places solmisation syllables next to almost every note in the passage. Whilst the incorporation of so many syllables into the musical notation helps to strengthen the links between notes and solmisation syllables, the mutation points are not clearly distinguished from other notes around them. The only way that a reader could have differentiated these from non-mutation points would have been to identify points where more than one syllable is placed on a particular staff line or space in the example.

The second main difference between Tinctoris's approach and that of pseudo-Dionysius is the relationship formed between the text and the musical notation. In Tinctoris's treatise, the rather plain text describes the particular mutations on display in the musical notation, forging a strong relationship between the text and musical notation. The text of pseudo-Dionysius's treatise, on the other hand, though discussing mutation, does not specify the mutations present in the notation. Instead, it discusses the process of mutation in a more general sense, using an example that does not correspond directly to the mutation on a specific note. The possible mutations are subsequently listed in a lengthy text-based explanation, and are not demonstrated in musical notation. Tinctoris's discussion therefore provides the reader with a more

systematic exposition of the mutations that are possible and, by implication, those that are not, without introducing the concept of mutation at a level of generality that might cause confusion.⁴⁹

Therefore, pseudo-Dionysius's text, despite appearing to show a precedent for Tinctoris's use of solmisation labels within musical notation, functions quite differently, though this is not to deny the obvious visual similarities. However, it is important to separate the visual similarities from the functional realities of these examples. Tinctoris's use of syllables would have helped to draw the focus of his readership from the theoretical text towards the musical notation in an almost seamless fashion. In effect, the text and musical notation could be read side-by-side, improving the reader's comprehension of both aspects, and increasing the clarity of his explanations. The result would be similar to that found in the examples discussed earlier in this chapter from *De imperf.*

Despite their functional differences, both cases show a significant shift in the theoretical approaches towards the exemplification of hexachordal mutation from the approach taken by Marchetto of Padua in the fourteenth century.⁵⁰ His *Lucidarium*, which is one of the most influential treatises of its age and survives more or less complete in fifteen manuscript sources, dedicates a whole chapter to the discussion of hexachordal mutation.⁵¹

VIII.ii of the *Lucidarium* is entitled 'De mutatione. Quid sit et ubi fiat' [On Mutation: What it is, and where it occurs] and contains eight monophonic musical examples, each of which shows the mutations on a specific note within a 'realistic' musical context. The first mutation to be exemplified is that on C fa-ut (and later, ut-fa), the point of overlap between the first and second hexachord. Marchetto writes:

⁴⁹ Pseudo-Dionysius discusses specific mutations in more detail later in the same chapter, though solmisation labels do not appear in the examples that accompany these points. Instead, he provides examples that include mutations without staff labels, save for a general caption.

⁵⁰ For a more extended discussion of Marchetto's practice see Chapter Two.

⁵¹ All text references and translations to Marchetto's *Lucidarium* will be taken from Jan Herlinger, *The Lucidarium of Marchetto of Padua: A Critical Edition, Translation, and Commentary* (Chicago: The University of Chicago Press, 1985). I am grateful to Professor Herlinger for sending me a copy of his edition and for his continuing support of my investigation here. On the influence of the *Lucidarium* see Jan Herlinger, 'L'influsso di Marchetto: prove manoscritti', *La filologia musicale: istituzioni, storia, strumenti critici* vol 3, ed. Maria Caraci Vela, pp. 201–228 and its earlier version in Herlinger, 'Marchetto's Influence: The Manuscript Evidence', *Music Theory and Its Sources: Antiquity and the Middle Ages*, ed. André Barbera (Notre Dame, IN: University of Notre Dame Press, 1990), pp. 235–258.

In C fa ut enim sunt due voces et due mutationes, prima cum mutatur fa in ut propter ascensum b quadri in naturam, secunda e converso, ut hic:

On C fa ut there are two syllables and two mutations. The first occurs when *fa* is changed to *ut* on account of an ascent from the property of square b to the natural, the second when the reverse is the case, as here:⁵²

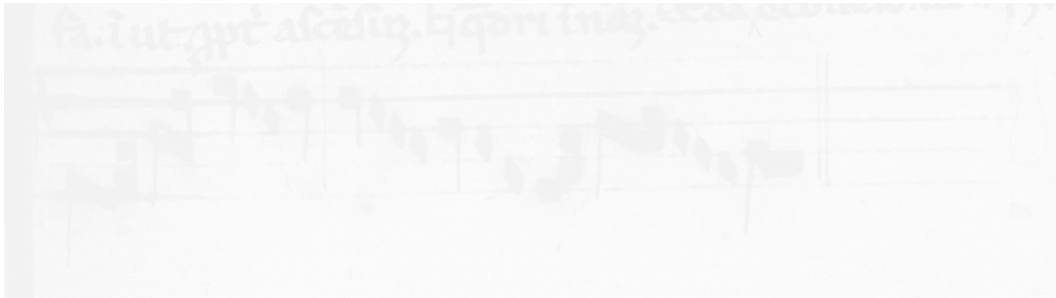


Figure 34. Marchetto of Padua, *Lucidarium*, VIII.ii.5–7. Mutation on C fa-ut (and ut-fa) (B-Br II 4144, fol. 20).



Figure 35. Marchetto of Padua, *Lucidarium*, VIII.ii.5–7. Mutation on C fa-ut (and ut-fa) (I-Ma D.5 Inf., fol. 63v).

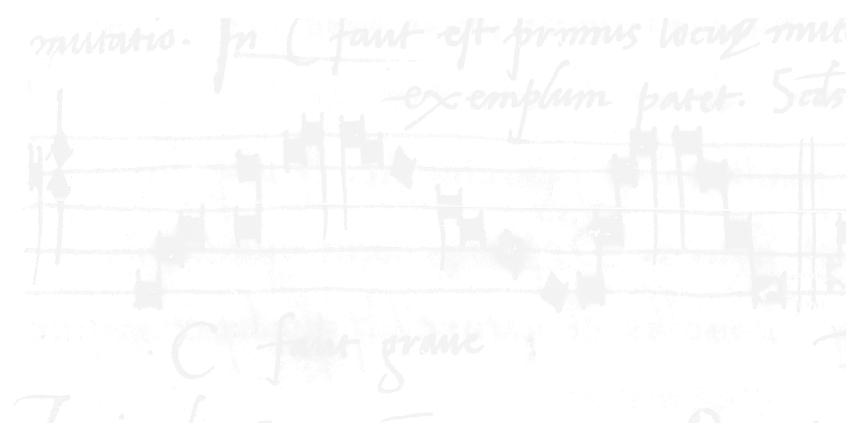


Figure 36. Marchetto of Padua, *Lucidarium*, VIII.ii.5–7. Mutation on C fa-ut (and ut-fa) (I-PEc 1013, fol. 26).

⁵² Marchetto of Padua, *Lucidarium*, VIII.ii.5–7, pp. 282–283.

Marchetto's text describes the mutation on display in the musical examples (Figures 34–36) as occurring on the pitch C, with the solmisation syllable being changed from *fa* to *ut*, effectively swapping from the first hexachord [*prima deductio*] to the second hexachord [*secunda deductio*].⁵³ The text is similar to Tinctoris's, providing a description of the solmisation content that is mutated in the example according to the normal theoretical rules.

Unlike Tinctoris's manuscripts, there is a significant amount of variation in the examples between the sources of Marchetto's *Lucidarium*. The degree of difference between the renderings of the example that accompanies this point can be seen in Figures 34–36. However, there is sufficient similarity across the sources to suggest that the scribes were working from exemplar copies that conveyed the same theoretical effect, if not precisely the same notes. Crucially, from a pedagogical perspective, the points of mutation are preserved almost identically throughout the examples, showing quite a different process of transmission from the thirteenth-century precedents discussed in Chapter Two.

Herlinger presents a transcription of the example as it appears in I-Ma D.5 Inf. (henceforth **M**), which aids the examination of the demonstration of the two mutation points in the example.



Figure 37. Transcription of I-Ma D.5 Inf., taken from Herlinger's edition of Marchetto's *Lucidarium*, p. 283.

This transcription from **M** is partially different, certainly in the first part of the example, from the version of the example found in the much later **Pg** (late fifteenth century). If the theoretical points are mapped on to the notation presented here, the first mutation (C *fa* moving to *ut*) occurs on the second note of the second ligature, and the second mutation occurs in the second part of the example as the second C after the division

⁵³ I will retain the term 'hexachord' for ease, even though *deductio* is more common in contemporary sources. Stefano Mengozzi has suggested the term *proprietas* as a more appropriate alternative.

line.⁵⁴ In both cases, these mutations are hardly easily identifiable points in the notation, with this being especially true of the second mutation. The clarity of the text would have helped a reader to understand fully the conceptual shift at work, and the hexachordal mutation taking place.

Marchetto further challenges the reader by including a number of Cs throughout the example where mutation does not take place. This requires a more complex appraisal of the hexachordal shifts that goes beyond simply identifying any note placed on C. Thus, the relationship formed between the text and example here is more complex than one might assume at first glance, requiring a detailed level of engagement to identify the points at which these conceptual shifts occurred.

In short, the example clearly demonstrates Marchetto's theoretical point, presenting the two mutations he describes in the text within a melodic context. However, the manner of presentation, certainly as it survives in some of the earliest sources, does not provide any additional information in the notation to aid the understanding of a reader who had not already understood the theoretical point fully. In placing the two mutations at seemingly structurally unimportant positions, Marchetto may have provided a realistic example, whereby the mutation needed to be effected quickly and without delay, that would challenge a reader's understanding. Although the mutations are implied by the melodic shape, these mutation points are not made explicit to the same degree as in Tinctoris's text. From a didactic perspective, it is clear that Tinctoris and pseudo-Dionysius, working in a similar style to their contemporaries in other aspects, adopted different (and perhaps more instructionally useful) techniques towards its exemplification.

In the sixteenth century, similar exemplification strategies were being used to demonstrate theoretical points pertaining to hexachordal foundations. Theorists such as Sebald Heyden, writing some sixty years after Tinctoris, included solmisation syllables as part of the conceptions of staff space. The syllables are not placed above specific mutation points, but are mapped onto the staff lines and spaces to which they apply in

⁵⁴ This mutation would occur here if the rule, given by some theorists, that one must stay within a hexachord for as long as possible is followed. This is not made explicit, but seems implicit in this context.

various hexachordal configurations.⁵⁵ Heyden’s approach was slightly streamlined in his second edition of the treatise (Figure 38, right), but the same intention is retained.



Figure 38. (Left) Sebald Heyden, *Musicae, id est, artis canendi libro duo* (Nuremberg: Petreius, 1537), p. 34. (Right) Heyden, *De arte canendi* (Nuremberg: Petreius, 1540), p. 39.

In Figure 38, the inclusion of solmisation syllables on the staff lines and spaces maps hexachordal practices on to staff notation in a way that draws explicit links with staff notation. It perhaps also shows that Tinctoris’s rather pedantic notion that notes *were* the lines and spaces themselves still held relevance at this time. However, this process, whilst making mutations visible, does not raise the visual profile of these points to the same extent as Tinctoris’s tightly-controlled pedagogical miniatures, even accounting for Heyden’s likely different intentions. Despite the differences, it shows that Tinctoris’s approach was innovative and is perhaps indicative of an increasing trend towards pedagogical specificity in musical examples and the relationships formed to create a theoretical ‘whole’. The notational exemplification of hexachordal-related

⁵⁵ On examples in Sebald Heyden’s *De arte canendi*, see Cristle Collins Judd, *Reading Renaissance Music Theory: Hearing with the Eyes* (Cambridge: Cambridge University Press, 2002), esp. pp. 90–108. The use of *signa congruentiae* here is intriguing.

topics became an increasingly common regular feature in the years immediately following Tinctoris's treatises.

Instantiation, Exemplification and Reading

The question of what the different types of exemplification discussed above might tell the modern scholar about how particular readership groups approached Tinctoris's theoretical texts is an intriguing one. The examples discussed in this chapter show that what I have described as instantiation, whether in its basic form or through its projection variant, was most frequently used as an exemplification strategy to deploy examples related to foundational theoretical points. Such fundamentals needed to be established (and demonstrated) properly to aid the reader in understanding the more complex aspects of each treatise. The foundational status of most of the theoretical points associated with this type of exemplification might, implicitly, suggest a particular readership group, or certainly a level of proficiency in music theory. The approach taken to their integration within the theoretical argument may also point to a method of engagement with such content, particularly if read alongside the changes in scholarship outlined in Chapter One.

De arte contrapuncti

The first examples discussed in this chapter were taken from Book I of *De contr.*, widely recognised as one of his most complex treatises. The exhaustive list of concords, and accompanying graphical demonstrations of such fundamental material (see Figure 23), would surely have not been required by a reader who was already well versed in basic musical practice. Therefore, their possible function in the treatise is worthy of further examination.

Bonnie Blackburn, in her seminal article on Tinctoris's pedagogical motet *Difficiles alios* and **Pg** as a theoretical compendium, dismisses the possibility that Book I of *De contr.* was aimed at amateurs. She writes:

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.⁵⁶

Although Blackburn's statement that a reader would struggle to progress to Books II and III through studying Book I alone is both accurate and perceptive, her suggestion that the treatise was not written for the amateur musician may not quite represent the full picture. As demonstrated below, there is some evidence to suggest that the counterpoint treatise could have been, particularly as it survives in **V**, read by readers of a range of abilities in different ways.

In addition to its potential pedagogical function as a course in concords for counterpoint, it is also possible that Book I served as a book of reference that a reader might consult. If one imagines a reader already familiar with the intervals associated with counterpoint progressing into Books II and III, it is possible that they may have needed to refer back to Book I to act as a memory aid for contrapuntal motions associated with particular concords. The list-like layout of Book I (and the lack of textual flourish) might suggest that Tinctoris envisaged a reader referring back to Book I when the complexity of Books II and III necessitated a pause for thought.

Even under this interpretation that is suggestive of a more advanced readership, Blackburn's assertion that the treatise 'presupposes expertise in singing' requires slight reconsideration, given that such basic information would probably have been internalised fully in the training of a professional singer, rendering the referential list rather redundant. It would still have been possible for an 'amateur' musician, perhaps a resident court intellectual for example, to have internalised the vocabulary of Book I upon reading it from beginning to end, referring back to it as required in the advanced stages of Books II and III. Indeed, the reader would have had to use Book I for such a purpose, given that Tinctoris does not treat intervallic substance anywhere else in his treatises.

From the perspective of instantiation, the inclusion of graphical examples for basic intervallic points is, in itself, noteworthy. At this time, the production of manuscripts was very expensive, particularly if they were of the lavish design of **V** and **BU**, the two presentation volumes of Tinctoris's theoretical texts. With this context in mind, the inclusion of numerous musical examples that collectively occupy a large amount of page space might suggest that they were included in Book I as Tinctoris

⁵⁶ Bonnie J. Blackburn, 'A Lost Guide to Tinctoris's Teachings Recovered', *Early Music History*, 1 (1981), p. 40.

considered them to be important for the aspiring practising musician. Indeed, if a reader could not have hoped to progress in some way to Book II from Book I, then why would Tinctoris have gone to such great lengths to outline intervals and basic contrapuntal motions in fine detail? To my mind, there are two possibilities: 1) that Tinctoris designed Book I to be consumed by a range of readers, with different treatises prioritising different readers; 2) that Tinctoris conceived Book I as a theoretical compendium with a pedagogical underpinning designed to provide exhaustive discussion of theoretical points.

The first possible answer to this might be found in the notion that Tinctoris's treatises were designed to be 'consumed' by various readership spheres in a number of ways, with each readership group accessing and using the information contained in the treatise differently. If the possibility is entertained that Book I of the treatise might have been included for a readership that, although enthusiastic about musical performance, lacked a traditional musical education, then the idea of different aspects of the text being targeted at varied readership groups gains additional support.

Even if Book I was primarily designed to be used as a referential list of concords and basic contrapuntal motions, it seems clear that it was still composed to address a pedagogical need. Indeed, even a relatively inexperienced singer would almost certainly have had relative command of concords and basic contrapuntal motions, and thus it seems that this book serves both a pedagogical and referential function, somewhat similar to the discussions of rests in *De alt.*: see Figure 24.

Blackburn is right in suggesting that Books II and III are not primarily intended for the amateur musician, but perhaps oversimplifies the complex nature of readership groups associated with a music-intellectual text, a topic that we know very little about. As will be shown in Chapters Four and Five, both **V** and **BU** contain evidence that Tinctoris, or Crispus, went to some effort to facilitate different types of understanding. Book I also contains similar evidence that Tinctoris was keen to enhance the clarity of his theoretical material, though in different ways from his approach in Books II and III.

One of the features that make Tinctoris's texts so useful to the modern scholar is that his statements are mostly clear and precise, with only rare instances of ambiguity. In some cases, this means including both a general definition of a theoretical point and a more detailed description that relates directly to the musical content in the accompanying example. Earlier in this chapter, this practice was seen in examples containing basic intervallic content, in which Tinctoris's text described the size of the

interval and then provided *loci* that appeared in the example. Building upon such foundational definitions, another type of example uses this same process, though different specific content is included in the text.

Following the basic definitions of intervals, Tinctoris often goes on to provide a series of note-against-note musical examples that explore the placement of particular intervals within contrapuntal contexts, many of which are quite extended. These examples are notated using the mix of black/void notation laid out in vertical alignment, aiding the consultation of their contents in a visual manner.⁵⁷ In I.iv, Tinctoris writes:

Quomodo aliam tertiam.

Tertia alia tertiam superiorem supra et infra tenorem sequetur si tenor ipse in eodem loco permanserit, vel si unum aut duos, tres, aut quattuor gradus ascenderit. Sed tenore tot gradus (hoc est unum, duos, tres, aut quattuor) descendente ipsa tertia superior aliam tertiam post se infra eum tantum habebit, ut hic:

How another third

Another third will follow the upper third above and also below the tenor if that tenor has remained in the same position, or if it has ascended one or two, three, or four steps. But with the tenor descending so many steps (that is, one, two, three, or four) the upper third has another third after it only below it, as here.⁵⁸



Figure 39. Tinctoris, *De contr.*, I.iv.17–18. Example showing the movement between thirds in relation to a Tenor with prescribed motion (E-VAu 835, fol. 85).

Although Tinctoris's text here does not contain any specific note labels, the movement of each voice is dictated through the description of the Tenor movement and the intervals to be placed above and below it. Tinctoris describes this movement in terms of ascending or descending steps from the original note in the Tenor, avoiding indications of pitch: the Tenor remains in the same place, then ascends one, two, three or four steps, before descending the same number of steps. The accompanying musical example accurately follows the prescribed melodic shape and is subdivided into two

⁵⁷ On the practical uses of this type of void/black notation, see note 5. Outside of the use of a mix of colours, this example holds many functional similarities to the short note-against-note two-voice demonstrations found in Marchetto's *Lucidarium* and Prosdocimo's *Contrapunctus*.

⁵⁸ Tinctoris, *De contr.*, I.iv.17–18.

larger sections, made up of five and four parts respectively. The text and example probably stop at the fourth step as the theoretical point is founded upon the implicit understanding that most Tenors in counterpoint or plainchant rarely move by more than four steps at a time.⁵⁹

The first section of this example corresponds to the first part of Tinctoris's text where the Tenor motion is said to stay on the same note or ascend in a stepwise fashion, always returning to the same note for the start of each new component part within the section. The Tenor, notated in void notation, is static in the first part, ascends by one step in the second part, and continues the pattern outlined in the text. A black square noteshape is placed a third above the opening note of each part, before a black noteshape (i.e. the counterpoint) is placed a third above and below the second Tenor note of each part. The practice is repeated for the second section of the example, linking the musical notation to the second part of the text in much the same way. Thus, the use of instantiation here is clear to see, with specific instances of the concord described in the text being presented in musical notation. In addition to demonstrating foundational theoretical points, examples of this type, which are often graphical in nature, offer interesting insights into the possible ways that readers might have approached such examples.

Firstly, the use of void notation for the Tenor and black notation for the additional voice (henceforth, *Contrapunctus*) creates a strong visual distinction between the two voices.⁶⁰ The use of this type of notation, rarely seen in fifteenth-century practical polyphonic sources but more common in theoretical sources, might suggest that Tinctoris envisaged his readers approaching this material silently.⁶¹

Further evidence to support this notion is found in the use of vertical alignment between the voices. This appears to have been deployed for a specific purpose in the theoretical text.⁶² In visually distinguishing the voice parts using different colours for the notation in vertical alignment, Tinctoris facilitated visual comprehension of this foundational theoretical point.

⁵⁹ This point is only made explicit in the final chapter of Book I, where Tinctoris provides a single example to account for such rare instances: see Tinctoris, *De contr.*, I.xix.

⁶⁰ Sean Gallagher explored related issues in a recent conference paper, 'Tinctoris's examples and the sound of *cantare super librum*', paper given at the conference *Johannes Tinctoris and Music Theory in the Late Middle Ages and Early Renaissance* (Senate House, University of London, October 2014).

⁶¹ Tinctoris is not the first theorist to make use of colour coding to differentiate voice parts. Philippe de Vitry advocated such a practice in the *Ars nova* treatise attributed to him.

⁶² Vertical alignment was, of course, used in keyboard manuscripts of this era, but was rarely found in contemporaneous vocal sources.

If this is interrogated further, the construction of the example itself might provide a more detailed insight into a specific type of visual comprehension. In clearly dividing the example into separate component parts that relate directly to the text construction, Tinctoris seems to actively encourage the reader to consult the musical notation whilst reading the theoretical text. ‘Concurrent’ reading would have allowed the reader to see a graphical demonstration of each number of steps between the first and second notes of the Tenor. This is demonstrative of a pedagogical relationship between the list-like nature of the text and the musical notation. Indeed, this type of reading seems to be facilitated in many of the examples laid out above from a broad cross-section of Tinctoris’s other treatises, even with more complex musical material.

Somewhat unusually, Tinctoris’s musical example offers alternative contrapuntal possibilities depending upon the interpretation of the notation, making economic use of the exemplary content. His text refers to the interval of a third being placed both above *and* below the tenor voice, as demonstrated in the example. However, it would have been possible for a reader to switch between the notes above or below the tenor voice as they saw fit, offering a number of possibilities where the same intervallic relationship could be configured in different ways to create counterpoint that did not sound like a series of parallel intervals moving in a stepwise direction.

In effect, Tinctoris conflates numerous realisations of an intervallic scenario into a single presentation, simultaneously offering different perspectives on the underlying theoretical point. This conflation adjusts the type of instantiation at work here, allowing the example to function in different ways depending upon how particular readers engaged with its contents and its relationship to the theoretical text. It also evidences the ‘active’ role that Tinctoris intended his examples to play in theoretical demonstration.

Together, these elements would seem to suggest that Tinctoris was, at this point, concerned with the way that such examples were comprehended visually. Blackburn’s view places the probable readership of Tinctoris’s counterpoint treatise as a more expert readership. Under this view, the likely purpose of Book I was for it to act as a methodical statement of the fundamentals underpinning Books II and III which contained more interesting information for experienced readers.

It is possible, however, that the content of Book I was composed in such a way that it could, to some extent, address a readership with more limited musical literacy.⁶³ Tinctoris's carefully constructed text and examples would have made foundational musical points accessible to an audience with a good grasp of Latin if lacking extensive practical musical experience. Given the widespread use of Latin as the language of scholarship, this readership may have been familiar with theoretical texts from other disciplines, and therefore comfortable with the normal scholarly apparatus at this time, if not necessarily as well versed in musical matters. Members of this readership may have come from the intellectual community studying the texts of the kind held in the Royal Library of the Castelnuovo, or from courtiers, keen to demonstrate their erudition alongside more speculative disciplines.⁶⁴

Indeed, the notion of readership, particularly in relation to *De contr.*, is one that requires more detailed consideration. Thus far, the term has been used in a general sense to capture a wide range of readers of varying abilities and experiences. Despite the clear pedagogical emphasis of many of Tinctoris's treatises, it is important to consider the extent to which Tinctoris composed these treatises as an intellectual exposition of theoretical rules, possibly without a specific 'target' readership in mind. The complex intellectual underpinning of many treatises, particularly the treatises on imperfection and alteration as discussed later in this chapter, would support this notion of Tinctoris using the texts as a way of exploring the theoretical possibilities of certain notational aspects.

The sheer length of *De contr.* renders it a seemingly impenetrable text for the aspiring student, who could have been daunted by the scope of Book I alone before Books II and III were even considered.⁶⁵ This brings me to the second of the possible answers to the question posed earlier, that Tinctoris's treatises were conceived as theoretical compendia, designed to perform referential tasks. The inclusion of such detailed codification of intervals and their contrapuntal implications can be attributed, in part, to Tinctoris's own authorial intent as well as pedagogical vision. The reference

⁶³ My argument here aims only to broaden the scope of Blackburn's statement to include other aspects of Tinctoris's possible readership.

⁶⁴ Ronald Woodley has recently begun re-examining the origins of the two presentation volumes of Tinctoris's texts. See Ronald Woodley, 'The Dating and Provenance of Valencia 835: A Suggested Revision' (2013, rev. 2014), online, <http://earlymusictheory.org/Tinctoris/Articles/DatingAndProvenanceOfValencia835/#> (accessed 20 October 2014).

⁶⁵ The extent to which Tinctoris composed *De contr.* with such a volume in mind, particularly the latter stages of Book II and the entirety of Book III, is discussed in detail in Chapter Five.

material of Book I may have been prepared with particular readerships in mind, but it may not have been the primary motivating factor. Instead, the rare opportunity to produce an extended treatise on counterpoint in a luxury volume, with seemingly unrestricted page space and scope for exemplification, may have driven Tinctoris to leave no stone unturned in his pursuit of unambiguous codification of contrapuntal rules.

Nevertheless, the possibility that Tinctoris conceived Book I as a record of his own knowledge and skill does not diminish the pedagogical usefulness of its contents, both in didactic and referential terms. Thus, it is perhaps more useful to consider notions of multiple readerships rather than a single group: different groups could have read these texts differently, using elements of the theoretical whole in various ways to understand Tinctoris's theory. Indeed, the question concerning the influence of a particular type of volume upon the compilation of these treatises is explored more fully in Chapter Five, examining the more extended polyphonic miniatures, particularly those with additional intertextual references.

Expositio manus

There is further evidence to support the idea that some of the examples in Tinctoris's treatises, at least as they survive in **V**, **BU**, and **Br1**, were constructed to map text content into an exemplary form, often with additional annotations which may point towards readers of limited musical literacy. This group of readers does not preclude the existence of other, more professional, readership groups. The fact that this evidence can be found in one of Tinctoris's most elementary treatises, a contrasting text to *De contr.*, is particularly significant.

Chapter Two, *De locis* [On the positions], contains a diagram that maps out the conceptual musical pitch-space in a graphical manner that may be indicative of a different kind of reading practice from the main text. The example shown in Figure 40 accompanies Tinctoris's list of the positions on the gamut that follows an image of the Guidonian Hand. It includes the positions on the Hand in the centre of the diagram, grouped into three brackets on the left-hand side (*gravia*, *acuta*, *superacuta*) in a similar fashion to the example shown in Figure 25. The groupings are supplemented by the use of lines and spaces on the right-hand side that correspond directly to those used in staff notation. The staff lines are marked with annotations in the right hand margin which

read ‘spatiu[m]’ and ‘linea’, and by two further brackets that label pitch areas as high and low: ‘alta vulgariter’ and ‘bassa vulgariter’.

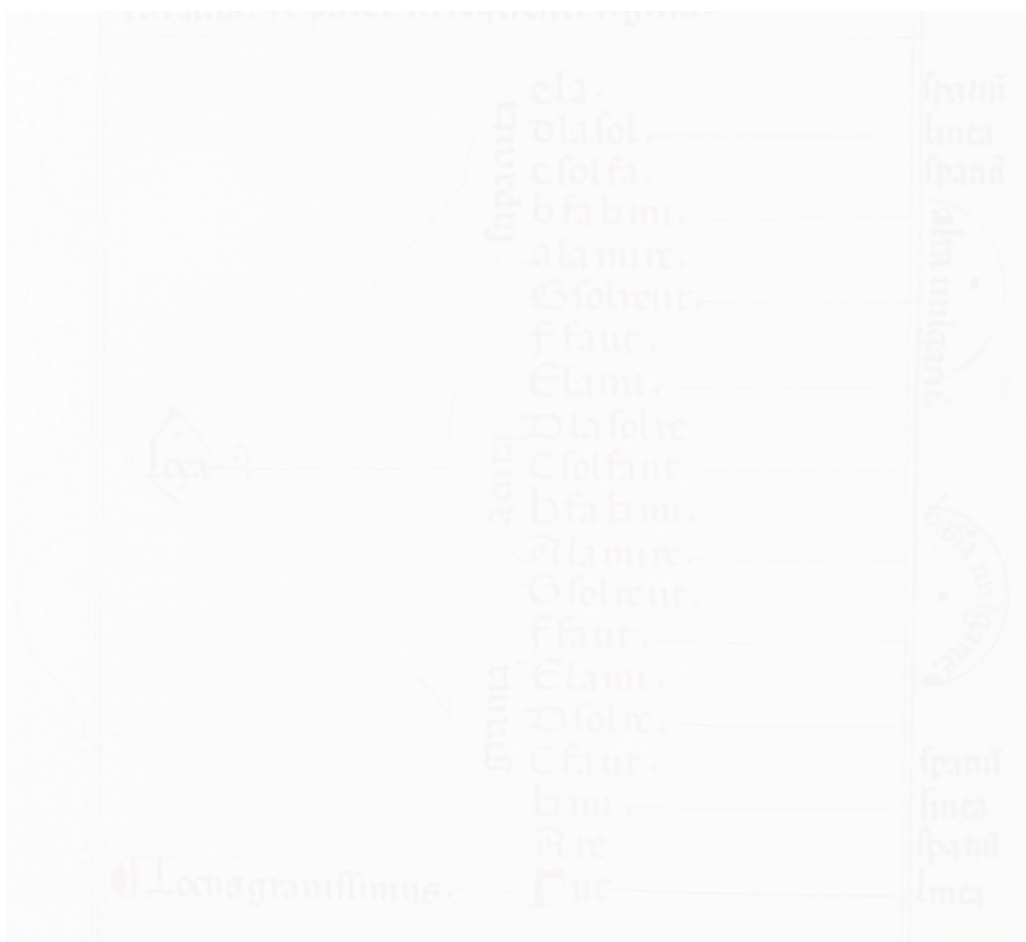


Figure 40. Tinctoris, *Exp. manus*, Ch. 2. Example showing the positions on the hand in a tabular form, arranged in ascending pitch order (E-VAu 835, fol. 4v).

The core of the diagram in Figure 40 seems straightforward and unremarkable, analogous with the use of tabular settings of the positions on the Hand in other contemporaneous texts. However, the addition of other labels that affirm the links between solmisation practices and staff-based notation is noteworthy and may give an insight into the types of readers Tinctoris envisaged engaging with his work.⁶⁶

The terms ‘gravia’, ‘acuta’, and ‘superacuta’ were in common use as indicators of pitch range in contemporaneous music theory treatises.⁶⁷ However, the inclusion of the labels ‘alta vulgariter’ and ‘bassa vulgariter’ is noteworthy, as these were not

⁶⁶ This is not to suggest that Tinctoris conceived his examples for a single readership group, rather, that some effort was made to make different aspects of the points accessible to many different readers.

⁶⁷ These terms all appear in Tinctoris’s *Diffinitorium* in definitions associated with the same topic. See Tinctoris, *Diffinitorium musicae*, ed. and trans. Carl Parrish, *Dictionary of Musical Terms by Johannes Tinctoris* (New York: Da Capo Press, 1978).

common in diagrams of this type in other similar texts. Indeed, to my knowledge, no theoretical treatise from the later part of the fifteenth century classifies pitch using these labels in diagrammatic terms.⁶⁸ The inherited Latin terminology would have been entirely sufficient to describe range and, in some ways, is more technically specific. Although these labels are drawn from classical terms, and could have been understood easily, Tinctoris's use of them might suggest an implicit recognition of performing musicians as a readership group here. 'Alta' and 'bassa' were probably commonplace in a rehearsal or performance context, which would almost certainly have taken place in the vernacular. The formalised Latin labels for range would have been rather clumsy to use in a practical context, and thus Tinctoris's approach might establish an implicit link between contemporary practices and established theoretical norms. These labels appear in all three sources, and thus their inclusion cannot be assigned to a scribal emendation or an anomalous entry: Tinctoris clearly intended for these to be part of the diagram (Figure 40).

These labels may also serve to clarify the range of notes identified as E la-mi through to B fa-b-mi, which are somewhat ambiguous given that they are expressed using the same solmisation syllables in both of the octaves that they appear in the range of gamut. If this is the case, it may refer to the specific descriptions applied by singers during rehearsal and performance to avoid ambiguity, thus providing a rare possible insight into contemporary rehearsal practices.

Unlike the 'alta' and 'bassa' range labels, the labelling of 'spatiu[m]' and 'linea', another seemingly unprecedented exemplification technique, only appears in **V**, although all three sources include the lines and spaces in the diagram. The appearance in **V** might suggest that this source offered additional support to readers who may have been less proficient in reading staff-based notation. The later examples in the treatise require an understanding of this, even at a basic level, and thus the example in **V** seems more prescriptive than strictly necessary. Tinctoris cleverly deploys these additional elements without detracting attention from the core theoretical point, showing a carefully considered approach to its exemplification, perhaps to facilitate different types of engagement.

⁶⁸ I have been unable to find any uses of the terms in diagrams accompanying hexachordal topics from the fifteenth-century treatises listed in the TML database.

However, the presentation of this example in **V** is illuminating in another, more intellectually pedantic, regard. The labels ‘spatiu[m]’ and ‘linea’ also relate to an earlier statement in the same chapter where Tinctoris’s discusses the nature of spaces and lines on a staff.

Hinc dicunt aliqui Γ ut in linea, A re in spatio, et sic de aliis alternatim. Verum ita dicere maximus est error, quia quom Γ ut ipsa linea sit et A re impsum spatium, et ita de ceteris alternatim, dici non possunt in linea vel in spatio locari.

Hence there are some who call Γ ut ‘on the line’, A re ‘in the space’, and so on alternately with the others. But it is the greatest error to speak in these terms, since Γ ut is the line itself, and A re is the space itself, and so on alternately with the rest; they cannot, therefore, be said to be positioned ‘on’ the line or ‘in’ the space.⁶⁹

Tinctoris refers to the lines and spaces as being an integral part of each position, rather than a point which notes are placed ‘on’ or ‘in’: the note *is* the space or line. Grounded in Aristotelian philosophy, Tinctoris’s inclusion of space and line labels in Figure 40 might refer back to this statement, offering an insight into philosophical conceptions of musical staff-space.⁷⁰ The use of these labels in **V** can therefore be viewed in two different ways, both of which contribute to an understanding of the pedagogical scope and structure of the treatise.

De imperfectione notarum musicalium

Thus far in this chapter there has been much evidence to suggest the careful consideration of exemplification strategies and their didactic usefulness. The treatise on imperfection differs markedly from *De contr.* and the *Exp. manus* in its approach towards exemplification, presenting significant challenges for the reader. However, careful consideration of this treatise offers yet more insights into different spheres of readership for one of Tinctoris’s most technically challenging notational treatises.

As discussed above, Tinctoris makes use of instantiation in the early part *De imperf.* The technical content of the treatise probably limited its likely readership, and it seems that a greater degree of prior knowledge was presumed. Strong interdependencies are also formed with *De alt.*, *De punct.* and, to a lesser extent, *De reg. val.*, demonstrating the notational technicality of the subject under discussion.

⁶⁹ Tinctoris, *Exp. manus*, ii., ed. and trans. Ronald Woodley, online, http://www.stoa.org/tinctoris/expositio_manus/expositio_manus.html (accessed 17 March 2015).

⁷⁰ This view of pitch-space is likely to derive from Aristotle’s *Categories* or *Metaphysics*.

In Figure 26, the contents of the theoretical text are projected clearly into musical notation resembling a realistic context, a practice fairly typical for examples from this treatise. However, this type of exemplification is not always executed as flawlessly as might be assumed given the ‘sheen’ of rigour found in this treatise. The first example from this treatise is illuminating in this regard (Figure 41).

This example follows a lengthy text-based exposition of the basic principles of imperfection, including a list of the note values that can be imperfected and a brief description of the relationship between these note values. Tinctoris writes:

Nanque minores note maiores imperficiunt, quo fit ut note maiores a minoribus imperficiantur. Hinc est quod longa maximam imperficit, et imperficitur a brevi, semibrevis, et minima. Brevis maximam et longam imperficit, et a semibrevis et minima imperficitur. Semibrevis maximam, longam, et brevem imperficit, et imperficitur a minima. Maxima a longa, brevi, semibrevis, et minima imperficitur, et, quia maiorem non habet, nullam imperficit. Minima vero maximam, longam, brevem, et semibrevis imperficit, et, quia minorem non habet, a nulla imperficitur, ut in sequenti exemplo:

Hence it is that the longa imperfects the maxima, and is imperfected by the breve, semibrevis, and minim. The breve imperfects the maxima and longa, and is imperfected by the semibrevis and minim. The semibrevis imperfects the maxima, longa, and breve, and is imperfected by the minim. The maxima is imperfected by the longa, breve, semibrevis, and minim, and, because it does not have a larger one, it imperfects none. The minim, on the other hand, imperfects the maxima, longa, breve, and semibrevis, and because it does not have a smaller one, it is imperfected by none, as in the following example:⁷¹

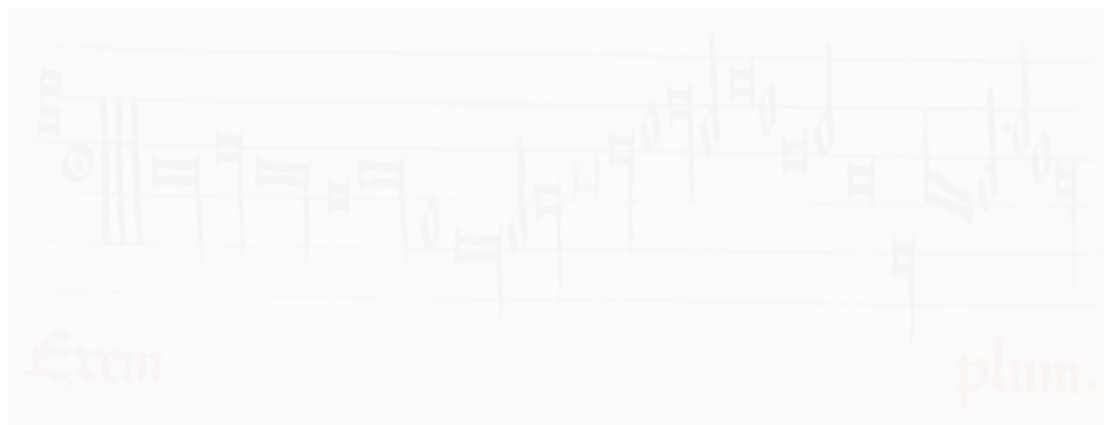


Figure 41. Tinctoris, *De imperf.*, I.i.29–34. Example showing instantiation through projection, with a degree of assumed knowledge affecting the conclusion of the example (E-VAu 835, fol. 56).

⁷¹ Tinctoris, *De imperf.*, I.i.29–34.

The construction of the text here is very similar to that which accompanied Figure 26, facilitating strong links between the theoretical point and the musical example. These links outline the relationships between note values and types of imperfection, establishing a foundational point. Many of Tinctoris's other treatises include numerous instances where the ordering of text material is matched in the musical demonstrations. In this case, however, the reader would have been required to understand imperfection rules not discussed until much later in the treatise.

Although Tinctoris includes graphics of the noteshapes earlier in this passage of the treatise, it seems unlikely that an inexperienced musical reader could have sufficiently understood how note value relationships affected the type of imperfection at work from the text and graphical examples alone. Therefore, the different construction of this example would seem to support the notion that the treatise on imperfection had a different, probably more advanced readership, in mind.⁷² This is not to say that inexperienced musical readers, or non-musical intellectual readers familiar with Latin could not have attempted to read the text. Rather, it seems that Tinctoris did not construct this part of the treatise with such an inexperienced readership in mind, particularly in regard to notational realisation. His attempts at codification in this text, and the treatise on alteration, although pedagogically useful, may have been motivated by a desire to explore intellectual possibility rather than practical necessity.

It is clear that these examples follow a logical ordering for the most part, demonstrating the pedagogical underpinning of this intellectually complex text. The systematic descent through the mensural levels would have allowed a reader to see which note values could be imperfed by smaller note values, requiring only a reasonable level of musical literacy. However, without the guidance of a tutor, such a reader would probably not have understood the rhythmic implications in full, or have been able to resolve the notation completely.

Perhaps the most interesting feature of the example shown in Figure 41 is that it demonstrates aspects of imperfection that are not explored until much later in the sequence of general rules. At the nineteenth note of the example, Tinctoris introduces a type of imperfection that is not explicitly listed in the text here: the breve (nineteenth

⁷² The use of monophonic examples for demonstrating imperfection was not one of Tinctoris's innovations. However, his decision to explore the full limits of the mensural system through them is, to my knowledge, highly innovative.

note) following the minim imperfects the following longa *a parte ante* rather than *a parte post*.

Imperfection of this type is not discussed until the eighth general rule, questioning the order of material in Tinctoris's general rules and their manifestation in the composition of examples. After an instance where a minim imperfects a semibreve *a parte post*, the mensural puzzle concludes with another case of imperfection *a parte ante*. For this instance, a minim (separated from the preceding minim by a dot) imperfects the following semibreve *a parte ante*, which collectively imperfects the concluding longa.

In many cases, Tinctoris includes a short passage at the end of musical examples that does not relate directly to the structure or content of the text, but can still be understood using basic mensural knowledge. Such content probably functioned as filler material. However, in this instance, a reader would have required prior knowledge of the rules of imperfection in order to be able to properly resolve this mensural puzzle without the help of a tutor. The inclusion of two instances of this sort in a single example is highly unusual in Tinctoris's output.

Such an approach forms an interesting relationship with the text, which, although founded upon the instantiation model, is more complex than it might first appear. The first eighteen notes of this example are mapped in a way that maintains the text order, with relatively little contextual material added to embellish the musical example. However, the final part of the example, which introduces imperfection *a parte ante*, and demonstrates the imperfection of a semibreve by a minim (albeit one preceding and not following as the text would implicitly suggest), is not mapped from the theoretical text in the same way, and thus operates in a broader contextual role.

This example, then, could have been understood in a number of ways, and, by implication, read in different ways by different readerships. Despite containing pitch content, the notation could have been interpreted in a purely graphical manner. This type of reading would have allowed the reader to understand the notational point and conceptualise the rhythmic point alongside the theoretical text. However, to resolve the musical notation correctly, a certain degree of prior knowledge is required, and thus the ordering of his general rules must be called into question. Perhaps, such musical examples were underpinned by a different pedagogical logic that we are yet to fully understand. Nevertheless, their intellectual function is clear.

A brief comparison with the approach towards this type of example in the *Proportionale musices* might further elucidate the didactic usefulness of such examples. Throughout *Prop. mus.*, Tinctoris frequently presents examples demonstrating rhythmic points as two-part miniature compositions. These examples, despite being polyphonic, function in much the same manner as those in *De imperf.* Although the polyphonic nature of the examples in *Prop. mus.* might appear to add a layer of complexity, its effect when read might have simplified the reading process for an inexperienced reader.

The addition of a Tenor probably acted as a kind of rhythmic guide voice. This allowed proportional relationships to be understood more easily because the rhythmic effect of the proportional change could be seen in relation to a simple Tenor, ensuring ‘user-friendly’ exemplification. In these instances, the *Prop. mus.* offered a carefully constructed pedagogical unit that played an active role in the demonstration of the theoretical point.⁷³

In this context, the decision to use highly complex monophonic examples in the treatises on imperfection and alteration might seem curious from a pedagogical perspective, given that both treatises were almost certainly completed after *Prop. mus.* However, the majority of theoretical texts dealing with these issues before Tinctoris had adopted a monophonic exemplification strategy, even if at a different level of complexity. In any case, the complex monophonic mensural puzzles offered as examples in these treatises could probably have been realised more easily with a referential voice underlying the complex layers of imperfection and alteration taking place, often across multiple mensural levels, even accounting for differences between modern and contemporary reading practices.

This comparison with the *Prop. mus.* suggests that Tinctoris did not always approach similar examples in the same way across his theoretical output, deciding instead upon an exemplification strategy that was most appropriate to the treatise at hand. The decision to use monophonic rather than polyphonic examples may, however, relate to a reading practice associated with mensural notation that we do not understand fully. In any case, it seems that the treatise was targeted at readers with an advanced musical knowledge as an intellectual exposition of the possibilities of imperfection, even if small concessions were made to aid other readerships.

⁷³ These examples are discussed more fully in Chapter Five.

This seeming recognition of different readerships is less obvious in the treatise on imperfection and, to some extent, is addressed less effectively than it is in the treatises on the Hand and counterpoint. The complexity of subject matter, however dispiriting it might have been for an aspiring student, was essential to understanding mensural notation, and thus the levels of complexity are entirely necessary, though it seems fair to suggest that Tinctoris could perhaps have exemplified them in a more instructionally useful manner, possibly by adopting a similar strategy to *Prop. mus.*

However they might have been used, these texts were probably not intended as pedagogical texts for the aspiring student, and thus a different type of exemplification is at work. Instead, it seems more likely that the imperfection and alteration treatises acted as theoretical repositories that explored the intellectual possibilities of mensural notation. The fact that the possibilities demonstrated in these examples sometimes extend far beyond even the most complex notational scenarios found in practical sources would seem to support this interpretation, a point further evidenced by one of the most complex examples from *De imperf.*

The problems encountered when realising these complex examples without the aid of a referential guide voice are made particularly apparent in the latter stages of Tinctoris's general rules of imperfection.⁷⁴ His twelfth general rule states:

Duodecima regula generalis est quod nota cui punctus divisionis appositus est imperfici potest, ut hic patet:	The twelfth general rule is that a note to which a dot of division is applied can be imperfected, as is clear here: ⁷⁵
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Figure 42. Tinctoris, *De imperf.*, I.iii.52. Tinctoris's twelfth general rule of imperfection (E-VAu 835, fol. 60).

⁷⁴ These general rules seemingly increase with complexity as they progress, though there are some interrelationships between rules that question the pedagogical logic of their ordering. Intriguingly, some later theorists, including Gaforus, chose to approach such complex mensural issues with polyphonic examples.

⁷⁵ Tinctoris, *De imperf.*, I.iii.52.

The deceptively simple text is accompanied by arguably the most complex monophonic demonstration in the whole text (Figure 42), and would almost certainly have benefited from the addition of a referential tenor voice. Although presenting significant intellectual challenges, the example can be resolved if considered alongside Tinctoris's other general rules, and in conjunction with aspects of the treatises on alteration and musical dots.

The first longa is imperfed by the preceding breve, with the *punctus divisionis* ensuring that this longa is not counted together with the two longa-equivalent groups that follow.⁷⁶ Instead, this first longa group is carried over to imperfect the first maxima. Due to the *punctus divisionis* placed after the first longa, the second of the two longas that follow it is altered and the first is divided into its constituent parts. This type of alteration is discussed as the fifth general rule in Tinctoris's treatise on alteration, but is not discussed explicitly in the imperfection treatise, thus requiring the reader to be aware of the principles of alteration to resolve this example correctly.

The addition of a *punctus divisionis* before the first breve, whilst not strictly necessary, serves to clarify that the two-note longa equivalent group was to be carried over to affect the imperfection of the first maxima of the example as well as imperfecting the first longa. This dot would also have helped to prevent the dot following the first longa being misread as a *punctus perfectionis*. In an indirect sense, this addresses one part of Tinctoris's twelfth general rule of imperfection, as it implicitly recognises that a *punctus divisionis* does not preclude the imperfection of a note.

After the maxima which is followed by a rest creating a sectional division, Tinctoris follows a similar model to continue the example at a lower mensural level. A *punctus divisionis* is placed after the breve, preventing it from imperfecting the following longa, but not precluding its imperfection by the preceding semibreve. Unlike the first half of the example, however, this breve-equivalent group is not carried over to imperfect the next available larger note (longa as the fourteenth note of the example) due to its 'partner notes' forming two breve-equivalent groups.

After the next dot, Tinctoris explores the next mensural level, placing a semibreve, minim, and longa in an ascending figure. The longa is imperfed *a parte*

⁷⁶ I am grateful to Ronald Woodley for sharing his copious draft annotations on the examples from the imperfection treatise. The discussion here draws heavily upon these.

ante, quantum ad unam partem propinquam by the preceding semibreve-equivalent group. By implication, a second type of imperfection occurs, where the semibreve is imperfed by the minim that follows it, thus forming a semibreve-equivalent group. The example then concludes with a relatively simple case of imperfection, where the final longa is imperfed by the preceding breve in ligature, before concluding with a maxima.

Given that this example accompanies the twelfth of Tinctoris's thirteen general rules, a certain level of complexity is to be expected. However, the complexity of the example is, somewhat unusually, most apparent in its early stages, with the later phases of imperfection being relatively straightforward to realise.⁷⁷ In order for a reader to understand and resolve the musical notation, a full understanding of Tinctoris's twelfth general rule, and those that preceded it, would have been required. In providing only a monophonic example, Tinctoris leaves the reader to resolve the mensural puzzle without the help of a referential voice. However, the main theoretical point of the example is easily identifiable, at least in an isolated sense.

The specific point on display in the notation is that a *punctus divisionis* does not preclude imperfection, something that could have been demonstrated in a much more straightforward fashion. Indeed, Tinctoris has partially demonstrated this point by the time the third note is to be sounded, though its full implications become more complex as the example explores the use of the *punctus divisionis* on other mensural levels.

Thus, the main thrust of the twelfth general rule is demonstrated clearly in this example, with the initial dot serving to clarify the function of the second dot. There are, however, other aspects of imperfection on display in this example that relate to previous theoretical points. For example, the 'carrying over' of mensural units to imperfect larger notes later in the example is discussed in some of Tinctoris's other general rules. The theoretical point does not outline the proper principles of alteration to be followed if the first *punctus divisionis* is interpreted correctly, highlighting another instance where prior knowledge is seemingly presumed and interrelationships between Tinctoris's notational texts are formed.

In terms of exemplification strategy, this example contains elements of the projection variant of the instantiation exemplification model. An instance of the clearly defined theoretical point of Tinctoris's text, which is further clarified by an additional

⁷⁷ This is, of course, contingent upon the rest of the example being resolved correctly.

example and text statement, is presented within a broader mensural context. This requires knowledge that is not discussed explicitly in this treatise, further highlighting the web of interdependencies between this text and some of Tinctoris's other treatises.

The fact that Tinctoris adopted a different style of example for mensurally complex pedagogical miniatures in his *Prop. mus* raises significant questions about his motives for this approach. A second polyphonic voice, as outlined above, would have provided a reference point that allowed a reader to resolve the mensural puzzle with the 'safety net' of consonance rules to prevent any major misinterpretation. Thus, Tinctoris's approach in the imperfection treatise is perhaps not the most instructionally useful one, something that might be explained partially through a consideration of the function of such a text.

The level of notational sophistication would have provided intellectual challenges for even Tinctoris's most experienced musical readers. At this time, mensural canons, verbal canons, and other musical puzzles were the delight of composers, such as Okeghem and, especially, Busnois.⁷⁸ Tinctoris's examples are often much more complex than the most challenging canons or notational puzzles in extant practical works, suggesting that Tinctoris was exploring, perhaps even exploiting, the full limits of the mensural system. The notational form/appearance of musical passages clearly held an intellectual significance unparalleled in modern notation, and thus the notational possibilities themselves were of theoretical interest. The fact that one could not simply read this notation from left to right, particularly in cases where imperfection takes place by remote groupings, perhaps renders it some of the most complex musical notation to survive. It would seem that Tinctoris's usual pedagogically driven approach is replaced with something more intellectually challenging, indicating a different purpose for the text. This approach appears to be focused upon challenging reader understanding and activating the musical example as part of the theoretical whole in different ways.

⁷⁸ Busnois's *Maintes femmes* is one such composition. Tinctoris cites a different passage of the same work to demonstrate dissonance practice in *De contr.*, II:29. See Helen Hewitt, 'The Two Puzzle Canons in Busnois's *Maintes femmes*', *Journal of the American Musicological Society*, 10/2 (1957), pp. 104–110.

De regulari valore notarum

Similar types of complex exemplification are found in *De reg. val.* However, there are two particularly noteworthy cases that pose some interesting questions relating to readership, and the likely function of such technical texts. These two examples appear consecutively in xiii and xiv, and demonstrate major and minor prolation. Tinctoris writes:

Capitulum XIII – *De signo prolationis maioris*

Signum prolationis maioris est punctus in medio circuli perfecti vel imperfecti positus, ut hic:

EXEMPLUM

Capitulum XIV – *De signo prolationis minoris*

Signum prolationis minoris est absentia puncti de medio circuli perfecti vel imperfecti, ut hic:

EXEMPLUM

Chapter 13 – On the sign of major prolation

The sign of major prolation is a dot positioned in the middle of a perfect or imperfect circle, as here:

EXAMPLE

Chapter 14 – On the sign of minor prolation

The sign of minor prolation is the absence of a dot from the middle of a perfect or imperfect circle, as here:⁷⁹

EXAMPLE



Figure 43. Tinctoris, *De reg. val.*, xiii–xiv. Examples showing superposed signatures to demonstrate the function of both prolations under different types of tempus (E-VAu 835, fol. 51).

⁷⁹ Tinctoris, *De reg. val.*, xiii–xiv.

The provision of two mensuration symbols to allow alternative mensural realisations of identical musical content might suggest that Tinctoris thought that the effects of major prolation in two different types of tempus would be highlighted most clearly to a reader if they used the same material. In interpreting the notation in two different ways, a reader would have been able to see, if realised correctly, how the emphasis of the *mensura* shifted depending upon the quality of tempus, even when prolation remained unchanged. Other cases of small degrees of change between examples have been discussed above (see Figure 39), but few have offered an example that can address both parts of a theoretical point by being realised in two ways.⁸¹ This case, although somewhat anomalous, is therefore highly intriguing.

The use of superposed mensuration symbols, though not all that common in extant practical sources, can be found in some high profile works, albeit operating on a much larger scale and normally deployed for canonic usage. Okeghem's *Missa Prolationum* is perhaps the most famous instance of this practice, whereby two pairs of voices are presented in a two-fold canon that builds up the polyphonic texture in the opening Kyrie.⁸² In the Kyrie, each pair is cast under the same type of prolation but a different quality of tempus. The noteshapes of each pair are the same, with the mensuration alone rendering different durational results, much like Tinctoris's example here. However, Tinctoris does not intend for the two to be sounded canonically as Okeghem did, but rather shows how the quality of tempus (and prolation) can affect the levels of imperfection and relative durations of note values. Okeghem's mass, probably dated slightly before the composition of *De reg. val.*, goes significantly further in its exploration of superposed mensurations in a canonic sense, governing the counterpoint and overall structure. Nevertheless, the same basic principle is at work, showing at least a partial musical precedent for Tinctoris's technique.⁸³

(accessed 19 March 2015). I presented a paper on this topic at the 2015 Medieval and Renaissance music conference.

⁸¹ This approach is particularly prevalent in *De ton.* with modal classifications and modal mixtures.

⁸² To the best of my knowledge, Okeghem's *Missa Prolationum* and *Requiem* are the only two fifteenth-century pieces where two different mensuration signs are used simultaneously. See Bonnie J. Blackburn, 'Did Okeghem listen to Tinctoris?', *Johannes Okeghem: Actes du XLe Colloque international d'études humanistes*, ed. Philippe Vendrix (Paris: Klincksieck, 1998), p. 612. The *Missa prolationum* survives in only two sources, one of which is the Chigi Codex (V-CVbav Chigi C.VIII.234). In this source, the mensuration signs are placed side-by-side, though the effect is identical.

⁸³ On Okeghem's use of canons see, Leeman Perkins, 'Okeghem's *Prenez sur moi*: Reflections on Canons, Catholica and Solmization', *Musica disciplina*, 44 (1990), pp. 119–183.

Summary

Over the course of this chapter, much evidence has been presented to suggest that Tinctoris's approach towards the exemplification of his points was carefully considered under the instantiation model in all of its variants. There is a significant body of evidence to suggest that elements were added to the notation to strengthen the text–example relationships and, perhaps, to enhance the didactic usefulness of examples within certain contexts. Although this can be attributed partially to Tinctoris's meticulous (bordering on pedantic) theoretical persona, the techniques used seem too deliberate to be ascribed wholly to this. Instead, Tinctoris probably wanted to provide the most exhaustively comprehensive theoretical texts of his age, particularly for the luxurious presentation volumes **V** and **BU**. He was perhaps aware of the likelihood of his texts being consulted by the next generation of theorists, with his compendia becoming embedded in the practical imagination through the works of Franchinus Gaforus, amongst others. However, there are clear didactic elements in many of his texts, suggesting that they may have been used, in one form or another, as teaching texts of sorts.

Indeed, evidence for a kind of 'tailoring' in this regard is found most clearly in the presentation of the *Exp. manus* and *De contr.* in **V** and **BU**. However, it is significant that Tinctoris seemingly made some effort to present material in a form that could be understood by a number of different readership groups, even in his highly technical *De imperf.* and his *De reg. val.*, which were probably not conceived as teaching texts, even if to a lesser extent.

The evidence compiled from this examination of the instantiation model and its variants, suggests that Tinctoris recognised the needs of his readers and went to some efforts to facilitate their understanding. To my knowledge, none of Tinctoris's contemporaries went to such great lengths to ensure that their theoretical points could be understood, at least to some extent, by such a diverse range of readers. This range probably included enthusiastic courtly amateurs as well as trained musicians and expert theorists. As will be shown in Chapters Four and Five, the techniques of accommodating different groups of readers are not confined to examples accompanying 'basic' theoretical points, but continue to be applied to more complex scenarios. Such applications include citations from pre-existent works and newly composed pedagogical miniatures, constructed specifically for theoretical demonstration. These

other examples often work with those examined in this chapter to form units of exemplification that function within the theoretical 'whole'.

Chapter Four: Citations from Existing Compositions

But he who understands all this, and selects examples that are most appropriate, and reduces to individual principles of instruction everything that especially merits inclusion in his treatise, must needs be a master artist in this field. This, then, is the height of technical skill—in one's own treatise to succeed also in using borrowed examples!¹

If there is one aspect of Tinctoris's use of musical examples in his notational treatises to have attracted a significant amount of scholarly attention, it is his use of citations from existing compositions. Almost certainly grounded in the tradition of exemplification outlined in Book IV of the *Rhetorica ad Herennium*, a book which Tinctoris almost certainly knew from his study of the classics, such citations often abstract two voices from a larger polyphonic texture, though there are instances where the complete polyphonic texture is included. These citations are used to demonstrate a range of theoretical points and appear with the greatest frequency in *De arte contrapuncti* and the *Proportionale musices*, though citations are also found in *De imperfectione notarum* and *De alteratione notarum*. They account for a small yet significant portion of his examples, and thus require a detailed discussion of their own. In almost all cases, these examples are included to demonstrate a contemporary practice that Tinctoris takes issue with. Tinctoris's misgivings about contemporary compositional and notational practices usually centre on technical grounds concerning ambiguous symbols and indications, improper dissonance treatment, or erroneous notation. Most citations from existing works are supported by demonstrations of 'correct' practice in his newly composed pedagogical miniatures.² There are also instances where Tinctoris refers to a work by title without providing any musical notation, which tend to be used as examples of particular stylistic features or broader compositional approaches that could not be adequately demonstrated in short notated citations.

As shown in Part One of this thesis, Tinctoris was not the first theorist to make use of citations from existing musical compositions in a theoretical context. Franco of Cologne, building on the work of Magister Lambertus and the Anonymous of St Emmeram, was among the first to make extensive use of such citations in his *Ars cantus*

¹ *Rhetorica ad Herennium*, IV.ii.3, ed. and trans. Harry Caplan, Loeb Classical Library 403 (Cambridge, MA: Harvard University Press, 1954, reprint 1999), pp. 233–235.

² There are, however, a few exceptions to this, as will be discussed periodically throughout this chapter.

mensurabilis (c. 1280), though he did not name the composers of the pieces he drew upon, or use the examples to critique notational practices, quite in line with theoretical traditions.³ Tinctoris, however, makes use of citations in a much more critical way, often lambasting composers for their ‘bad’ practice. His usage of these seems to have been motivated by a pedagogical desire to prevent erroneous practices being imitated by young composers, somewhat analogous with the criticisms of Plautus and the historian Coelius Antipater on grounds of style in the *Rhetorica ad Herennium*.⁴ It was not, as was the case for Franco’s treatise, a method aimed at providing additional authority to his texts following medieval patterns of scholarship.⁵

Tinctoris’s decision to name the composers and works that he finds error with is, to my knowledge, without precedent in the music-theoretical sphere.⁶ In this chapter, the methods of exemplification for this type of example will be examined in more detail, offering new perspectives on the exemplary content from some of his most studied texts.

Before examining Tinctoris’s use of citations from pre-existent musical works, it is worth setting out some brief thoughts on his intellectual methods. Tinctoris’s theoretical treatises approach materials quite differently from other texts that we consider as ‘music theory’ from this time: Tinctoris is writing about the practice of music within the context of real pieces of practical music. He focuses upon specific instances of phenomena that illustrate, in many cases, the ambiguities inherent in

³ The so-called Anonymous of St. Emmeram also used a similar technique at a slightly earlier date than Franco’s treatise was likely to have been composed. That said, the dating of Franco’s treatise rests partly upon the fact that it is not cited in the Anonymous of St. Emmeram’s treatise, and thus its date remains rather speculative. See Anonymous of St. Emmeram, *De musica mensurata*, ed. and trans. Jeremy Yudkin (Bloomington: Indiana University Press, 1990), esp. pp. 34–43. Early theorists were concerned primarily with supporting their arguments rather than offering critical evaluation of contemporary notational practices. See also Jeremy Yudkin, ‘Ut hic: Announcing a Study of Musical Examples in the Thirteenth-Century Music Theory Treatises’, *Essays on Medieval Music in Honor of David G. Hughes*, ed. Graeme M. Boone (Cambridge MA: Harvard University Press, 1995), pp. 471–485. The examples from this treatise are discussed extensively in Chapter Two.

⁴ Harry Caplan, ‘Introduction’, *Rhetorica ad Herennium*, p. xvii.

⁵ This issue in Franco’s texts is discussed more thoroughly in Christian Thomas Leitmeir, ‘*Sine auctoritate nulla disciplina est perfecta*: Medieval Music Theory in Search of Normative Foundations’, *Between Creativity and Norm Making: Tensions in the Later Middle Ages and the Early Modern Era*, ed. Sigrid Müller and Cornelia Schweiger (Leiden: Brill, 2013), pp. 31–60; Leitmeir, ‘Types and Transmission of Musical Examples in Franco’s *Ars cantus mensurabilis musicae*’, *Citation and Authority in Medieval and Renaissance Culture: Learning from the Learned*, ed. Suzannah Clark and Elizabeth Eva Leach (Woodbridge: The Boydell Press, 2005), pp. 41–44.

⁶ The Anonymous of St. Emmeram is direct in his criticisms of Magister Lambertus, though these are based upon purely theoretical grounds, principally Lambertus’s advocacy of nine rhythmic modes, and do not relate to musical compositions. Music-theoretical criticisms of this sort can be traced back at least as far as Boethius’s criticisms of Aristoxenes. Tinctoris, however, criticises composers by name and piece, rendering this as a different type of criticism.

approaches that are not his own. Tinctoris rarely admits the existence of contrary theoretical opinions, and when he does, he simply refers to these as the views of others (*alii*). His approach in this regard is quite distinct from his quotation and allusion to other authors. Thus, this practice-based approach adopted for the majority of his notational treatises is quite different from that adopted when invoking quoted passages of authoritative texts in the non-practical treatises.⁷ As will be shown in the following chapter, Tinctoris's approach towards musical citations goes beyond mere allusion, instead focusing upon interrogation of these contemporary sources for a multitude of theoretical transgressions.

Context-based critical exemplification through citation

This first section of this chapter will focus on citations that contain only selected voice parts, normally two, from a larger polyphonic composition. Examples of this type often form a relationship with the text that is founded upon text-based criticism of contemporary practice: this type of citation will be described as 'context-critical'. Often, the points that Tinctoris criticises occupy a space on a spectrum of 'accepted' practice by his contemporaries, with his own views sometimes being rather out of kilter with practical norms, though there are one or two instances where he criticises highly unusual practices. In many cases, Tinctoris uses citations from apparently well-known works by the major composers of the era, such as Guillaume du Fay, Johannes Okeghem and Antoine Busnoys. The repertory that he cites would almost certainly have been well known to a wide range of readers in Naples (and beyond), and is probably indicative of the kind of repertoire young composers might study.⁸ The use of such works, in the context of other remarks on their practice, might imply that Tinctoris had connections and associations, possibly personal, with some of the Franco-Flemish compositional masters. The polyphonic works cited as examples are often among the most widely-circulated pieces from the second half of the fifteenth century, with many

⁷ Tinctoris's quotations of this type of material are discussed more fully in Rob C. Wegman, 'Tinctoris's *Magnum Opus*', *Uno gentile et subtile ingenio: studies in Renaissance music in honour of Bonnie J. Blackburn*, ed. M. Jennifer Bloxam, Gioia Filacomo and Leofranc Holford-Strevens (Turnhout: Brepols, 2009), pp. 771–782; Jeffrey Palenik, *The Early Career of Johannes Tinctoris: An Examination of the Music Theorist's Northern Education and Development*, PhD diss. (Duke University, 2008); Jeffrey J. Dean, 'Tinctoris, his Greek authorities, and *De inventione et usu musicae*' (print publication forthcoming). I am grateful to Jeffrey Dean for sharing advanced drafts of material leading to this book chapter.

⁸ This is somewhat analogous with the approach taken by Franco of Cologne and several 'Ars nova' treatises, though these theorists do not approach such citations critically as Tinctoris does.

works surviving in multiple sources spread both geographically and historically, though there are a few cases where Tinctoris's citations are the only surviving remnants of works now thought to be lost.⁹ It seems likely that these citations were taken from pieces in Tinctoris's personal collection, a point to which I will later return.¹⁰

In many cases, examples of this type work in tandem with one of Tinctoris's newly composed pedagogical miniatures. These miniatures will be discussed in Chapter Five. As a general rule, Tinctoris uses the existing citations to demonstrate 'bad' practice, using his own miniatures to demonstrate exemplary practice that a young student should follow.¹¹ For the most part, Tinctoris uses citations to demonstrate particular compositional and notational practices, offering instances of the broader theoretical issue in contemporary composition.

Given the variety of points requiring demonstration through such citations, the relationships formed between text and, unusually, other musical examples, are much more varied and case-specific than the relationships discussed in Chapter Three. This chapter will draw upon Chapter Three and set out some key issues to be discussed further in Chapter Five.

De imperfectione notarum

The treatise on imperfection is dominated by monophonic examples that are without doubt of Tinctoris's own composition, given their obvious connection to the text and stylistic similarities to his other examples.¹² However, there is a single instance at the end of Book I where Tinctoris cites the works of two composers to demonstrate different aspects of a single theoretical point. These two citations are taken from works

⁹ On this issue in Tinctoris's works, and those of other theorists see Gianluca D'Agostino, 'Reading Theorists for Recovering "Ghost Repertoires": Tinctoris, Gaffurio and the Neapolitan Context', *Studi Musicali*, 34 (2005), pp. 25–50.

¹⁰ The fact that Tinctoris refers to a Royal Book [libro regius] for a citation from Binchois's 'Patrem' in the irregular third authentic mode in III:2 of his *Prop. mus.* would suggest that he used other sources for the majority of his citations. This 'royal book' was probably a book in the royal library rather than the chapel collection. Thus, it seems likely that he used sources that he either owned or had frequent access to, perhaps the choirbooks of the royal chapel. Tinctoris may also have transcribed sections from other manuscripts into something akin to a commonplace book whilst he was active at Orléans or Chartres, or from other musical manuscripts: see Jessie Ann Owens, *Composers at Work: The Craft of Musical Composition 1450–1600* (Oxford: Oxford University Press, 1998), pp. 108–135. Johann Frosch advocates such a practice in his *Rerum musicarum opusculum* (Strasburg: Peter Schoeffer & Mathias Apiarius, 1535), xix. 15, sigs. [D6]v–Er: see Owens, *Composers at Work*, p. 191.

¹¹ The potential implications of a game of intellectual 'one-upmanship' are intriguing here, but beyond the scope of this thesis. A similar technique is advocated in *Rhetorica ad Herennium* IV:1–7.

¹² To the best of my knowledge, these examples do not survive in any other treatise, and thus it is all but certain that Tinctoris composed them specifically for the immediate purpose. In these examples, Tinctoris directly maps the theoretical content in such a way that the example was clearly conceived in response to the theoretical text, though not always in the flawless way one might expect.

by Barbingant and Petrus de Domarto, two composers whose compositions received relatively modest circulation in this period.¹³ Significantly, the works of Petrus de Domarto are cited numerous times across Tinctoris's output, with his compositions being among Tinctoris's favourite targets for criticism.¹⁴ Tinctoris writes:

Forte dicent aliqui, Tinctoris nimium presumit asserendo notam augmentatam imperfici non posse, quom De Domarto in tenore Patrem quinti toni irregularis et Barbingant in tenore cantilene Lomme bani contrarium fecerint, ut hic patet:

[EXEMPLA]

Quibus respondeo, licet Busnois aliique complures illos imitati fuerint, quod nullos tanquam nomini alicuius invidens reprehendere presumo, sed amicam veritatem quoad possum sustinens errasse demonstro. Errantes quoque nomino ne falsa opinione decepti propter famam immortalem quam sibi dulcissime componendo pepererunt in hoc iuvenes eos imitentur, omnia facta eorum perfecta existimantes, quod longe aliter se habet. Nanque, ut sapientes asserunt, nihil est ab omni parte perfectum.

Perhaps some will say, "Tinctoris presumes too much in asserting that an augmented note cannot be imperfected, since De Domarto in the tenor of his Patrem in the irregular fifth tone, and Barbingant in the tenor of his song 'L'omme bany', have done the opposite", as is clear here:

[EXAMPLES]

To whom I reply, although Busnoys and many others may have imitated those, that I do not presume to find fault with people as if envying someone's reputation, but rather, upholding friend Truth to the best of my ability, I demonstrate that they have erred. I also name those erring, lest the young, deceived by false opinion on account of the undying fame that they have created for themselves by composing so very beautifully, imitate them in this, esteeming all their achievements to be perfect, which turns out to be far otherwise. For, as the wise state, nothing is perfect in every respect.¹⁵

¹³ On Barbingant see Charles Hamm, 'Another Barbingant Mass', *Essays in Musicology in Honor of Dragan Plamenac on his 70th birthday* (Pittsburgh: University of Pittsburgh Press, 1969), pp. 83–90 and Charles Warren Fox, 'Barbireau and Barbingant: a review', *Journal of the American Musicological Society*, 13 (1960), pp. 79–101. See also, David Fallows, 'Barbingant', *Grove Music Online. Oxford Music Online* (Oxford University Press),

<http://www.oxfordmusiconline.com/subscriber/article/grove/music/02009> (accessed 30 March 2015).

¹⁴ Tinctoris cites De Domarto's *Missa Spiritus almus* a number of times across his notational treatises as an example of 'bad' practice, both in relation to notation and dissonances: see *Prop. mus.*, III.ii.21, III.v.8; *De contr.*, II.xxix.3. On De Domarto's work, see Rob C. Wegman, 'Petrus de Domarto's "Missa Spiritus almus" and the Early History of the Four-Voice Mass in the Fifteenth Century', *Early Music History*, 10 (1991), pp. 235–303. Richard Taruskin calls De Domarto 'Tinctoris's perennial whipping boy': see Richard Taruskin, 'Antoine Busnoys and the *L'homme armé* Tradition', *Journal of the American Musicological Society*, 39 (1986), p. 284.

¹⁵ Tinctoris, *De imperf.*, I.iii.56–59, ed. and trans. Jeffrey J. Dean and Ronald Woodley, *Early Music Theory Online*, <http://earlymusictheory.org/Tinctoris/texts/deimperfectionenotatum/#pane0=Edited> (accessed 6 October 2014).



Figure 45. Tintoris, *De imperf.*, I.iii.56–59. Two citations from existing works showing the imperfection of augmented notes (E-VAu 835, fol. 60v).

The citation from De Domarto's 'Patrem' is the first of the pair of citations shown in Figure 45. Tintoris draws this citation from the 'Patrem' of an anonymous untitled mass uniquely preserved in V-CVbav S. Pietro B 80 with an added Kyrie ascribed to 'Egidius Cervelli' (probably Egidius Crispini or Gilles Crépin); the remaining sections are attributed to De Domarto on Tintoris's authority.¹⁶

This example demonstrates that some composers found it acceptable to imperfect an augmented note, as Tintoris states in his theoretical text before explaining his arguments against this practice, given its mathematical impropriety. The text appears to be written as a response to an imagined critic, who might highlight these

¹⁶ The issues of attribution are discussed more fully in Petrus de Domarto, *Complete Works (Volume I): Missa Sine nomine and chansons*, ed. David Kidger (Antico Edition, 1994), pp. i–ii. Gaforus also refers to this piece in his *Musices practicabilis libellum* of 1480, US-CAh Mus. 142. Indeed, both Cervelli and De Domarto are listed in some of the earliest accounts of the volume from 1603, which describe it as a 'Book of old Mass music in polyphony of Egidius Cervelli, Petrus de Domarto, and other compositions in a manuscript of parchment folios with [blank] number of folios, and Jusquin, as in the folios with the motet *Domine non secundum peccata nostra*'. See Christopher Reynolds, *Papal Patronage and the Music of St. Peter's: 1380–1513* (Berkeley, CA: University of California Press, 1995), pp. 94–98.

instances of the practice Tinctoris takes issue with.¹⁷ He notes that, in De Domarto's case, the notational error occurs in the Tenor, pointing the reader towards the key point if not locating it specifically within the voice. This example supplements three of Tinctoris's own monophonic examples, supporting his explanation of the twelfth general rule of imperfection.¹⁸ The upper voice provides additional context, and demonstrates some of the ways in which a reader might identify such errors through examining the counterpoint and applying the general rules of consonance and dissonance to identify the notational error. Although theorists often critiqued competing theories in the medieval period, nothing like this level of detailed criticism is seen, and examples of errors are rarely provided. Thus, Tinctoris is innovative in this regard.

The key theoretical moment of the example that relates closest to the text is found between the second longa and the penultimate note of the Tenor. Through the addition of a dot of augmentation attached to the second longa, the notation (in Tinctoris's view) precludes its simultaneous imperfection by the following semibreve. If transcribed in this way, the phrase would cadence with the impossible dissonance of Tenor E against Supremum F. Thus, this mistake could have been identified both aurally and notationally.

Figure 46 consists of two musical transcriptions, labeled 'a)' and 'b)', each showing two staves: 'Supremum' (treble clef) and 'Tenor' (bass clef). The music is in a 12/8 time signature. In both transcriptions, the Supremum staff contains a sequence of notes: a half note followed by a dotted half note, then a series of eighth notes, and finally a semibreve. The Tenor staff contains a series of notes: a half note followed by a dotted half note, then a series of eighth notes, and finally a semibreve. In transcription 'a)', the notes in the Tenor staff are vertically aligned with the notes in the Supremum staff. A label 'theoretical error' is placed below the Tenor staff, pointing to the second longa (the dotted half note) which is followed by a semibreve. In transcription 'b)', the notes in the Tenor staff are vertically aligned with the notes in the Supremum staff, but the second longa (the dotted half note) is followed by a semibreve. A label 'intended rhythmic effect' is placed below the Tenor staff, pointing to the second longa.

Figure 46. Transcription of the citation from De Domarto's 'Patrem' in the irregular fifth mode: 'a)' shows a transcription of the notation as Tinctoris would have it interpreted; 'b)' shows the vertical alignment that De Domarto probably intended.

¹⁷ Rob Wegman has suggested that Tinctoris may have included citations showing errors in existing works in response to years of having students point out existing instances that break such rules. See Wegman, 'Tinctoris's *Magnum Opus*', pp. 771–782, esp. p. 779.

¹⁸ This general rule is discussed in the latter stages of Chapter Three.

The choice of a passage from this mass section holds clear relevance to the theoretical point discussed in the text. The first half of the example shown in Figure 46 demonstrates how the erroneous placement of a dot in the Tenor could have led a reader astray if realised exactly as written following the normal theoretical rules. The theoretical text that introduces this example does not provide specific details of the scenario, and thus the example functions as an ‘active’ (rather than reflective or ‘passive’) participant in the theoretical discussion, increasing its prominence in the theoretical whole. Therefore, this type of exemplification is notably different from those derived from some of the examples using the instantiation model, as discussed in Chapter Three.

In following on from Tinctoris’s demonstrations of good practice in his own monophonic examples, the citation of existing works helps to set the treatise in a broader musical context. Such an approach is appropriate for this point, as it contextualises previously established theoretical points, moving the treatise away from highly complex abstract discussions. This would have shown the validity of Tinctoris’s claims of the error, and also demonstrated that his treatise had direct relevance to the music being performed at the time. Therefore, the deployment of citations from existing works forms part of an exemplification strategy that complements Tinctoris’s newly composed monophonic examples. Interestingly, Tinctoris does not provide a ‘corrected’ version of the notation for the quotation from the untitled mass or Barbingant’s chanson: notational correction does not seem to have been part of Tinctoris’s pedagogical strategy. Instead, he assumes understanding of the error, using his own examples to present ‘good’ theoretical practice.¹⁹ For Tinctoris, an understanding of theoretical precision and of contemporary views on the practice was essential (and of mutual benefit) for a complete understanding of a topic: the practice needed to be understood from both a theoretical ideal and a practical reality. Citations from existing works, in this case, appear to form a kind of pedagogical pairing with

¹⁹ Tinctoris almost never provides an example of ‘bad’ practice followed by a corrected version in his treatises. There is a single case of Tinctoris’s own making where two alternative notations are offered, the second of which is deemed to be ‘better’. This occurs in the ninth and tenth examples of *De alt.*, i, where Tinctoris states that it is better to ligate the first and second of three notes, or none at all, instead of ligating the second and third notes, unless the text underlay requires it.

Tinctoris's own newly composed examples as part of this twelfth general rule of imperfection.²⁰

Such examples might also offer possible insights into the kind of reader that Tinctoris envisaged might engage with his text. In this case, Tinctoris's text recognises that this point may attract some adverse criticism of its own because it criticises works by established composers in a very specific sense, with the title of the piece and composer's name being offered in the text.

Indeed, the type of criticism Tinctoris is defending himself against may have been more than just hypothetical: the introduction to *De natura et proprietate tonorum* would seem to act as an apology (of sorts) to some of the composers he criticised in his earlier *Prop. mus.*²¹ Indeed, Tinctoris leaves tantalizing clues to the criticism he received in the prologue to *De ton.* when he writes:

Once it became widely distributed, some people considered – and above all one unworthy to be named not only here, but also in any other book of instruction in honourable and liberal subjects, as being devoid of all education and culture – that I deserved to be branded with a mark of censure.²²

Although somewhat melodramatic, it seems clear that Tinctoris had come under fire for his acerbic criticisms of contemporary works in *Prop. mus.*, with the 'banner of truth' being insufficient to shield him from criticism. Indeed, a significant portion of the prologue is spent responding to harsh criticisms that apparently extended beyond merely intellectual differences. Thus, the imagined critic to which Tinctoris sometimes responds may have been more than just a rhetorical strategy to link his points to contemporary practice: it may be indicative of a highly critical readership.

Returning to the notational point at hand, Tinctoris's decision to cite only two voices from a larger work might implicitly suggest that a degree of assumed knowledge of the larger polyphonic texture was expected from his readers. This implicit assumption would place the likely readers of this treatise as those with expert knowledge and access to musical sources: experienced singers, choirmasters, and other

²⁰ These miniatures are discussed at length in Chapters Three and Five.

²¹ Tinctoris writes, 'I ask my enemy, therefore, to pardon me, that he may be more like that God who went up into heaven on the treacherous wings of fortune, thinking himself to be something, although he was nothing...', *De natura et proprietate tonorum*, trans. Albert Seay, *Concerning the Nature and Property of Tones* (Colorado College Music Press Translations, 2; Colorado Springs, 1976), p. 2. On the broader issue of Tinctoris's criticisms see Bonnie J. Blackburn, 'Did Ockeghem listen to Tinctoris?', *Johannes Ockeghem: Actes du XIe Colloque international d'études humanistes*, ed. Philippe Vendrix (Paris: Klincksieck, 1998), pp. 597–640.

²² The description of the criticisms continues in the prologue. The text is cited in full in Blackburn, 'Did Ockeghem listen to Tinctoris?', pp. 600–601.

music theorists, if the citation serves a further referential function. Tinctoris's example, nevertheless, includes the relevant voice parts to see the contrapuntal implications of this erroneous notational practice at work, and thus fulfils its primary theoretical function, and avoids potentially confusing contextual 'clutter'.

Tinctoris's approach here lends weight to his assertion that the rules of imperfection need to be set out clearly. The implication that some instances of contemporary composition contain erroneous or ambiguous practices provides a kind of practical justification for an argument that could have been construed as merely abstract.²³

The repertoire choice here is noteworthy given the seemingly limited circulation of the untitled mass attributed to De Domarto by Tinctoris. Unlike the *Missa Spiritus almus*, which appears in numerous practical sources, both as a complete cycle and as individual movements, the untitled Mass 'sine nomine' attributed to De Domarto survives complete in V-CVbav S. Pietro B 80 only.²⁴ It appears to imitate an earlier style of music, harking back to the English tradition of c. 1440, which used telescoped text, with this work being only one of three continental examples to use the technique.²⁵

For Tinctoris's readers to be able to place this citation within the larger context of the work, they would have required a detailed knowledge of, or even a copy of, the whole piece to consult this. It is noteworthy that Tinctoris selected a citation from a work from the 1450s with seemingly limited circulation to demonstrate this theoretical point, though its inclusion in V-CVbav S. Pietro B 80 points towards its being part of the active repertoire in the mid 1470s, precisely when Tinctoris was writing.²⁶ One might infer from this that an example from an existing work composed more recently was hard to find for this point, leading Tinctoris to turn to his own collection or commonplace book, perhaps further evidencing the influence of his training in the Low Countries, and the possible associations with Burgundian musical circles that might

²³ The practical justification here is different from those of earlier theoretical traditions. Patterns of scholarship did not require Tinctoris to justify his points in the way that Franco did.

²⁴ I-TRbc 89 preserves only the Sanctus. In suggesting that the composition cited here only had limited circulation, I do not mean to suggest that this work is of a lower quality, or was little known. Instead, I mean to suggest that this composition at least enjoyed detailed engagement from a small circle of experienced musicians, probably all active as theoreticians. It is, of course, possible that this work was widely known and that many of its sources are now lost. On the attribution of this passage, see n. 16.

²⁵ See James Cook, *Mid-Fifteenth-Century English Mass Music in Continental Sources*, PhD diss. (University of Nottingham, 2014).

²⁶ The presence of this piece in a Roman source might suggest that it was accessible in Naples. There are strong repertorial connections between Naples and Trent, and between Tinctoris and the papal choirs.

have led to his employment in Naples. This, in another sense, might have helped to show Tinctoris's knowledge and experience, whilst at the same time, distancing himself from further criticism other than from those readers who were especially expert.

The second citation from this passage in *De imperf.* is taken from Barbingant's chanson, *L'homme bany de sa plaisance*. This piece was circulated widely at the end of the fifteenth and early sixteenth centuries.²⁷ Perhaps most relevant to the present discussion, is its survival in the Mellon Chansonnier (US-NHub 91), a source for which Tinctoris may have acted in an 'editorial' role. The piece demonstrates largely the same theoretical point as the citation from De Domarto's work, albeit in a slightly different musical context.

Tinctoris criticises Barbingant for the way that the contrapuntal context requires the initial dotted longa of the Tenor to be imperfected by the dotted semibreve (see Figure 45). This notational criticism relates to the application of musical dots to particular note values and the effects that these have on the types of imperfection (and alteration) that can occur. Indeed, there is some evidence that Tinctoris tried to 'force' the imperfection of the longa by attaching a dot of division to the semibreve, somewhat clarifying the grouping, perhaps in an effort to highlight the key theoretical point. This shows a subtle difference between the two quotations of the pair that is not made explicit in Tinctoris's text.

Rather interestingly for the present discussion, however, the error is not present in all practical sources, with an alternative notational solution that removes the error being offered, most interestingly, in the Mellon Chansonnier. In this source, Barbingant's piece opens with a longa, breve, semibreve figure in the Tenor, rather than a dotted longa followed by a semibreve as in Tinctoris's treatise. Although changing the rhythmic notational content subtly, it avoids the problem of imperfected an augmented note value, effectively 'correcting' the notational error. In this source, then, Tinctoris would have found no fault with the notation. Given that Tinctoris's probable involvement in the compilation and production of the Mellon Chansonnier (c.1475–1476) is widely accepted, it is noteworthy that this source differs from the presentation

²⁷ Barbingant's piece is preserved in the Nivelles, Dijon, and Laborde chansonniers, along with five other chansonnier volumes, many of which contain much of the same repertoire that Tinctoris cites throughout his treatises: see David Fallows, *A Catalogue of Polyphonic Songs, 1415–1480* (Oxford: Oxford University Press, 1999), pp. 260–261. The most detailed examination of the so-called Loire Valley Chansonniers is Jane Alden, *Songs, Scribes and Society: The History and Reception of the Loire Valley Chansonniers* (New York: Oxford University Press, 2010), esp. pp. 176–242.

of this piece in Tinctoris's treatises.²⁸ Such changes pose tantalising questions about whether Tinctoris corrected this passage for the practical source, or whether this was simply copied from a different exemplar.²⁹

In any case, the citation from Barbingant's work effectively duplicates the theoretical point shown in the first citation of the pairing, though with a subtle notational difference. The theoretical point, therefore, is demonstrated quite clearly in both examples, although the construction of the theoretical text and example requires (perhaps even assumes) that the reader understand fully the theoretical point. Neither citation has *signa congruentiae* placed above the important theoretical moment to help identify the point, a practice seen in many examples from *De contr.*, though this may be due to the ostensibly notational nature of the point at hand here as distinct from contrapuntal practice.³⁰ This might also point towards Tinctoris's text being directed towards experienced readers who did not require the point to be highlighted so explicitly. To my knowledge, Tinctoris never gives a corrected version of a staffed music example after highlighting an erroneous notational practice, though his texts do sometimes provide an implicit correction of sorts. Staff-based notational correction was not part of Tinctoris's exemplification strategy, perhaps to cement the theoretical authority of Tinctoris's knowledge: his own examples were to be upheld as models of propriety.³¹ In any case, the referential awareness of wider repertory that Tinctoris might assume from his readers, and the generality of the theoretical point found in the text, requires a level of understanding that goes beyond some of the graphical and

²⁸ It is possible that Tinctoris was the Mellon scribe, though this seems far less likely than the notion of his having a hand in the compilation. On the acrostic that points towards this, see Ronald Woodley, 'Minor Coloration Revisited: Okeghem's *Ma bouche rit* and Beyond', *Théorie et analyse musicales 1450–1650. Music Theory and Analysis. Actes du colloque international Louvain-la-Neuve, 23–25 septembre 1999*, ed. Anne-Emmanuelle Ceulemans and Bonnie J. Blackburn (Musicologica Neolovaniensia: Studia 9; Louvain-la-Neuve, 2001), pp. 39–63, esp. p. 56.

²⁹ There is no significant variation between the Tinctoris sources in their presentation of this example. There are other instances of this type across his oeuvre that I do not have time to discuss here. The respective dating of the treatise and the chansonnier are highly similar, suggesting that Tinctoris might have been working on both in a close time frame. The quotation from Barbingnant's song and related issues are explored in Ronald Woodley, 'Did Tinctoris Listen to Okeghem? Questions of Textuality and Authority in the Late Fifteenth Century', Paper given at 40th International Congress on Medieval Studies – University of Western Michigan, Kalamazoo (2005): <http://www.stoa.org/tinctoris> (accessed 15 October 2014). The reading that is found in Mellon is also preserved in Chansonnier 'Nivelle de la Chaussée, F-Pn Rés. Vmc. 57, fols. 24v–25, perhaps showing that this reading is taken from a different line of transmission of this piece, with Mellon being part of this alternative tradition.

³⁰ The *signum congruentiae* is not named or defined in any of Tinctoris's treatises. I am discounting the supplementary chapter to *De punctis* as found in **G**, which is probably not by Tinctoris, given the mismatch between the theoretical text and the musical example: see Chapter Five.

³¹ This shows further evidence of the embedding of rhetorical strategy laid out in Book IV of the *Rhetorica ad Herennium*.

monophonic examples discussed in Chapter Three that accompanied more specific theoretical points.³²

Further evidence to support this is the placement of the pairing of examples at the end of the first book of the treatise. It is surely no coincidence that the exemplary content that implies the most repertorial awareness occurs at the end of the first book of the treatise, arguably the most complex part up to that point. This example, as is the case with many of his other general rules of imperfection, demonstrates that Tinctoris expected his readers to be comfortable with the effects that dots had upon imperfection and alteration. Such matters are explored, in some detail, in his shorter treatises on dots and alteration, though no explicit cross-reference is made. Indeed, Tinctoris's text is curiously quiet about the particularities of the dots used in this example. The lack of explanation of the function of the dots might suggest that *De punctis* was composed after *De imperf.*, as such a point would probably have appeared in the treatise on dots rather than imperfection. It seems likely that the treatises on musical dots and alteration were completed after the imperfection treatise, perhaps to address these issues more fully.³³ Tinctoris's relative silence on the links between these three treatises might therefore be understood as a strategy to avoid the need to disentangle these three interrelated practices for pedagogical purposes.

Indeed, the texts on alteration and musical dots, which follow similar approaches towards most of their exemplary content, are treatises that an inexperienced musical reader was unlikely to have engaged with or understood fully. Combined with the seemingly implicit assumption of a wider awareness of existing repertoire, the likelihood that Tinctoris expected a more experienced readership to engage fully with his point increases, as evidenced in the other types of exemplary content from this treatise discussed in Chapter Three.

Proportionale musices

Tinctoris's *Proportionale musices* (c. 1472) [The Proportional of Music] was probably one of the earliest treatises that he completed at the Neapolitan court. Like *De contr.* (discussed later in this chapter), *Prop. mus.* is characterised by a wealth of polyphonic

³² Issues related to the cases of De Domarto and Barbingant cited here are raised in Woodley, 'Did Tinctoris Listen to Okeghem?'

³³ The dedication of *De alt.* would have been impolitic in 1474, and thus it must have been completed some time later. The rhetoric of this treatise is also noticeably different from that of *De imperf.* and *De punct.*

musical examples, some of which are extracted from pre-existent compositions, principally those by the Franco-Flemish masters of Tinctoris's own generation.³⁴ The treatise is made up of three books and deploys quotations from existing works across the whole treatise, with such citations working as counterparts to Tinctoris's own polyphonic miniatures.

Unlike the other treatises discussed in this chapter, Tinctoris offers a much deeper level of criticism in *Prop. mus.*, often commenting upon the severity of the error when including a citation from an existing work, and passing judgement on the skill of the composer based upon such error(s).³⁵ This approach, probably characteristic of a less intellectually mature Tinctoris, keen to 'stamp' his authority on music theory and stand out from the crowd, is not found to the same extent in the more carefully contemplated *De contr.*, or indeed the highly technical *De imperf.*, which includes only the single passage of specific composer criticism discussed above.³⁶

Tinctoris makes use of fully notated citations from existing works from an early stage in the treatise, quoting a three-voice extract from Okeghem's chanson *L'autre d'antan* in *Prop. mus.*, I.iii.³⁷ Tinctoris's criticism of this work centres on the indication of proportional relationships when the voices are all in equal proportion throughout and there is no change from any preceding mensuration. Bonnie Blackburn and Ronald Woodley have discussed this citation at length in their articles on the relationships between Tinctoris's theory and Okeghem's compositions, and thus the present chapter will not duplicate their discussions.³⁸ However, it is important to note that the specific citation is followed by a reference to another erroneous indication of a proportional relationship, breaking Tinctoris's normal demonstration pattern of examples showing definition, citation, and extended exemplification via newly composed miniature.

³⁴ Tinctoris lists Okeghem, Busnoys, Regis and Caron in the Prologue to *Prop. mus.*. His text includes citations from these composers along with Du Fay and Petrus de Domarto.

³⁵ Some of Tinctoris's musical examples that display errors in his treatises do not survive in all practical sources in the same way. The case of Okeghem's chanson, *L'autre d'antan* is particularly illuminating in this regard. See note 38.

³⁶ Something of a development in Tinctoris's Latin style can be traced from the Orléans matriculation document of the 1460s, moving through *Prop. mus.* and culminating in the carefully considered *De contr.* Aspects of Tinctoris's early Latin style, which is characterised by loghorreic verbosity and polemicism, are discussed in Woodley, 'Renaissance Music Theory as Literature: On Reading the *Proportionale musices* of Iohannes Tinctoris', *Renaissance studies*, 1/2 (1987), pp. 209–220.

³⁷ Tinctoris, *Prop. mus.*, I.iii.5, ed. D'Agostino, p. 32 and trans. Woodley, p. 318.

³⁸ See Blackburn, 'Did Okeghem listen to Tinctoris?', pp. 603–612 and Woodley, 'Did Tinctoris Listen to Okeghem?', esp. paragraphs 5–8.

After the citation of Okeghem's *L'autre d'antan*, the next citation of a pre-existent work is found in I.vi. This citation is from a *Missa autenti proti irregularis* (i.e. irregular authentic first tone) attributed to Pasquin, a composer about whom little else is known save for a *Missa 'Da pacem'* ascribed to him in V-CVbav C. S. 41.³⁹ The work Tinctoris attributes to him remains unidentified, and thus the attribution rests on Tinctoris's theoretical statement alone.⁴⁰

Tinctoris deploys the citation in his discussion of the proportional relationships indicated by 'filled-in minims', and how a reader should identify whether the coloration refers to *dupla* or *sesquialtera* (see Figure 47).⁴¹ His negative description of Pasquin shows a quite different approach from his introduction of Okeghem only a few pages earlier.

Nescio tamen quis Pasquin in plerisque passibus sue *Misse autenti proti irregularis* distonite omni arte ac melodia expertis, quoad primum ab omnibus dissentit. Nec mirum, nam et sibi ipsi in *Cum sancto spiritu*, quod ualde ridiculum est, contrariatur, quom in exordio nobiscum, in fine autem contra nos taliter operatus sit:

Some composer called Pasquin, however, in many passages of his mass in the irregular first mode (a work totally lacking any skill or melody) disagrees with everyone in the first of these respects. Nor is this surprising, since he even contradicts himself in the 'Cum Sancto Spiritu', which is quite absurd; for at the beginning his working is in line with the present writer, but at the end is in disagreement, thus:⁴²

The criticism is certainly harsh, particularly given that Tinctoris asserts that Pasquin follows theoretical propriety at the beginning of the quotation (Figure 47), and thus the theoretical error does not apply throughout the whole citation. However, it is the contradiction in notational practice that seems to offend Tinctoris the most, though it seems that this is not a piece that he held in affection or knew all that well. Unusually, the example is split into two parts, with an 'etc.' sign placed at the corresponding point in both voice parts. The first half of the citation corresponds with Tinctoris's belief that blackened minims adopt the coloration of their associated higher note values.

³⁹ On Pasquin see, Rob C. Wegman, 'Pasquin', *Grove Music Online. Oxford Music Online* (Oxford University Press), <http://www.oxfordmusiconline.com/subscriber/article/grove/music/40553> (accessed 30 January 2015).

⁴⁰ Similar instances are discussed in Gianluca D'Agostino, 'Reading Theorists for Recovering "Ghost" Repertories', pp. 25–50.

⁴¹ Tinctoris's discussion of this issue has, at its heart, his rather pedantic rejection of the existence of note values smaller than the minim (semiminims).

⁴² Tinctoris, *Prop. mus.*, I.vi.23–25, ed. D'Agostino (2008), p. 44 and trans. Woodley (1982), p. 329. This example is explored in Woodley, 'Minor Coloration Revisited', pp. 39–63.

The key theoretical transgression occurs in the second half of the example, where Pasquin has equated the coloured Sb + MMM figure with its dotted equivalent, matching the dotted rhythm (dotted minim followed by three minims in duple proportion⁴³) of the Tenor that occurs immediately after the sounding of the Discantus semibreve (see Figure 47). The consonant profile of the citation demonstrates that the dotted rhythm is probably what Pasquin intended, even though he notates it differently. Instead, the first two parts of this figure should be cast under ‘true’ *sesquialtera* and the final two minims should be viewed under *proportio dupla*, according to Tinctoris. This realisation would have fallen in line with Tinctoris’s belief that coloration of this sort, which Apel terms ‘minor coloration’, indicates true *sesquialtera*, as demonstrated in the opening of the Discantus.

In terms of exemplification, Tinctoris’s text provides detailed information as to the part of the work from which the citation is taken, and the notational practice that he takes issue with. However, the text at this point does not provide any explicit guidance as to the specific error that is on show, nor where it is to be found in the example.⁴⁴ Instead, Tinctoris apparently relies upon the reader having understood the previous points concerning coloration to identify the erroneous practice here. Tinctoris is also further reliant upon the reader being aware of the notational subtlety at work in coloration, the meaning of which is difficult to ascertain at this historical distance. Some of his contemporaries might have ‘misread’ the first instance as a dotted figure, as many modern editors would, a point attested by a variety of different ‘clarification’ processes in contemporary manuscripts.⁴⁵ Indeed, there is a clear tension here between Tinctoris’s theoretical convictions and mainstream notational practice: in this instance, the two did not align. In fact, Pasquin’s ‘mistake’ became unexceptionable orthodoxy, despite the intolerable ambivalence of the same symbol representing two incompatible meanings.

⁴³ Other writers would have labelled these as ‘semiminims’.

⁴⁴ It is implied in Tinctoris’s text that the error occurs in the second half of the example, but no further specificity is given.

⁴⁵ See Woodley, ‘Minor Coloration Revisited’, pp. 48–50.

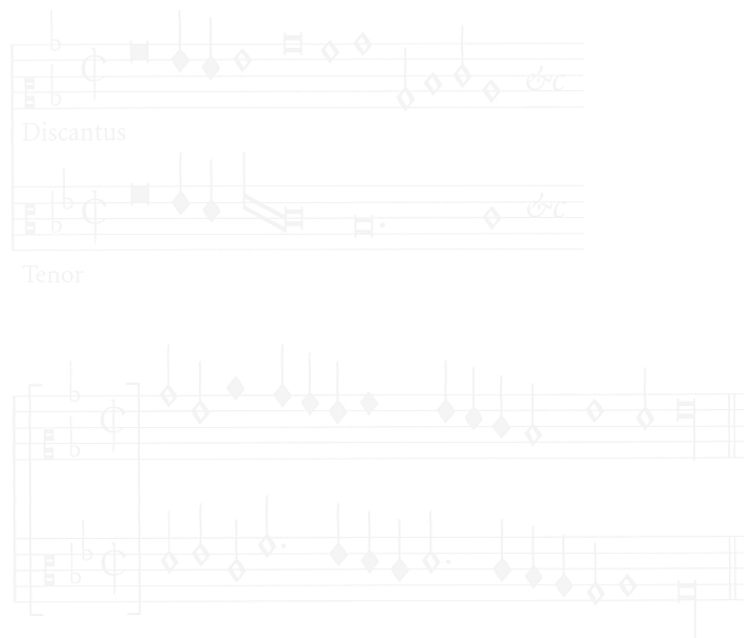
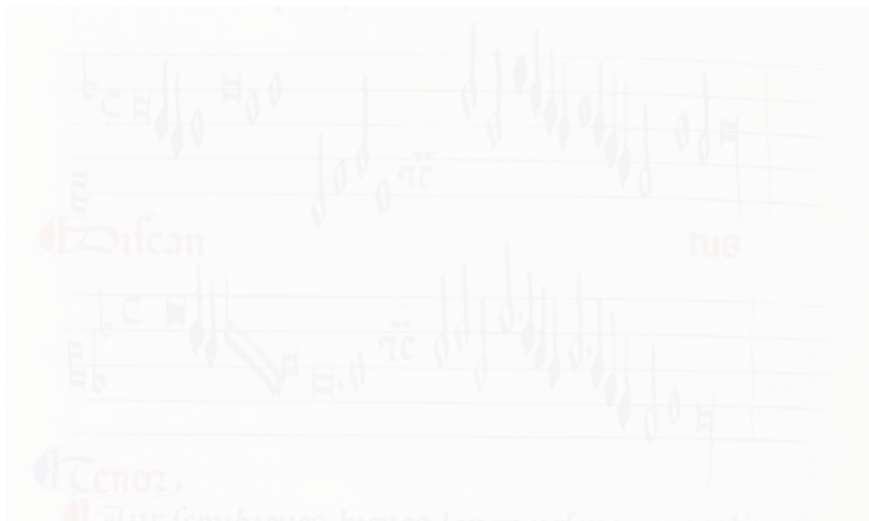


Figure 47. Tinctoris, *Prop. mus.*, I.vi.23–25 Example from an otherwise unknown *Missa authentī protī irregularis*, attributed by Tinctoris to Pasquin (E-VAu 835, fol. 150v).⁴⁶

For this example, Tinctoris adopts a similar type of context-critical exemplification strategy to that found in *De imperf.*, whereby a theoretical point is demonstrated to show erroneous practices in contemporary composition, supported by newly composed pedagogical miniatures showing correct practice. However, there is one important, albeit subtle, difference in this type of integration that relates to the presentation of theoretical points. Unlike other citations from existing works, Tinctoris includes two

⁴⁶ The first Discantus breve is erroneously void rather than black in **V**. Transcription reproduced from Woodley, ‘Minor Coloration Revisited’, p. 49: this takes the clef for the Discantus from **Br1**.

extracts from Pasquin's work, grouped together as a single citation: the two sections show good and bad practice respectively. The 'good' and 'bad' practice may have been seen in different ways by Tinctoris's own readers, raising questions about the relationship between Tinctoris's theory and contemporary trends in musical practice. In any case, Tinctoris provides a framework showing the erroneous equivalence accorded to *sesquialtera* and dotted figures, somewhat removing a finely tuned rhythmic subtlety.⁴⁷ To my knowledge, such an approach is not duplicated in any of Tinctoris's other notational treatises, or in the treatises of his contemporaries, and thus this instance is significant.

Due to the unusual nature of its exemplification, an unusual text–example relationship is formed here. The reader is offered the opportunity to see an example of both 'good' and 'bad' theoretical practices within a single example, a somewhat anomalous practice in Tinctoris's output. For the modern scholar the implicit recognition in the first half of the example of Tinctoris's belief in the widespread acceptance of coloration indicating true *sesquialtera* figures, provides a rare insight into contemporary conceptions of a type of figure that has been a source of editorial contention.

Another example of Tinctoris's use of what I have described as the context-critical citation exemplification model can be found in Book III of *Prop. mus.* Tinctoris offers a pair of citations from existing works to accompany his discussion of the correct ways to indicate proportions using numerical figures, rather than mensuration signs as many of his contemporaries did.⁴⁸ He first explains the ways that numbers are constructed in a mathematical abstract sense, and then goes on to state that proportions should be indicated in a fractional format, i.e. a numerical relationship shown between two numbers placed one above the other.⁴⁹ After numerous examples of his own pedagogical miniatures, Tinctoris introduces two citations that he says are from a *Missa*

⁴⁷ Woodley suggests that the equivalence of these two figures might have been accepted in a later period as the finely gradated rhythmic nuances of the early to mid-century perhaps became heard as 'over-fussy': see Woodley, 'Minor Coloration Revisited', pp. 59–60.

⁴⁸ This practice is explored more fully in Jason Stoessel, 'Looking Back Over the "Missa L'Ardeant Desir": Double Signatures and Unusual Signs in Sources of Fifteenth-Century Music', *Music & Letters*, 91/3 (2010), pp. 311–342. The decision to discuss musical proportions rhythmically is intriguing, given the usual preference for harmonic treatment at this time: see Chapter Five. On the manifestations of Tinctoris's proportional systems in his compositions, see Jeffrey J. Dean, 'Towards a Restoration of Tinctoris' *L'homme armé* Mass: Coherence, Mensuration, *Varietas*', *Journal of the Alamire Foundation*, 5/1 (2013), pp. 11–40. Earlier uses of numerical signatures for proportional indication include Prosdocimo de Beldemandis's *Tractatus practice de cantu mensurabilis* (1408).

⁴⁹ This point summarises a point expressed throughout the first and second books of the treatise.

Mon coeur pleure by Guillaume Le Rouge and an ‘Et in terra’ in the irregular plagal tritus by Johannes Pullois, continuing his practice of showing examples of practice contrary to his beliefs from the works of other composers.⁵⁰ Tinctoris writes:

Ast quidam signo prolationis maioris et temporis perfecti vel imperfecti sesquialteram signant, ut hic:

EXEMPLUM [Le Rouge]

Et alii eodem signo temporis imperfecti et prolationis maioris subsesquiterciam, ut hic:

EXEMPLUM [Pullois]

Quod, licet faciant Le Rouge et Puylois in missis *Mon coeur pleure* et in quodam *Et in terra plagalis autentis triti irregularis*, tamen est intolerabile. Non enim sesquialtera vel subsequitercia et hec prolatio equipollent, quom una semibrevis prolationis maioris tres minimas valens non sit uni aut duabus semibrevibus minoris commensuranda, immo semibrevis et minime...

There are, however, certain composers who indicate sesquialtera with the sign of prolatio major with either tempus perfectum or imperfectum, as is shown in the following:

EXAMPLE [Le Rouge]

And still others who indicate subsesquitercia with the sign of tempus imperfectum and prolatio maior, as follows:

EXAMPLE [Pullois]

Although Le Rouge and Puylois do this in their masses *Mon cuer pleure* and in a certain ‘Et in terra’ in the plagal of the irregular third authentic mode, I find [it] quite unacceptable, for there is no equivalence of meaning between either sesquialtera or subsequitercia and this prolatio, since one semibreve of prolatio maior, worth three minims, must not be measured in the same time as one or two semibreves of prolatio minor but rather one semibreve and a minim...⁵¹

The first citation of the pair shown in Figure 48 may be a two-voice citation from Le Rouge’s *Missa Mon coeur pleure*, though the positioning of the text and examples does not make this explicitly clear. Indeed, this work has not been identified outside of Tinctoris’s treatises, and is missing the text of the mass in any of the three main sources, as Tinctoris’s quotations often do. This citation, which includes only the Discantus and Tenor, includes two instances where a proportional relationship within a single voice

⁵⁰ On Guillaume Le Rouge, see Jeffrey Dean, ‘Le Rouge, G.’, *Grove Music Online. Oxford Music Online* (Oxford University Press), <http://www.oxfordmusiconline.com/subscriber/article/grove/music/23953> (accessed 27 January 2015). On Johannes Pullois, see Gerald Montagna, ‘Johannes Pullois in the Context of His Era’, *Revue belge de Musicologie*, 42 (1988), pp. 88–117. Montagna argues that Pullois’s work offers an insight into the ‘forgotten’ period of composition in the mid-fifteenth century. The two works cited are not found in any surviving source, raising the possibility that Tinctoris might have composed these as examples of ‘bad’ practice, though his introduction of them does not follow the normal pattern for newly composed examples. Given that Tinctoris does not otherwise compose examples of ‘bad’ practice, it seems that these are citations from existing works. In any case, their function within the theoretical whole is identical to other citations from existing works and thus the context-critical exemplary model is maintained here.

⁵¹ Tinctoris, *Prop. mus.*, III.ii.22–25, ed. D’Agostino (2008), pp. 78–80 and trans. Woodley (1982), pp. 359–361.

part is indicated through the use of the sign of major prolation: the first occurs in perfect tempus and the second imperfect. The first proportional change occurs in the Discantus at the first mensural change, where a sign of major prolation with perfect tempus is used (⊙).



Figure 48. Tinctoris, *Prop. mus.*, III.ii.22–25. Citations from Le Rouge’s *Missa Mon coeur pleure* and Pullois’s Gloria from his ‘Et in terra’ in the irregular plagal tritus (E-VAu 835, fol. 159).

The proportional change that Le Rouge intends to achieve through this brief mensural change is a shift to *sesquialtera*. Although many other practical sources would adopt the same approach, Tinctoris takes issue with this practice because a semibreve in major prolation should not be measured as the same duration as one in minor prolation, given that they consist of three and two minims respectively.⁵² Instead, Le Rouge should have adopted one of Tinctoris’s methods for indicating a proportional change in one voice

⁵² This is another example of Tinctoris’s dislike of notational practices that had lacked sufficient mathematical grounding, and thus had the potential to be ambiguous. For Tinctoris, minim equivalence was integral to his understanding of mensural relationships. On the multifarious relationships between major and minor prolation, both theorised and practiced, see Anna Maria Busse Berger, *Mensuration and Proportion Signs* (Oxford: Clarendon Press, 1993), esp. pp. 87–119 and Margaret Bent, ‘Notation, §3, 3: Polyphonic mensural notation c. 1260-1500’, *Grove Music Online. Oxford Music Online* (Oxford University Press), <http://www.oxfordmusiconline.com/subscriber/article/grove/music/20114pg6> (accessed 15 August 2015).

part to *sesquialtera*, using a fractional signature or type of coloration to show the change.

Tinctoris's chosen citation, although brief, demonstrates the erroneous use of the signature for major prolation in perfect tempus (⊙) in this example. The brevity of the citation provides a sufficiently 'realistic' context to situate the theoretical error within but prevents contextual clutter from obscuring the theoretical point. Such an approach would have shown the relevance of Tinctoris's argument to contemporary performance practice whilst retaining a sharp pedagogical focus.

The second proportional shift takes place at the third mensuration signature. At this point, the *Discantus*, if the signatures are followed strictly according to Tinctoris's precepts, moves from perfect tempus with minor prolation (○) to imperfect tempus with major prolation (⊙) rather than in proportion indicated by fractional signatures.⁵³ As before, Tinctoris takes issue with the indication of proportional changes with mensuration signs due to the inherent ambiguity of this practice, thus demonstrating the second part of his theoretical point. The grounds for the criticism are the same as at the first mensural change, with both working together to demonstrate the ambiguous practice.

Tinctoris's citations from existing works in *Prop. mus.* are always accompanied by at least one other voice part, affording an opportunity for the proportional relationships to be ascertained through patterns of consonance, even if the citation is extracted from a work with more than two voices.⁵⁴ In terms of exemplification here, the citation works with the text to establish a richer picture of the theoretical error, building upon the precepts established through previous theoretical statements and newly composed pedagogical miniatures. As with the case from *De imperf.* (Figure 45), these citations work as part of an overall pedagogical trajectory, enhancing their effectiveness.

The theoretical errors are demonstrated in the same order as in the text, with the erroneous indication of a proportional change using the perfect tempus with major prolation signature (⊙) being the first mensural change in the citation. As we have seen

⁵³ Tinctoris would have interpreted the change from ○ to ⊙ as a change in the value of the semibreve to half its former value. The 'others' Tinctoris refers to would have maintained the value of the semibreve and reduced the value of the breve and minim by a third.

⁵⁴ His own polyphonic miniatures usually contain a referential voice part too. This type of example is discussed more fully in Chapter Five, as are the methods of exemplification associated with it.

elsewhere, the practice of matching the ordering of theoretical content is a common feature in many of Tinctoris's treatises, and is deployed with some degree of compositional craft in Tinctoris's own pedagogical miniatures, particularly in the more complex examples in the latter stages of *De contr.*⁵⁵ Such an ordering facilitates a kind of 'concurrent' reading, whereby the theoretical text and musical example could be read side-by-side, aiding understanding.

A brief theoretical statement that provides further specificity for the proportional change illustrated precedes the second citation of the pair. It states that there are other composers who use the sign of imperfect tempus with major prolation (Ⓢ) to indicate *subsesequitertia*. Tinctoris does not provide a definition of this proportional relationship here as it is discussed earlier in the treatise, demonstrating the pedagogical trajectory across the whole treatise.⁵⁶ The main part of Tinctoris's criticism stems from the implication of augmentation by the major-prolation signature, a practice that does not fit with his meticulous use of mensural signs.

The extract from the mass that Tinctoris attributes to Pullois includes the Discantus and Tenor only, with the theoretical error occurring at the only mensural change in the Tenor. Its appearance in the Tenor of a quotation is unusual, given that most of Tinctoris's own musical examples show proportional changes in the Discantus, using the Tenor as a referential mensural guide for the reader. However, the relative simplicity of the Discantus would have allowed a reader to use it as a reference voice part in this case, effectively reversing their roles in the reading process.

Unlike the previous citation, the proportional change occurs almost immediately after the Tenor has begun, with the Ⓢ signature being placed after the initial breve on A. Such a placement prevents the reader from identifying a clear underlying *mensura* before the proportional shift occurs, perhaps making this example a more challenging proposition for the reader. In any case, the theoretical error is clear to see, given Tinctoris's damning criticisms of the use of mensuration signs instead of fractions to indicate proportional relationships.

⁵⁵ See Chapter Five. Elements of this approach can also be seen in examples from the instantiation model discussed in Chapter Three.

⁵⁶ In stating explicitly the proportion on display in the citation, Tinctoris provides the reader with sufficient information to refer back to an earlier part of the treatise to understand this proportional relationship in a more abstract sense. Book I of *Prop. mus.* may have functioned as a kind of reference guide that the reader could refer back to, as has been suggested for Book I of *De contr.*

De arte contrapuncti

Tinctoris's *De arte contrapuncti* is the treatise that, along with *Prop. mus.*, makes the most frequent use of citations from existing polyphonic works in theoretical demonstrations. These citations are often easily identifiable because Tinctoris describes them so precisely in his theoretical text, usually naming the composer and title of the work and occasionally passing judgement on the severity of the error.⁵⁷ In many cases, the composer is named in a caption that accompanies the musical notation, further aiding identification of the citations and strengthening the relationship to the text, particularly when more than one composer/work is being cited at the same time. In the case of citations from larger works such as mass cycles, Tinctoris occasionally labels the section of the piece from which the citation is taken, allowing a reader with detailed knowledge of the piece to aurally recall the structure of a particular work.⁵⁸ Such a reader might also have engaged with the full context of the piece, studying the notation in a widely available source. However, a less experienced reader could simply engage with the 'notes on the page', without the risk of becoming distracted by too much contextual clutter. It should be noted at this point that Tinctoris's criticisms are more measured and diplomatic than those seen in *Prop. mus.*, perhaps showing an evolution in the measured tone taken when criticising citations from existing works.⁵⁹ Even in this more considered form, Tinctoris's practice to criticise composers by name is unprecedented and is a remarkable innovation in musical exemplarity.

There are eight citations from pre-existent polyphonic works in Tinctoris's treatise on counterpoint, six of which are extracted from compositions that can be securely identified as the work of a particular composer.⁶⁰ All eight citations that are drawn from pre-existent polyphonic repertory appear in the latter stages of Book II and throughout Book III, coinciding with the point in the treatise where Tinctoris moves away from introducing foundational characteristics of counterpoint in a way that defines a kind of contrapuntal 'vocabulary', and towards more advanced points relating to the regulation of dissonance and matters of contrapuntal 'style'.

⁵⁷ These criticisms tend to relate to dissonance usage rather than notational practices and are somewhat softened in comparison to the rather forceful criticisms found in *Prop. mus.*

⁵⁸ This is analogous with earlier practices of integrating a small citation within the context of a broader piece. See, for example, the discussion of the Berkeley Treatises in Chapter Two.

⁵⁹ On Tinctoris's recognition of, and apology for, his harsh criticisms in *Prop. mus.*, see n. 21.

⁶⁰ It is possible that the authors of the two works of unknown authorship will be identified in the future, but so far I have been unable to find concordances with composer attributions in extant sources.

The first citation to appear in Book II is taken from the first part of the Gloria from Petrus de Domarto's *Missa Spiritus almus*, and is deployed to demonstrate a theoretical point on the regulation of dissonance. Tinctoris focuses on the proper duration of dissonances in relation to the underlying *mensura*. He quotes only the Contratenor altus and Contratenor bassus parts from this four-voice piece. The quotation consists of only a few notes, though this is sufficient to demonstrate the theoretical point.

Figure 49 shows De Domarto's work being used to demonstrate the use of a dissonance that has a greater duration than is proper under this mensuration as outlined below. In terms of exemplification, the use of a short citation gives a focused view of the error, a point that is further emphasised by the addition of *signa congruentiae* to both parts. The brevity of the citation provides a sufficiently rich context for demonstration without the distraction of contextual clutter that might obscure important theoretical details in the example. This example adopts the context-critical citation exemplification model, whereby Tinctoris uses the citation to demonstrate a part of his theoretical text and to comment upon contemporary practice. The relative concision of this example complements the focus of the text, forming a slightly less context-dependent relationship here.



Figure 49. Tinctoris, *De contr.*, II.xxix. Two citations from existing works by Petrus de Domarto (left) and Antoine Busnoys (right) (E-VAu 835, fol. 136v).

The theoretical text, which gives the work title and composer in Tinctoris's usual style, describes the dissonance practice with which he takes issue.

<p>Multi tamen adeo exacte discordantias evitant ut numquam supra dimidiam partem integram, immo supra terciam aut quartam aut minorem tantum cuiusvis note secundum quam mensura dirigitur discordantiam assumant. Et ut mea fert opinio, tales potius imitandi sunt quam Petrus de Domarto et Antonius Busnois, quorum, ille in prima</p>	<p>Many, however, avoid discords to such a great extent that they never use a discord of more than an integral half part of that note by which the measure is defined or even above a third or fourth or smaller [part]. And, as my opinion stands, these men should be imitated more often than Petrus de Domarto or Anthonius Busnois, of whom the first, in the</p>
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parte *Et in terra* misse *Spiritus almus*, iste vero in cantilena *Maintes femmes*, non solum dimidiam partem note mensuram dirigentis, hoc est semibrevis minoris prolationis in tempore perfecto, immo totam ipsam semibreve discordem effecerunt, ut hic patet:

first part of the “Et in terra” from his *Missa Spiritus almus*, and the second, in his chanson, *Maintes femmes*, not only use a discord as long as an [integral] half part of the note defining the measure, that is, a semibreve of minor prolation in perfect tempus, but even [as long as] the whole of that semibreve, as is seen here:⁶¹



Figure 50. Transcription of the citation from De Domarto’s *Missa Spiritus almus*, with *signa congruentiae*.

In summary, Tinctoris states that a dissonance may never last for more than half of the length of the note that defines the *mensura* – the *mensura* is the measurement of the relations of all the notes in the *quantitas* or mensuration (see Figure 50). The text, though describing the relationship between the duration of particular dissonances, does not describe specific scenarios in a precise sense. Instead, the example takes on an active role in the explanation and demonstration of the point, with the citations from works by De Domarto and Busnoys providing two specific scenarios in support of the text. These citations credit the reader with having ‘absorbed’ the earlier theoretical discussions of the treatise, to allow the problematic dissonances to be identified. This identification is further supported by the use of *signa congruentiae*, a symbol that is used in interesting ways in Tinctoris’s texts and a point I shall return to later.

Given the function of these quotations within a larger exemplification (and repertorial) context, something more complex than the basic instantiation model is at work here. The use of pre-existent citations serves to further strengthen the relevance of the theoretical point to wider musical practice, and Tinctoris’s authoritative knowledge of musical practice. This also serves, in a more implicit sense, as recognition of the material that has been understood through the first part of Book II, highlighting the pedagogical trajectory apparent across the structure of *De contr.*

⁶¹ Tinctoris, *De contr.*, II.xxix, ed. D’Agostino (2008), p. 352 and trans. Seay (1961), p. 126.

In highlighting errors in contemporary composition through the citation of ‘real’ polyphonic pieces, Tinctoris adopts a context-based critical model of exemplification. This, in turn, would probably have helped to form associations between dissonance practices and particular compositions in the reader’s mind. Such an approach also goes some way towards reconciling theoretical discussion with real musical practice, as Tinctoris makes explicit links between these two spheres.

Indeed, Tinctoris’s approach here assigns an active role to the musical demonstration, with the notation conveying the specific theoretical content deemed to be erroneous.⁶² A similar status was accorded to examples in the treatises on imperfection and alteration as discussed in Chapter Three, though crucially, this effect is achieved through a different model of exemplification here. In this instance, the example serves a greater referential function and thus interacts with wider conceptions of musical practice in a subtly different way, whilst still engaging with the specific issues of the theoretical text.

The use of citations from pre-existent polyphonic works was unusual in the fifteenth century, particularly as exemplary content to critique contemporary practice. One possible motive for this approach might have been a desire to demonstrate the errors of other musicians and composers to elevate Tinctoris’s own status and intellectual standing within the field of music. In criticising the compositional masters, Tinctoris might have been attempting to highlight their errors to reaffirm the importance of theoretical propriety and accuracy. There is, however, an alternative and more compelling interpretation that centres on one aspect of the pedagogical logic that underpins many of Tinctoris’s other treatises.

This more likely motive is that, by drawing attention to the theoretical errors apparent in contemporary compositional and notational practices, Tinctoris hoped that young singers and composers in training would not attempt to emulate blindly the perceived compositional masters and perpetuate the theoretical errors which introduced unnecessary ambiguity. This concern is apparent in many of Tinctoris’s texts, as evidenced by a passage from his *Prop. mus.*:

⁶² I use the term ‘active’ to emphasise that the example dominates the specific explanation of Tinctoris’s theoretical point, going beyond a supporting or supplementary role.

Quibus respondeo suppleendum esse duces cecorum et cecos a claritate veritatis scientie proportionandi multum errantes, et non optimos artis nostre preceptores eorumque perspicacissimos imitatores. Ex quibus fuit ille Binchois qui sua compositione iocundissima nomen sibi peperit eternum. Nempe sesquialteram – libro teste regio – in suo *Patrem autenti triti irregularis* ita decentissime signavit:

My reply is that they should be informed that the leaders of the blind have been themselves blind, wandering far from the shining truth of the science of proportions, rather than the finest teachers of our art, and their most acute disciples. Amongst these was the famous Binchois who, with his most delightful style of composition, has obtained for himself an everlasting reputation; certainly (as a royal book bears witness), in his ‘Patrem’ in the irregular third authentic mode, he has indicated sesquialtera in the most proper manner, thus:⁶³

His pedagogical desire for young singers and composers to learn the ‘correct’ practice, at least in theoretical terms, is clear to see here.⁶⁴ As in the counterpoint treatise, Tinctoris aims to present a comprehensive theoretical ‘truth’ that is useful to a range of readers, from those learning the craft of counterpoint and, by association, composition, through to experienced singers and theorists. Indeed, Tinctoris’s statement in *Prop. mus.*, and this implied motive for the inclusion of such an example in *De contr.*, give an additional insight into how matters of style were ‘learned’ by aspiring composers.⁶⁵ Tinctoris’s decision to highlight the errors in works of some of the greatest composers of the era implies that he expected his readers to be actively involved in a process of assimilating stylistic features of particular composers. These stylistic traits might have been understood through close study of musical works in notation, through the experience of singing polyphonic music, or (most likely) a combination of both aspects.⁶⁶ However students of counterpoint assimilated the most elegant practice in counterpoint, it is clear that Tinctoris felt that a solid technical grounding was prerequisite to the emulation (and assimilation) of aspects of good compositional style.

In his questioning of the compositional practices of some of the masters, Tinctoris is careful to ensure these criticisms have theoretical justification. This is where his

⁶³ Tinctoris, *Prop. mus.*, III.ii.17–19, ed. D’Agostino (2008), p. 78, trans. Woodley (1982), p. 358, with slight adaptation. A similar concern is raised in *De imperf.* I.iii.57–59.

⁶⁴ Such an ambition was not unique to Tinctoris’s output, though his critique of contemporary practice to achieve this ambition was unprecedented.

⁶⁵ Tinctoris outlines some of his own models in the prologue of *De contr.*, listing Okeghem, Regis, Busnoys, Caron, Faugues, and their predecessors, Dunstaple, Binchois and Du Fay. *De contr.*, Prol., ed. and trans. Jeffrey J. Dean and Ronald Woodley, *Early Music Theory Online*.

⁶⁶ The extent to which Tinctoris’s hints at compositional style as reflected in surviving works is being investigated as part of the ELVIS project at McGill University. See <http://elvisproject.ca> (accessed 5 February 2015).

approach in *De contr.* differs from his approach towards context-critical citations in his *Prop. mus.* In the treatise on proportions, Tinctoris often comments upon the severity of the error on display in the notation, occasionally passing judgement on the skill of the composer. Although such judgements are supported by theoretical evidence, Tinctoris's more measured approach in *De contr.* states the theoretical errors more plainly, avoiding judgemental remarks such as 'intolerabilis' as seen in *Prop. mus.*

One of Tinctoris's secondary aims in using citations from existing works might have been to trigger aural recognition of particular dissonances encountered by singers in performance. It seems likely that Tinctoris's citations were mostly taken from well-known works of the period, though there are certain anomalous cases that seem more obscure.⁶⁷ Given that most students of more advanced counterpoint would have been involved in musical performance as singers, they would probably have been familiar with a fair proportion of the repertoire that Tinctoris cites.⁶⁸

In citing a work that he expected a reader to have known, either through performance or listening, Tinctoris may have implicitly linked his theoretical point with aural recall from a personal memorial archive.⁶⁹ This could emphasise the sonic effect of a particular dissonance, bringing an aural dimension to his theoretical argument. If such aural recall was being encouraged, these citations might provide a 'real' musical example, much as a modern author might refer to a CD recording of a particular work.⁷⁰ The citation of existing works may therefore show implicit recognition of a musically active readership, i.e. singers who were involved in the performance of such repertoire, or courtly readers who were regular listeners, though this is not to exclude other potential readership groups.⁷¹

⁶⁷ This point is supported by the survival of many of Tinctoris's citations in multiple high profile sources from the period. Notable anomalies include the citation of Pasquin's *Missa authentici proti irregularis* in *Prop. mus.*, I.vi: see Figure 47.

⁶⁸ This is not to discount the possibility that at least part of Tinctoris's readership would have been made up of courtiers and court intellectuals. Readers would not be required to have repertorial familiarity, though if they did, the content of Tinctoris's text gains additional practical relevance.

⁶⁹ As has been noted in earlier chapters, the construction of Tinctoris's text holds some similarity with earlier treatises designed to be memorised. See Anna Maria Busse Berger, *Medieval Music and the Art of Memory* (London: University of California Press, 2005), esp. pp. 85–110.

⁷⁰ There is some evidence that small chanson volumes were followed during performances. The so-called Loire Valley miniature chansonnier volumes were probably used in this fashion: see Jane Alden, *Songs, Scribes and Society*, pp. 59–107.

⁷¹ It is intriguing that de Domarto's work survives in V-CVbav C. S. 14, a manuscript that contains much of the other repertoire that Tinctoris cites across his theoretical texts, including Eloy d'Amerval's *Missa Dixerunt discipuli* which survives *unica* in this source. This relationship was first raised by Seay in his preface to Tinctoris's *Opera theoretica* and taken further in John Bergsagel, 'Tinctoris and the Vatican manuscripts Cappella Sistina 14, 51 and 35', *Studien zur Geschichte der päpstlichen Kapelle: Tagungsbericht Heidelberg 1989*, ed. Bernhard Janz, *Capellae apositolicae sextinaeque Collectanea*,

Returning to the above example of dissonance treatment from *De contr.* II.xxix, Tinctoris's citation here is unusual in that it uses symbols resembling *signa congruentiae* in both voice parts, to indicate something other than 'congruence' in a traditional sense. Given that such symbols appear in many of Tinctoris's musical examples, a brief discussion is required here, though this topic is explored more fully in Chapter Five. The term *signum congruentiae* itself is problematic, given that it has very little historical justification, with only three relatively obscure theoretical sources giving definitions of similar symbols before the 1470s. Despite making frequent use of such symbols, Tinctoris never uses this term in any of his treatises.⁷²

In using these symbols in unprecedented ways, Tinctoris raises the visual profile of the key theoretical moment without requiring the reader to align both voice parts from the notation alone.⁷³ For other examples, these *signa* might point towards a readership with only limited musical reading experience, accounting for some, but not all, of Tinctoris's likely readership. Tinctoris's use of *signa* here, though not precisely matching any of the contemporary definitions or its practical usage in many sources, does indicate a broad 'point of coincidence', and one of structural importance in this theoretical context: the F of the Contratenor altus overlaps with the G of the Contratenor bassus (see Figure 49). If a reader were to interpret the *signa congruentiae* exactly as written and out of the mensural context, then the F and G could have been interpreted as being 'struck' simultaneously, a musical impossibility. In actuality, the F is struck before the G, somewhat softening the immediacy of the dissonance, perhaps making it possible to read this example as supporting readers for whom the primary musical function might not have been an issue, i.e. the non-specialist.

However, most readers would have been required to engage with Tinctoris's text to understand the point that was being demonstrated, and thus one would assume

acta monumenta, 4 (Vatican City: Biblioteca Apostolica Vaticana, 1994), pp. 497–527. However, there are points at which the readings in this source differ from those found in Tinctoris's treatises, largely ruling out the possibility that this is the source from which Tinctoris worked. On this source, and the relationship between some of its intriguing readings and those of V-CVbav S. Pietro B 80, see Richard Sherr, 'Thoughts on Some of the Masses in Vatican City, Biblioteca Apostolica Vaticana, MS Cappella Sistina 14 and Its Concordant Sources (or, Things Bonnie Won't Let Me Publish), *Uno gentile et subtile ingenio: Studies in Renaissance Music in Honor of Bonnie J. Blackburn*, ed. M. Jennifer Bloxam, Gioia Filocamo, and Leofranc Holford-Strevens (Turnhout: Brepols, 2009), pp. 319–333.

⁷² The key texts in question are: Anon. XII's *Tractatus et compendium cantus figurati*; a related text preserved uniquely in (Ssp) Salzburg, Erzabtei St. Peter, a VI 44, 1490; and a supplementary chapter to Tinctoris's *De punctis*, though this chapter is probably not by Tinctoris himself.

⁷³ Tinctoris used these symbols frequently for a range of examples, though the *signa* always fulfilled the same 'asterisk-like' function. For further discussion of these symbols, see Chapter Five.

sufficient familiarity to only have to use the *signa* to ‘orient’ the point within the mensural context. Although the *signa* introduce a small degree of ambiguity if not considered within the overall context, it seems that their function is clearly that of an asterisk rather than a technically specific musical symbol to indicate a congruent point of structural importance.

This example, therefore, provides further evidence to support the notion that Tinctoris’s examples were constructed in such a way as to aid the understanding of theoretical points from a range of perspectives. In this case, the use of a citation from an existing polyphonic work sets the theoretical point within a more musical context for the experienced musician, whilst the use of *signa congruentiae* might have provided some support for the less experienced reader. It provides yet further evidence to suggest that many contemporaneous notational symbols held a variety of subtle meanings that we are only beginning to understand more fully.⁷⁴

Whilst the two citations found in Figure 49 can be viewed as independent citations, an insight into Tinctoris’s strategy of exemplification can be gained if they are considered together. The second of the citations is taken from Busnoys’s chanson *Maintes femmes*, and is of a similar duration to the citation from De Domarto’s work, albeit cast in a different musical style, taken from the chanson repertory.

Firstly, the citation taken from Busnoys’s chanson is noticeably more rhythmically complex, certainly in the upper voice, than that taken from De Domarto’s work. The lower voice (the Tenor) has identical note values (four perfect breves) throughout the example, providing a simple referential voice against which the more complex upper voice could be measured.⁷⁵ As before, *signa congruentiae* are deployed at the moment where the theoretical point is demonstrated, to increase its prominence within the musical notation.

The use of a citation of greater rhythmically complexity here may show that Tinctoris was looking to demonstrate a kind of progression throughout his citations. In effect, this second citation functions within a broader framework of exemplification that allows for a slight increase in the level of complexity. This comes, in part, from

⁷⁴ Analogously, with respect to the seemingly polyvalent meanings of cut mensurations signs, see Margaret Bent, ‘The Early Use of the Sign ϕ ’, *Early Music*, 24/2 (1996), pp. 199–216+219–221+223–225. See also Rob Wegman, ‘Different Strokes for Different Folks? On Tempo and Diminution in Fifteenth-Century Music’, *Journal of the American Musicological Society*, 53/3 (2000), pp. 461–505; Margaret Bent, ‘On the Interpretation of ϕ in the Fifteenth Century: A Response to Rob Wegman’, *Journal of the American Musicological Society*, 53/3 (2000), pp. 597–612.

⁷⁵ A similar technique is also seen throughout *Prop. mus.*: see Chapter Five.

Tinctoris's decision to include a complete Tenor ligature, rather than notating it in its constituent parts, requiring a fairly extended passage to be included from the Discantus.⁷⁶

The complexity is also slightly increased by the placement of the dissonance as part of a syncopated cadential unit, requiring a slightly more careful consultation of the mensural context to be conducted. That said, this point is not significantly different from the first citation in Figure 49, with *signa congruentiae* taking on the same function as before. Thus, the slight increase in complexity does not necessarily constitute a part of a carefully considered pedagogical trajectory.

A possible further layer of exemplarity is at work across this pair of examples, relating directly to repertoire chosen and the musical context of the whole treatise. For this pair of citations, Tinctoris selected works from both the sacred and secular spheres to demonstrate the same theoretical point: De Domarto's *Missa Spiritus almus* and Busnoys' *Maintes femmes*. The two spheres had distinct musical styles and performance practices, and thus the demonstration of a fairly commonplace point in both contexts might have been pedagogically useful.⁷⁷

Referential citations of existing works as examples of 'good' practice

Although Tinctoris tends to use fully notated citations from existing works to demonstrate contemporary compositional and notational practices that he disagrees with, passing references are made to a number of compositions across his theoretical output. Despite their being less active in the process of demonstrating specific theoretical points, these citations are nevertheless worthy of discussion as they demonstrate another aspect of Tinctoris's exemplification strategy. Tinctoris's approach in this regard builds upon a much older tradition of exemplarity, as evidenced in Chapter Two in the Berkeley treatises. Although such usage is not innovative, Tinctoris deploys these citations to demonstrate aspects of 'style' that shorter examples

⁷⁶ Intriguingly, Busnoys did not write out the Tenor, instead providing two verbal canons (one for the refrain, the other for the *residuum*) to allow the reader to derive the part from the Discantus. Thus, Tinctoris did not need to notate the Tenor in ligature: he chose to. Tinctoris's notation of the Discantus is found identically in the Colombina chansonnier (E-Sco 5-1-43), though this source uses a different clef and gives only the canon for the Tenor. A *resolutio* that is derived from the Discantus is given for the refrain in Petrucci's *Canti C*, fols. 107v–109.

⁷⁷ A similar mixing of sacred and secular repertoire can be found in the three citations used in *De contr.* II.xxxiii.5–6. These citations are taken from Faugues, *Missa Le serviteur*; Busnoys, *Je ne demande*; Caron, *Hellas*.

suitable for inclusion in a treatise could not. Thus, these citations serve to extend the precepts he sets out.

One of the most concentrated collections of referential citations is found at the conclusion of III.viii in *De contr.* In this chapter, Tinctoris discusses his eighth and final general rule for the composition of counterpoint, stating that variety must be sought very carefully in all counterpoint, invoking the rhetorical concept of *varietas* as a compositional guide.⁷⁸ This general rule includes textual citations from Horace along with passing references to Cicero and Aristotle, as one might expect given the relationship to rhetorical study, and the humanistic kudos attached to Tinctoris's citation of these authors.⁷⁹ Unlike many of his other discussions of general rules, this chapter only includes text-based references to compositions that are particularly good examples, in Tinctoris's eyes, of *varietas*. For this concept, it would seem that Tinctoris favoured referential citations over short notated excerpts from these works.

The works that Tinctoris highlights as models of *varietas* are: Du Fay's *Missa L'homme armé*; Faugues's *Missa Vinus* [*Missa Vinus vina vinum*]; Regis's motet *Clangat*; Busnoys's motet *Congaudabant*; Okeghem's chanson *Ma maistresse*; Caron's chanson *La Tridaine a deux*.⁸⁰ These compositions are all drawn from the same kind of repertory that Tinctoris cites in fully notated forms throughout his notational works, suggesting a familiarity on his part and a likely availability.⁸¹

Such an approach towards the citations of this material might be partially accounted for by practical considerations. Tinctoris's theoretical point is one that would have required extended exemplification to accurately convey the type (and scope) of variety that he has in mind, going beyond even the most luxurious of space allowances in the presentation volumes of his works. Thus, it is entirely logical to see why he chose

⁷⁸ Tinctoris, *De contr.*, III.viii.9–10, 'De octava et ultima generali regula quae varietatem in omni contrapuncto exquirendam accuratissime precipit'. On Tinctoris's views on *varietas*, see Alexis Luko, 'Tinctoris on Varietas', *Early Music History*, 27 (2008), pp. 99–136; Jeffrey J. Dean, 'Towards a Restoration', esp. pp. 34–40.

⁷⁹ Tinctoris also opens *De reg. val.* with the same opening words as Cicero's *De oratore*: 'Cogitanti mihi'. Ciceronian influence is also present in Tinctoris's *Prop. mus.* See Ronald Woodley, 'Reading Renaissance Music Theory as Literature: On Reading the *Proportionale musices* of Iohannes Tinctoris', *Renaissance Studies* 1/2 (1987), pp. 209–220; Rob C. Wegman, 'Tinctoris's *Magnum opus*'

⁸⁰ It is intriguing that, to my knowledge, the works by Busnoys and Caron, are lost. The mass attributed to Faugues survives in V-CVbav C. S. 51, a source that also contains a great deal of the repertory cited by Tinctoris in his treatises: see Rob C. Wegman, 'Guillaume Faugues and the Anonymous Masses "Au chant de l'alouete" and "Vinnus vina"', *Tijdschrift van de Vereniging voor Nederlandse Muziekgeschiedenis*, 41/1 (1991), pp. 27–64.

⁸¹ For Tinctoris, this repertoire may have been available in Neapolitan music sources or from his own collection of music, which surely must have been fairly extensive given his experience at this point in his career.

to refer to pieces in the text rather than include extended passages from each of them. His decision to refer the reader to a whole musical composition would allow the concept to be seen working at both a local and structural level. In the sixteenth century, Pietro Aron took this approach a step further, and clearly conceived his citations with specific Petrucci prints in mind.⁸² Such an approach might demonstrate a greater sense of cohesion between music theory and the practical world of musical performance.

As no musical notation is used in these citations, a different form of the exemplification model is at work from those cases outlined above. This model holds the most similarities with those associated with text-based citations of classical literature that I have excluded from the detailed discussions of this thesis.⁸³ However, in referring to musical compositions by title and composer attribution, Tinctoris encourages the reader to look beyond his theoretical work for musical justification of the theoretical point, and thus the citations are ‘musical’ in an indirect sense. Indeed, Tinctoris’s references cite two works from each of the main notated musical genres of his era: the mass, the motet and the chanson.

Tinctoris, therefore, points the reader to multiple works that they might encounter in a number of performative scenarios, either as a listener or as a performer. Of the six pieces cited here, only one is cited elsewhere in Tinctoris’s theoretical output: the *Missa Vinnus vina vinum* attributed to Faugues is also cited without notation in *Prop. mus.*, and thus Tinctoris only uses this piece in a referential manner across his output.⁸⁴ Such referential citations might be interpreted as a kind of ‘further reading’ list for a student who has completed Tinctoris’s course in counterpoint, or be indicative of the repertoire which influenced Tinctoris’s opinions on contrapuntal and compositional style.

⁸² Cristle Collins Judd, *Reading Renaissance Music Theory: Hearing with the Eyes* (Cambridge: Cambridge University Press, 2000), pp. 37–81.

⁸³ This type of citation is found most frequently in the more speculative *De inventione et usu musicae* and *Complexus effectuum musicarum*, which have been excluded from the present discussion for methodological reasons. I hope to address this type of exemplary content more fully in future research. Jeffrey Dean has been working on Tinctoris’s use of Greek authorities, mediated through printed Latin translations, many of which can be linked to Venice: see Jeffrey J. Dean, ‘Tinctoris, His Greek Authorities, and *De inventione et usu musicae*’. See also, Luisa Zanoncelli, *Sulla estetica di Johannes Tinctoris, con edizione critica, traduzione e commentario del Complexus effectuum musicarum* (Bologna: A. Forni, 1979); Reinhard Strohm and Donald Cullington, ed. *On the Dignity & the Effects of Music: Egidius Carlerius; Johannes Tinctoris*, Institute of Advanced Musical Studies [King’s College London], Study Texts, No. 2 (London: King’s College London, 1996). Similar themes are also highlighted in Christopher Page, ‘Reading and Reminiscence: Tinctoris on the beauty of music’, *Journal of the American Musicological Society*, 49 (1996), pp. 1–31.

⁸⁴ Tinctoris refers to Faugues piece in the same sentence as De Domarto’s *Missa Spiritus almus*, also mentioned without notation in this instance. See Tinctoris, *Prop. mus.*, III.ii.21.

In referring the reader to works outside of the treatise, Tinctoris helps to situate his theoretical point within a wider musical context, framing his detailed discussion as part of musical pedagogy leading to practical performance. The practice of praising composers, many of whom he criticises earlier in the same treatise, might also present Tinctoris in a more accepting theoretical light, further emphasising his passion for the works of the great masters of his age, and the merit that he saw in many of their compositions. One might also construe this approach as analogous with his invocation of textual authorities in his more speculative treatises.

In Tinctoris's *Prop. mus.*, referential citations of pre-existent compositions appear much more frequently and are spread across the treatise. One of the most interesting instances occurs immediately following the aforementioned citation of Okeghem's chanson *L'autre d'antan*. After lambasting Okeghem's erroneous use of a $\circ 3$ signature to indicate a change to *sesquialtera*, Tinctoris notes that Du Fay uses the same proportional sign to indicate *dupla sesquiquarta* in the *Qui cum patre* section from the Credo of his *Missa de Sancto Antonio*. Tinctoris goes on to highlight Du Fay's error, but does not provide a detailed description of the specific theoretical transgression. Instead, Tinctoris's critique of Du Fay is more cursory, simply noting the presence of an error without discussing it further or providing a short notated example as evidence.⁸⁵

Such a practice, when working alongside a fully notated citation of all voice parts from another existing piece, helps to set the treatise within a wider musical context without losing pedagogical focus or taking up large amounts of page space. In effect, a reader could consult Tinctoris's text alone, or search out the example from Du Fay's mass if they required further demonstration of a notational irregularity that Tinctoris took issue with. This approach would have situated Tinctoris's treatise within a richer musical context and demonstrated the breadth of his repertorial knowledge.

Citations containing all voice parts from a pre-existent musical work

For the most part, Tinctoris includes only two voices when citing a passage from an existing work. This approach applies to most examples across his theoretical output, save for two examples, one of which is the aforementioned citation of Okeghem's

⁸⁵ David Fallows contextualises this notation as a change from $\circ 2$ to $\circ 3$, without mention of Tinctoris in *Dufay* (London: Dent, 1987), p. 188

L'autre dantan. The other example of a citation of all voice parts is found in *Prop. mus.* III.iii where Tinctoris presents a citation of Petrus de Domarto's *Missa Spiritus almus*, a favourite target for criticism.⁸⁶ In this instance, Tinctoris cites all four voices from the opening of the Gloria from De Domarto's work, although it should be noted from the outset that only two voice parts are active for most of the example.⁸⁷

The example follows a description of the correct method of indicating proportional relationships, reminding the reader of more abstract discussions from earlier in the treatise. He then proceeds to criticise De Domarto for notating the Tenor in augmentation (*proportio subdupla*) using only the signature of major prolation.⁸⁸

In quo de Domarto pluries in missa *Spiritus almus* intolerabiliter peccavit, nam in primis partibus *Et in terra, Patrem et Sanctus* supremum et contratenores per relationem ad tenorem ex dupla confectos, sine signo, ac si equaliter eos constituisset indiscrete reliquit, ut hic:

In this regard De Domarto has erred intolerably many times in his mass *Spiritus almus*, for in the first sections of the 'Et in terra', 'Patrem' and 'Sanctus' the supremum and contratenors are set in duple relationship to the tenor, and he has carelessly left them without a signature, as though they were set up in equal proportion, as follows.⁸⁹

Although the Tenor uses a \ominus signature to indicate imperfect tempus with major prolation in contrast to the circle signatures of the other three voices, this difference is not sufficient to show that it is in augmentation (*proportio subdupla*). If De Domarto had added a 2/1 fractional signature after the mensuration sign in the Supremum and two Contratenor parts, this would have followed Tinctoris's practice. However, if followed strictly, the three proportional voices move too quickly in relation to the Tenor. Thus, the Tenor should have been accompanied either by the proportion 1/2 or a canonic instruction, such as 'Crescit in duplo', to slow the minim to that of the semibreve of the proportional voices, effectively doubling the duration of each note in the Tenor. This, in part, relates to the fifteenth-century practice of using signs of major

⁸⁶ Tinctoris cites De Domarto's *Missa Spiritus almus* numerous times across his treatise, with most citations being used to demonstrate a bad contemporary theoretical practice. It is not clear why this piece was singled out for so much criticism: see n. 14.

⁸⁷ Examples of the citation of a complete polyphonic texture were seen in early theoretical treatises, particularly when discussing hoquet practices. See the discussion of the Anonymous of St. Emmeram's *De musica mensurata* (Chapter Two, Figure 12) as an example of this.

⁸⁸ Tinctoris describes this error as 'intolerabilis'. The citation used by Tinctoris differs in some regards from the version of the mass transmitted in V-CVbav C. S. 14 (fols. 38v–47), suggesting that this was probably not the source used by Tinctoris for *Prop. mus.*. See Woodley, *The Proportionale musices of Iohannes Tinctoris*, p. 440.

⁸⁹ Tinctoris, *Prop. mus.*, III.iii.3, ed. D'Agostino, p. 82 and trans. Woodley, p. 362.

prolation as a method to indicate augmentation in relation to minor prolation.⁹⁰



The image shows a musical score for four voices: Supremum, Contratenor primus, Contratenor secundus, and Tenor. The score is in mensural notation with various note values and rests. The Tenor part has a "(2/1)" marking above it. Each part ends with "etc.".

Figure 51. Tinctoris, *Prop. mus.*, III.iii.3. Citation from Petrus de Domarto's *Missa Spiritus almus* showing incorrect proportional indications (E-VAu 835, fol. 160).

The citation of De Domarto's *Missa Spiritus almus* presents a single demonstration of the theoretical point described in the text, though this demonstration takes place in a structural sense not seen in many of Tinctoris's examples from pre-existent music. Tinctoris's problems with the ambiguous practice are clearly laid out in the text, which in turn describes the voice parts in which the error takes place.

⁹⁰ This topic is explored, in detail, in Anna Maria Busse Berger, *Mensuration and Proportion Signs* esp. pp. 91–94. See note 52. This type of notation was propagated on the Continent through the influence of this mass: see Rob C. Wegman, 'Petrus de Domarto's "Missa Spiritus almus"' and Jeffrey J. Dean, 'Towards a Restoration'.

By adopting this approach, Tinctoris makes the theoretical point clear to the reader before the citation is even consulted, highlighting the specific theoretical point on display in the notation. However, the reader would have been required to understand the practice of tenor augmentation in cases such as this, presuming practical knowledge that is not covered at all in Tinctoris's texts as he considered it false.

A specific instance is highlighted in the text, in this case the lack of proportional indication in the *Supremum* and two *Contratenor* voices, which is then demonstrated in the musical notation provided. However, the critique of contemporary practice that Tinctoris offers distinguishes this example from more straightforward instantiation, as it demonstrates 'bad' theoretical practice. Such an approach might have increased the sense of relevance of Tinctoris's text to contemporary compositional and notational practices, and some of the errors found in these practices.

Rather intriguingly, the example chosen by Tinctoris only includes a small amount of musical material for the Tenor, which is most affected by the proportional relationships going on around it. The Tenor consists of only a single note, and thus there is seemingly only a single opportunity for the reader to identify the relationships between the Tenor and the voices in *duple* proportion. However, the introductory rests might have been sufficient to make the 'deficiency' of the Tenor relative to the other voices clear. This is perhaps most explicit if the Tenor and *Contratenor secundus* part are compared. In other cases, Tinctoris's choice of citations allows for particular theoretical points to be seen several times in different contexts within a single example, or at least placed in a context whereby the theoretical error can be identified more easily. The rests in the Tenor could have been used to understand the theoretical practice being demonstrated, though they do not afford the reader the additional 'safety net' that the consonant profile of a polyphonic texture would offer. That said, Tinctoris's point is expressed clearly and concisely, and thus the example fulfils its function.

In the text, Tinctoris refers to the same theoretical transgression being committed in the *Credo* and the *Sanctus* of the same piece, and thus Tinctoris's citation provides only a single instance of a more prevalent practice. An examination of the *Credo* reveals that the *Supremum* and two *Contratenors* are set in *tripla* proportion at the level of the *breve* to the Tenor, indicated in the same fashion as in Figure 51. The *dupla* proportion is retained at both the *minim* and *semibreve* level. The *Sanctus*, like the *Gloria* shown in Figure 51, is set in *dupla* proportion against the Tenor.

By referring to further errors within the same piece, all of which occur at the beginning of movements and would thus be easily identifiable from the notation or aural recall, Tinctoris might have encouraged a diligent reader to consult the notation more carefully to see the application of the error across the whole structure of the mass. Indeed, his use of references to other parts of the same piece, rather than notated citations, may also have been born out of practical considerations. Citing lengthy portions of existing works with multiple voice parts would require a large amount of page space, and thus Tinctoris's references may have been a compromise between theoretical criticism and the practical realities of manuscript production. Such duplication would probably not have contributed significantly enough to the theoretical point to justify their inclusion.

Indeed, it is significant that Tinctoris restricts the length of the citation of all four voices from De Domarto's *Missa Spiritus almus* in *Prop. mus.* to a minimum. In his treatise on counterpoint, large amounts of page space are dedicated to lengthy polyphonic miniatures that extend beyond the theoretical requirements of the text. Given that *Prop. mus.* was completed in the earlier part of Tinctoris's Neapolitan career, it is hardly surprising that his examples remain focused and concise, making most effective use of the page space available. The relative scope of the examples found in Tinctoris's other texts compared to *De contr.* are discussed more fully in Chapter Five, but for the present chapter it is sufficient to say that Tinctoris makes much more generous use of the available page space in his treatise on counterpoint.⁹¹

Citations from Tinctoris's own standalone compositions

As the discussions of this chapter have shown, Tinctoris made extensive use of musical citations taken from pre-existent polyphonic works as an intrinsic component of his notational treatises. As a general rule, Tinctoris does not use citations from his own standalone compositions as exemplary content in his treatises, instead preferring to cite the works of others or to compose new pedagogical miniatures tailored for theoretical demonstration.⁹² Indeed, there is only a single exception to this general rule.

⁹¹ Ronald Woodley's recent revision of the dating of V might point towards the manuscript plans being in place whilst Tinctoris was still completing *De contr.* Tinctoris might have been aware of the luxury of space being lavished on the commission, and thus significantly expanded the scope of the examples in the latter stages of the treatise's completion.

⁹² Tinctoris generally uses only his own compositional miniatures in his treatises. Although it is possible that some of these works circulated in a standalone form, the scope of their composition is clearly one of a pedagogical miniature rather than as a more extended musical composition as such.

In the prologue to *De alteratione*, Tinctoris refers to one of his own mass settings based on the song ‘Nos amis’ in outlining his motives for compiling the treatise.⁹³ Tinctoris’s text is unusual here in a number of ways that relate to the pedagogical structure of the treatise, possible readership groups, his own compositions, and contemporary criticism of compositional practice as a pedagogical tool. He writes:

Nuper, egregie vir, meas usque ad aures rumor subvolavit quemdam cantorem tuo subiectum imperio me palam asseruisse circa quandam alterationem musicam errasse, eo quod quom in manibus suis habuisset officium nostrum iam olim super Nos amis editum, in ipso sub tempore perfecto inter duas breves duas semibreves, quarum ultima non alteratur, hoc in modo reperisset:

[EXEMPLUM]

In quo se admodum rusticum ostendit, non advertens alterationem aliquam non debere fieri ubi nullus est defectus numeri; eius licet rusticitati – hoc etenim iura precipiunt – sit parcendum, non tamen obiectum errorem, ne tacendo huic consentire videar, impurgatum censui reliquendum. Quamobrem hoc opusculum edidi et quidquid de notarum alterationibus sentiam in eo posui, ut quom id perlegere dignatus fueris, me reprehensum inique percipias et adversus calumniatorem pro veritate certando, quod proprium est viri fortis, tuearis et protegas.

Recently, distinguished sir, the rumour flew even to my own ears that a certain singer subject to your leadership openly claimed that I had erred about a certain musical alteration, on the grounds that, when he had had in his hands our mass set forth some time ago now upon *Nos amis*, he had found in it, under perfect tempus between two breves, two semibreves of which the latter is not altered, in this way:

[EXAMPLE]

In which he shows himself to be altogether a bumpkin, not realizing that an alteration must not be made where there is no deficiency of number. Although he must be excused for his bumpkinishness — for indeed the laws demand this — nevertheless I did not think the error objected should be left unpurged, lest by keeping silent I should seem to agree to this. For this reason I have set forth this little work and placed in it whatever I understand about the alterations of notes, so that, when you have deigned to read it through, you may perceive me to have been unjustly censured, and may, by contending on behalf of the truth (as befits an honourable man), defend and protect me against the malicious prosecutor.⁹⁴

⁹³ This work should probably not be identified with a mass cycle found across multiple manuscripts: a Kyrie and Gloria that are probably from this mass cycle have been found in I-TRbc 89, fols. 162v-164r; other sections may be identified with those in the Strahov Codex (CZ-Ps MS D.G.IV.47), fols. 114v–119v. Neither source includes a composer attribution. See Reinhard Strohm, *The Rise of European Music 1380–1500* (Cambridge: Cambridge University Press, 1993), p. 430; Strohm, ‘Die Missa super “Nos amis” von Johannes Tinctoris’, *Die Musikforschung*, 32 (1979), pp. 34–51. On the relationship between the Strahov Codex and Trent 89, see Paweł Gancarczyk, ‘The Dating and Chronology of the Strahov Codex’, *Hudební věda*, 43/2 (2006), pp. 135-146. A different *Missa Nos amis*, with a complete Kyrie and Gloria and most of the Credo, is also found in the Lucca Choirbook (I-La 238).

⁹⁴ Tinctoris, *De alt.*, Prol.3–6, ed. and trans. Jeffrey J. Dean and Ronald Woodley (online), <http://earlymusictheory.org/Tinctoris/texts/dealterationenotarum/#pane0=Edited&pane1=Translation> (accessed 19 October 2015).



Figure 52. Tinctoris, *De alt.*, Prol.3–6. Citation of a single voice part from Tinctoris’s *Missa Nos amis* (E-VAu 835, fol. 67).

The first point of interest here is the fact that Tinctoris appears to have composed this treatise, or at least issued it in a new form, in response to supposed criticism of notational practice in one of his own compositions. The rumoured criticism comes from a singer who, working under the tutelage of Guillelmus Guinandi, the dedicatee of the treatise, has taken issue with Tinctoris’s notational practice.⁹⁵ Such an address would seem to suggest that Tinctoris constructed this treatise with a hypothetical student in mind, using his treatise as a guide to the correct notational practices of alteration. Indeed, Tinctoris’s treatise was among the first dedicated exposition of the principles to include such a fine level of detail. The close study of musical notation in this way is indicative of the most probable main readership for Tinctoris’s theoretical text, one that would seem to sit alongside the rather technical and complex nature of the subject matter under discussion. It also confirms that students were engaged in a critical appraisal of notational practice as well as contrapuntal practice, something often assumed but rarely made explicit.

From the point of view of the example itself, the citation of only a short passage from a single voice of this now lost work is significant. Tinctoris’s text suggests that this is an older piece, and could, if identified securely, offer an insight into Tinctoris’s early compositional style.⁹⁶ In citing only a single voice part, Tinctoris adopts a

⁹⁵ Woodley suggests that Guillelmus Guinandi should be identified with Antonio Guinati, based upon Tinctoris’s description of him as first chaplain of the Duke of Milan. See Woodley ‘Commentary’, http://www.stoa.org/tinctoris/tractatus_alterationum/tractatus_alterationum.html (accessed 27 May 2015).

⁹⁶ Tinctoris refers to this piece as ‘iam olim super “Nos amis” editum’, suggesting that it was composed ‘a while back’. It is all but impossible to provide an estimated date for this composition. It may predate his move to Italy, but insufficient evidence survives to make any substantiated estimate.

different approach towards the exemplification of his point than he does for all other citations from existing works. The text that immediately precedes the example specifically describes the rhythmic scenario on display in the short passage of musical notation provided. This demonstrates some subtle differences from Tinctoris's other prologues, most of which adopt a different rhetorical register to the technical subject matter that the treatise covers. In this instance, Tinctoris adopts legal rhetoric, perhaps because Guinand was also a lawyer, and maintains it for the first few paragraphs in the first chapter.⁹⁷

In describing the notational scenario of two semibreves placed between two breves under perfect tempus so precisely in the text, the example operates in a similar fashion to the graphical demonstrations discussed in Chapter Three.⁹⁸ The theoretical content from the text is mapped into musical notation, resulting in a short musical citation that contains little extraneous musical material. However, it is important to note that this musical example fits into Tinctoris's pedagogical structure in a different way from the graphical demonstrations (such as clefs and intervals) discussed in Chapter Three. Instead, the example does not accompany a specific theoretical point or general rule as such, but rather serves to provide a rationale for the treatise as a whole: it was Tinctoris's point of departure.

Careful attention was clearly paid to the notational elements that were required for this musical example. After the mensuration sign, this example opens with two semibreve rests, an unusual decision given the single voice nature of this example. However, the two semibreve rests are a crucial part of the theoretical point, as they inform the correct resolution through imperfection.

Although Tinctoris describes the key theoretical moment of the example with some specificity in his text, he does not take this opportunity to explain in detail why the singer-critic is wrong to suggest that alteration should take place here. Such detail has to wait until Tinctoris's later first and sixth general rules. Tinctoris says that this example was intended to serve only as a justification for the codification of the rules of

⁹⁷ This approach is seemingly an intermediate stage between the highly defensive prologue to *De ton.* and the majority of his other prologues. I am grateful to Jeffrey Dean for drawing my attention to this subtle change in register and its status in Tinctoris's output.

⁹⁸ Tinctoris does not describe how the notation should be resolved correctly in his text. However, he clearly counts the two minims as a semibreve-equivalent group that imperfects the opening breve. The semibreve that follows is grouped with the two semibreve rests at the start of the example.

alteration. Thus, its exemplary function is different from that of most of Tinctoris's other examples across his notational treatises.

Given its rather anomalous nature, this example should be considered outside of the normal models of exemplification associated with citations taken from pre-existent musical works. Nevertheless, it is significant that Tinctoris made use of only a single citation from his own standalone polyphonic compositional output, which although modest in size, was certainly not inconsiderable. It is noteworthy that for the remaining sections of the treatise, Tinctoris returns to normal procedures, as outlined in Chapter Three.

Summary

From the evidence explored in this chapter, it is clear that Tinctoris made effective use of exemplary content taken from pre-existent works in a number of interesting ways. It is widely understood that Tinctoris's approach of using exemplary content from pre-existent musical works was unusual in its own time. Tinctoris's use of such material seems to mark the beginning of a trend towards increasing integration of theoretical discussions within contemporary performance culture, using methods of exemplification as one aspect of this shift.

Most of the discussions of this chapter have centred on the examples found in *De contr.* and *Prop. mus.*. However, short extracts from existing works are also found in *De imperf.*, a text in which the direct practical application of the more extended reaches of Tinctoris's theory is sometimes difficult to ascertain.⁹⁹ There is also an anomalous case found in the prologue to the treatise on alteration, though as outlined above, this example adopts a different function to the others surveyed in this chapter.

Most of the examples taken from existing works function within a model of exemplification that this thesis describes as 'context-critical', forging links between the theoretical text and contemporary composition. It is these citations that draw Tinctoris's theoretical texts closer to contemporary performance culture, working with his other exemplary content to form a rich theoretical whole. Such citations also offer a partial insight into the ways that musical notation and the study of existing works were used in music pedagogy at the time.

⁹⁹ The complexity of some of his general rules extends beyond the practical uses of imperfection in day-to-day composition. The inclusion of such complex material shows what is theoretically possible, but was rarely applied even in Tinctoris's own compositions.

The repertory that Tinctoris cites across his notational treatises represents a fairly broad cross-section of music from the Low Countries in the mid-fifteenth century. Composers such as Okeghem, Busnoys, and Du Fay, whose works would have been known internationally, are among the most frequently cited, further evidencing the influence of these composers upon Tinctoris's own musical education and repertorial knowledge. Interestingly, Tinctoris also cites works that are otherwise unknown in extant sources, or those composers, such as Pasquin, whose compositional output was less well-known, even if their works enjoyed modest circulation in Italy.¹⁰⁰

For the most part, Tinctoris does not cite all of the voice parts from the polyphonic parent work, with many examples consisting of only two voices, even when the parent work has three or four voices. This approach helps to retain a clear pedagogical focus in these citations from existing works, reducing the amount of contextual clutter present in the example that might obscure key parts of the theoretical point.

The approaches taken towards the inclusion of this type of exemplary material show a pedagogically driven attempt to integrate theoretical discussion into musical practice more fully than many contemporaneous treatises did. This method is further explored in the manner that Tinctoris constructs tightly controlled (mostly) polyphonic miniatures to sit alongside these citations from existing works, a topic discussed further in the next chapter.

¹⁰⁰ Courbet's name is mentioned in a list of composers names in *Prop. mus.* III.iii.7.

Chapter Five: Tinctoris's own newly composed polyphonic miniatures

Chapters Three and Four examined the models of exemplification associated with newly composed monophonic examples, which account for the largest proportion of Tinctoris's musical examples, and citations from existing musical compositions. The results of these investigations demonstrate that Tinctoris's approach to the inclusion of exemplary content can be understood in terms of clearly-defined models of exemplification, which Tinctoris applied with relative consistency across the theoretical texts that contain the relevant musical examples.

In this chapter, the models of exemplification associated with Tinctoris's own, presumably newly composed, polyphonic miniatures will be examined in detail.¹ Tinctoris's skill as a composer has been rather sidelined in favour of his theoretical work in modern scholarship, though there is a published edition of his compositions and a recent article by Jeffrey Dean on his *Missa L'homme armé*.² Although Tinctoris's compositions may perhaps lack the distinction and creative invention of those by such contemporaries as Okegham and Busnoys, there can be no doubt that he was a talented composer. His pedagogical polyphonic miniatures show clear evidence of this skill, particularly when the restrictions often placed upon these compositions by his theoretical argument are taken into account, occasionally presenting insurmountable compositional challenges for a lesser composer.³

Tinctoris's relatively small corpus of standalone musical compositions, including four masses and a number of chansons and motets, has received some scholarly attention, though not as much as other composers with similarly limited musical output. Some of these works appear in high-profile manuscripts and printed volumes, and thus it seems that he was a composer of good standing in his own time.⁴ It is my view that

¹ It is not always possible to determine precisely whether these examples were newly composed, but their specific relevance to the text strongly suggests this.

² Tinctoris, *Opera omnia*, ed. William E. Melin, *Tinctoris opera omnia* (Corpus mensurabilis musicae [18], 1976); Jeffrey J. Dean, 'Towards a Restoration of Tinctoris' *L'homme armé* Mass: Coherence, Mensuration, *Varietas*', *Journal of the Alamire Foundation*, 5/1 (2013), pp. 11–40.

³ The present chapter will focus primarily upon *De contr.* and *Prop. mus.*, though passing references will be made to his other notational treatises throughout the discussion.

⁴ Such volumes include the US-NHub 91, V-CVbav C. S. 35 and the first book of Petrucci's *Lamentationum Jeremie prophete liber primus* (1506). On Petrucci's volume, see Peter Scott, *Ottaviano Petrucci's Lamentationum liber primus and liber secundus (1506/1 and 1506/2); a bibliographical, contextual and analytical study*, PhD diss. (University of Durham, 2004).

his pedagogical miniatures are important examples of his compositional approach and style. These will be explored more fully over the course of this chapter.

Tinctoris's newly composed polyphonic miniatures are deployed with the greatest frequency in those notational treatises that relate most closely to polyphonic practice, principally *De arte contrapuncti* and the *Proportionale musices*, to accompany a range of theoretical points. This range of topics results in the formation of a variety of text–example relationships that require a more detailed examination than exists currently in scholarly literature on this subject.

To best understand the approaches that Tinctoris adapted subtly for each case, this chapter will group the exemplification strategies used for this type of example into subcategories, building upon the discussions of Chapters Three and Four. Such groupings will aid the establishment of ‘models’ of extrapolation exemplification, enhancing our current understanding of the role that Tinctoris envisaged the examples would play in the theoretical ‘whole’.⁵

Exemplification of specifically defined theoretical points

Throughout *Prop. mus.*, Tinctoris provides numerous short, two-voice polyphonic musical examples to accompany the definitions of almost all of the proportional relationships covered in the text. These two-voice miniatures, regularly consisting of fewer than five bars when transcribed into modern notation, are not composed in a way that renders these as anything other than examples constructed specifically for a theoretical point.⁶ Despite the ‘exemplary’ nature of the musical content, the approach towards exemplification is intriguing, and varies on a case-by-case basis.

Tinctoris's *Prop. mus.* is one of the most important treatises on musical proportions for the real world of the late fifteenth-century musician, as it discusses the topic in terms of rhythm rather than harmonic intervals. Countless theorists chose the latter approach to discuss proportions in music treatises from the earliest parts of the period covered by this thesis. The earliest treatise to discuss proportions in rhythmic terms was Prosdocimo de' Beldomandi's *Tractatus practice de cantus mensurabilis* (1408), though this discussion is only brief and does not include any notated musical

⁵ As discussed elsewhere in this thesis, this can be understood as the interactions between text and example on the page and the effects that this could have upon the understanding of a hypothetical reader.

⁶ As will be discussed later in this chapter, a number of those from *De contr.* seem to offer additional functionality through extra-textual references and more complex polyphonic structures.

examples.⁷ Busse Berger observes that the earliest musical work to contain numerical proportion signs is Anthonello de Caserta's *Amour m'a le cuer mis*, found on fols. 33v–34 of **ModA** (I-MOe α .M.5.24) and dating from 1410–1411.⁸ Interestingly, these proportion signs are presented as fractions, a technique advocated by Prosdocimo and reinforced vigorously by Tinctoris in his *Prop. mus.* It should be noted at the outset, however, that proportionality had existed prior to this point, with mensuration signs playing a significant role in this practice.⁹

Tinctoris discusses a far greater number of musical proportions than those found in earlier treatises, many of which discuss these in harmonic rather than rhythmic terms. Prosdocimo and Ugolino d'Orvieto listed the five musical proportions as 2:1, 3:1, 3:2, 4:3, 9:4. Later theorists added 4:1, 9:8, 8:3 to this list, with a few others adding 8:1, 9:1, 17:8, 5:4, 5:3 by the middle part of the fifteenth century.¹⁰ Following Tinctoris's example, Gaforus added a number of other proportions discussed in rhythmic terms to his list, expanding Tinctoris's proportional system.

After establishing the general principles of proportional relationships in music, and the correct methods by which they should be indicated in notational terms in a general sense, Tinctoris begins his methodical exposition of the permitted types of proportional relationship. This exposition begins in the fifth chapter, 'De genere multiplici' [On the multiplex class]. Tinctoris examines the proportional relationships of duple proportion (*dupla*) through to sextuple proportion (*sextupla*) in a characteristically systematic fashion. Given the similarities in the construction of the theoretical points and accompanying examples, only a single case from this chapter will be discussed here.¹¹

⁷ Coussemaeker *Scriptores*, vol. 3, pp. 218–219. The use of fractional signatures is also discussed in Prosdocimo's *Expositiones* (1404). See also Anna Maria Busse Berger, *Mensuration and Proportion Signs* (Oxford: Clarendon Press, 1993), pp. 164–196; 'The Origin and Early History of Proportion Signs', *Journal of the American Musicological Society*, 41 (1988), pp. 403–433.

⁸ Jason Stoessel discusses the rise of 'proportionality' in musical notations in *The Captive Scribe: The Context and Culture of Scribal and Notational Process in the Music of the ars subtilior*, PhD diss. (University of New England, 2002), pp. 239–315. His discussion of Baude Cordier (pp. 284–315) offers a subtly different interpretation to Busse Berger.

⁹ On the use of these symbols late fourteenth- and early fifteenth-century practice see Margaret Bent, *The Old Hall Manuscript: A Paleographical Study*, PhD diss. (University of Cambridge, 1968), pp. 206–276.

¹⁰ See Busse Berger, *Mensuration and Proportion Signs*, p. 167.

¹¹ A similar approach to that taken by Tinctoris here is seen in Sylvestro di Ganassi dal Fontego's, *Opera intitulata Fontegara* (Venice, 1535). Interestingly, Ganassi uses such examples in the discussion of extemporised instrumental performance practices.

For quintuple proportion (*proportio quintupla*), Tinctoris provides the following example (Figure 53) and writes:

<p>Quintupla est proportio qua maior numerus ad minorem relatus illum in se quinquies continet precise, ut 5 ad 1, 10 ad 2, etc., sicut hic:</p>	<p>Quintupla proportion occurs where the greater number, relative to the smaller, is exactly five times as large as the latter: for example, 5 to 1, 10 to 2, etc., as here:¹²</p>
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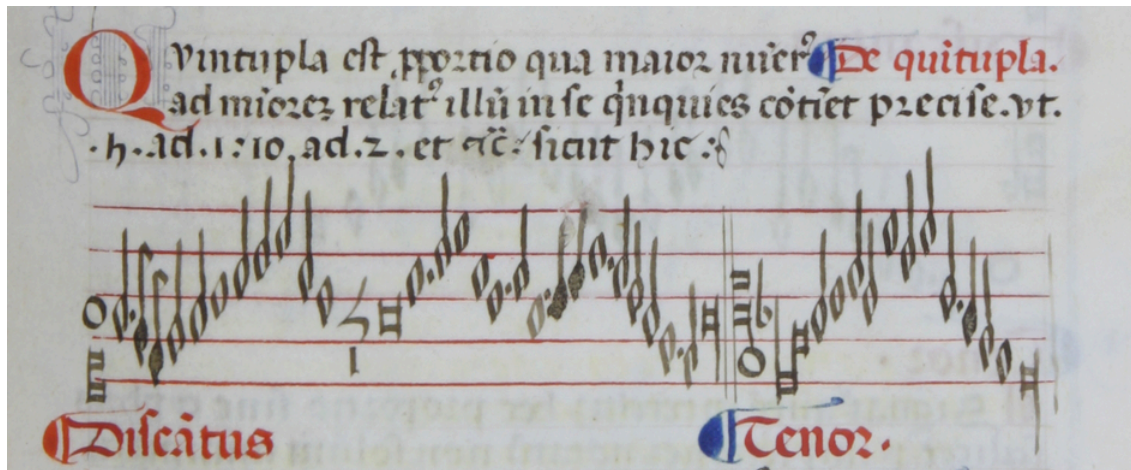


Figure 53. Tinctoris, *Prop. mus.*, I.v.13. Example showing quintuple proportion in one voice (E-VAu 835, fol. 148).

Tinctoris's short theoretical statement defines the mathematical principles underpinning the quintuple proportional relationship, offering two numerical examples in the text (5:1 and 10:2). The text is curiously quiet as to how a contemporary reader

¹² Tinctoris, *Prop. mus.*, I.v.13, ed. Gianluca D'Agostino (2008), p. 36 and trans. Ronald Woodley (1982), p. 323. All subsequent references to this treatise will be taken from this edition and translation.

might apply this to a real musical scenario, offering only an abstract mathematical explanation of the proportional relationship. Tinctoris leaves the practical explanation and demonstration to take place in the example alone. In effect, Tinctoris presumes a certain degree of familiarity with musical proportions and notation for the reader to understand his main theoretical point.¹³

In addition to this presumed familiarity, Tinctoris does not explore the areas of basic mensuration that impinge directly upon the discussions of proportion and correct interpretation of the notation in *Prop. mus.* Such an omission is striking given the meticulous rigour with which Tinctoris is often credited when compared with some of his contemporaries. The topic is covered extensively in *De regulari valore notarum*, a treatise entangled in a web of interdependencies with the treatises on imperfection, alteration and musical dots.¹⁴ To omit a discussion of mensuration, even at a basic level, from a treatise on rhythmic proportions, even if only in a brief discussion, is striking from a pedagogical perspective. Perhaps significantly, the example does not involve imperfection and alteration, using only dots of augmentation to alter the written values, all within the context of perfect tempus where these might occur. This might be explained as part of a strategy to ensure that there is nothing to distract the reader from the question of proportional change. Indeed, imperfection and alteration are severely limited in these proportional examples, helping to minimise the ambiguity of interpretation. For the modern scholar, however, such an omission is all the more frustrating as direct links between mensuration and proportion could illuminate aspects of the conceptualisation of rhythmic proportions for fifteenth-century musicians.¹⁵

Returning to the example of quintuple proportion, the demonstration consists of a short passage of two-voice polyphony, with a 5:1 proportional relationship indicated approximately halfway through the *Discantus*.¹⁶ The Tenor remains in ‘equal numbers’ (*equalibus numeris*) throughout, with both voices opening in the same mensuration. The effect that the 5/1 signature has on the note values is not explained in the text, and thus

¹³ It is, of course, possible that Tinctoris felt the musical application of this proportion would be too lengthy to describe in a text form.

¹⁴ These treatises were almost certainly composed after *Prop. mus.*

¹⁵ Similarly striking omissions are discussed later in this chapter, raising questions about the ordering of theoretical material in Tinctoris’s *Prop. mus.*

¹⁶ This example is also found in I-PEc 1013, fol. 81v, as are many of Tinctoris’s newly composed pedagogical miniatures. On this manuscript, see Bonnie J. Blackburn, ‘A Lost Guide to Tinctoris’s Teachings Recovered’, *Early Music History*, 1 (1981), pp. 29–116.

the reader must align the two voice parts correctly to understand the rhythmic effect that this proportional change has upon the Discantus.¹⁷

Although the notation is not explained fully in the text, there is clearly a pedagogical structure to the example. Tinctoris's decision to open both voices of the example in equal proportion was almost certainly a pedagogically motivated one. If the section of the example that is affected by proportional change is considered, it constitutes only a third of the example, exactly one *tempus* of the Tenor, meaning that the reader would have had ample time to establish the *mensura* fully in their mind. This is a manifestation of the precept established at the beginning of the treatise that a proportion can only relate to something and cannot exist in the abstract.¹⁸ For someone reading the Discantus, the establishment of a clear tactus would help to emphasise the rhythmic effect that such a proportional relationship has upon the durational values.

The placement of the signature is particularly noteworthy if examined a little more closely. Until this point in the example, the Tenor has remained below the Contrapunctus in terms of pitch, albeit separated by only a small pitch gap. At the point where the proportional signature is placed, the two voices come together in unison. The F-E-F Tenor suspension figure (rhythmically displaced against the Discantus) triggers a cadence, aurally marking a significant structural point in the example. When considered together, these two points would have helped to provide a point of alignment for a reader, and indicated that this was a particularly convenient gathering-point for the proportional change.¹⁹

The model of exemplification at work for this type of example is quite different from anything discussed in the previous chapters of this thesis. The lack of specific details in the theoretical text leaves a kind of 'open field' for demonstration in the musical example that accompanies this point. Tinctoris's decision to use a two-voice polyphonic miniature offers the reader an opportunity to understand the effect that such a proportional relationship would have on the duration of note values, alongside a

¹⁷ In this instance, the multiplex proportion is more extreme than usual, as the proportion applies even at the breve level. For many other examples in other proportional categories, the proportion effectively applies to the minim level only.

¹⁸ Indeed, as Tinctoris states in *Prop. mus.* I.ii.8, 'I would advise only that the simple rule be adopted that proportions should be indicated in relation to the second part, were it not for the fact that in the other interpretation, namely, the relationship to a preceding group of notes in the same part, many proportions can be sung, which otherwise would not be.' This shows that Tinctoris would prefer never to give a monophonic example of a proportion if it can be avoided.

¹⁹ This kind of suspension figure can also be found in the Tenors of examples where specific dissonances are highlighted with *signa congruentiae*.

referential voice part that retains the original *mensura*, without too much contextual clutter that could distract from the main point.

It is significant that Tinctoris adopts this approach for the proportional relationships that are exactly divisible into whole units, i.e. those that can be reduced to a ratio with 1. The pedagogical trajectory of the treatise, unlike some of his other texts, does not always seem to have been all that well thought out, though a general trend of increasing mathematical and rhythmic complexity can be applied to Books I and II.²⁰ Book III is a rather more curious collection of chapters, given that it contains material that one would expect to find in Book I. This is particularly true of the sixth and seventh chapters, which contain information that one would normally place at the beginning of the treatise as basic arithmetical underpinning for its contents. However, a trend of increasing complexity represents, in a general sense, the pedagogical trajectory of the treatise.

Explanations of foundational proportional relationships found in the early stages of the notational treatises may reveal something about the type of readership that might engage with such texts. Much like Book I of *De contr.*, Tinctoris's discussions in this chapter offer examples of rather basic musical concepts that would probably have already been familiar to a reader with limited experience. As discussed in Chapter Three, it can be argued that Book I of *De contr.* acts as a kind of 'vocabulary' to which a reader might have referred back when consulting more complex points later in the text. The type of example seen in this chapter of *Prop. mus.*, twinned with the limited textual explanation which states definition-based factual content, might also be indicative of a kind of referential 'vocabulary' role rather than a pedagogical course in foundational musical proportions, albeit exemplified using a different approach here.²¹

The use of two-voice examples for theoretical points such as this is not maintained across all of Tinctoris's theoretical works. In his treatises on imperfection and alteration, where highly complex mensural relationships are formed across the example without proportional change, Tinctoris chooses to use monophonic examples rather than polyphonic examples to demonstrate mensural intricacies within a voice

²⁰ Intriguingly, I.ii–iii seem to be out of place. From I.iv onwards, the grouping of Books I and II covering proportional 'theory' and Book III proportional 'practice' can be applied with greater security.

²¹ Many of Tinctoris's texts can be characterised as theoretical reference books rather than teaching texts in a more modern sense.

part.²² Rather than reducing the level of complexity, the absence of any referential voice part means that the reader is required to understand Tinctoris's theoretical point fully before applying this to the (often highly complex) notation at hand. This is in contrast to *Prop. mus.*, where the second voice functions in a referential role, offering a 'yardstick' against which the proportional change can be measured. In effect, Tinctoris offers the reader a chance to make use of the rules of consonance and counterpoint to aid the resolution of the examples in *Prop. mus.*, perhaps making its examples more instructionally useful than those in some other texts. Such a practice also continually reinforces Tinctoris's opening statement about his apparent preference for proportional relationships to be formed in a polyphonic context.²³

Given the relatively 'open field' for demonstration offered by the text, and the careful construction of the two parts to highlight the specific theoretical moment and aid its alignment, it seems that this example forms an individual pedagogical unit that relates directly to the text. The musical aspects of this precept are only explained in the musical notation itself, forming a different type of relationship with the text from that which has been seen previously. Without this example, Tinctoris's theoretical text, although mathematically sound, offers only a fairly abstract mathematical explanation of this relationship. Therefore, the example is integral to Tinctoris's theoretical point, and plays an active role in its demonstration, as has been shown for other aspects of his overall exemplification strategy.

The content of the theoretical text, albeit discussed only in an abstract sense, is therefore extrapolated into a musical scenario, forming a different text–example relationship from those discussed in Chapters Three and Four. Tinctoris's pedagogical miniature takes on a more active role in the demonstration of the theoretical point, offering the only explanation of its musical aspects. Thus, the text and musical example are accorded more or less equivalent status within the construction of the theoretical whole, offering a precise demonstration that a reader could refer back to if required, whilst also situating the point within a sufficiently realistic context.

²² Some of these complexities are discussed in Chapter Three. It is intriguing that Tinctoris adopted the polyphonic approach in an earlier treatise, but chose to use monophonic examples for his later treatises on imperfection and alteration. See Ronald Woodley, 'Syncopated Imperfection and Alteration in Tinctoris's Theoretical Writings', *Early Music Theory Online*, <http://earlymusictheory.org/Tinctoris/Articles/SyncopatedImperfection/#> (accessed 10 March 2015).

²³ See note 18.

In the latter stages of *De contr.*, Tinctoris deploys a number of polyphonic miniatures to demonstrate specific theoretical points. These polyphonic miniatures come in a variety of forms, but most consist of three voices and are more extended than those discussed from *Prop. mus.*²⁴ It is all but certain that most of Tinctoris’s polyphonic miniatures placed in Books II and III of *De contr.* were composed specifically for this treatise, as evidenced by the text–example relationships formed. The relative degree of specificity in the text and example, along with some other intertextual references, could be explained in no other way.

One of Tinctoris’s most striking polyphonic miniatures is found in *De contr.* II.xxxiv. This example accompanies a theoretical point that discusses issues surrounding false relations specifically caused by sharpening one note, rendering a perfect consonance “imperfect” (diminished) or “superfluous” (augmented), a topic that has received much attention in modern scholarship. Tinctoris writes:

<p>Concordantie vero perfecte que per semitonium chromaticum, hoc est per sustentionem, aut imperfecte aut superflue efficiuntur etiam sunt evitande, licet et his uti supra totam aut dimidiam aut maiorem partem note mensuram dirigentis, et perfectionem immediate precedentis, omnes fere compositores in compositione trium aut plurium partium, ut hic sequitur, expertus sim:</p>	<p>Again, perfect concords which are rendered imperfect or superfluous through the use of the chromatic semitone, that is through a raising of pitch, must also be avoided, although in my experience nearly all composers use even these, in compositions of three or more voices, over the full length, or half, or the greater part, of the note controlling the measure, and immediately preceding a perfection [cadence], as follows here:²⁵</p>
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Tinctoris’s explanation and demonstration of the process of chromatic alteration of perfect concords is included simply because so many contemporary composers used a practice that Tinctoris advised was ‘to be avoided’, continuing the address of the treatise towards a hypothetical student or single reader. Given that discussions of naturally false perfect concords (including those created by flattening one note) are

²⁴ The use of three voices poses additional challenges to silent comprehension and relates more closely to contemporary repertoire, given that three- and four-voice polyphonic works were more common.

²⁵ Tinctoris, *De contr.*, II.xxxiv, ed. and trans. Ronald Woodley, ‘Sharp Practice in the Later Middle Ages: Exploring the Chromatic Semitone and its Implications’, *Music Theory Online*, 12/2 (May 2006), p. 26. See also Margaret Bent, ‘On False Concords in Late Fifteenth-Century Music: Yet Another Look at Tinctoris’, *Théorie et analyse musicales 1450–1650: Actes du colloque international Louvain-la-Neuve, 23–25 septembre 1999*, ed. Anne-Emmanuelle Ceulemans and Bonnie J. Blackburn (Musicologica Neolovaniensia, Studia 9; Louvain-la-Neuve, 2001), pp. 65–118; Pedro Memelsdorff, ‘What’s in a Sign? The ♯ and the Copying Process of a Medieval Manuscript: The Codex Modena, Biblioteca Estense, α.M.5.24 (olim lat. 568)’, *Studi Musicali*, 30 (2001), pp. 255–79.

found in II.x–xvi and those created by sharpening in II.xvii, Tinctoris does not identify explicitly the false perfect concords here.²⁶

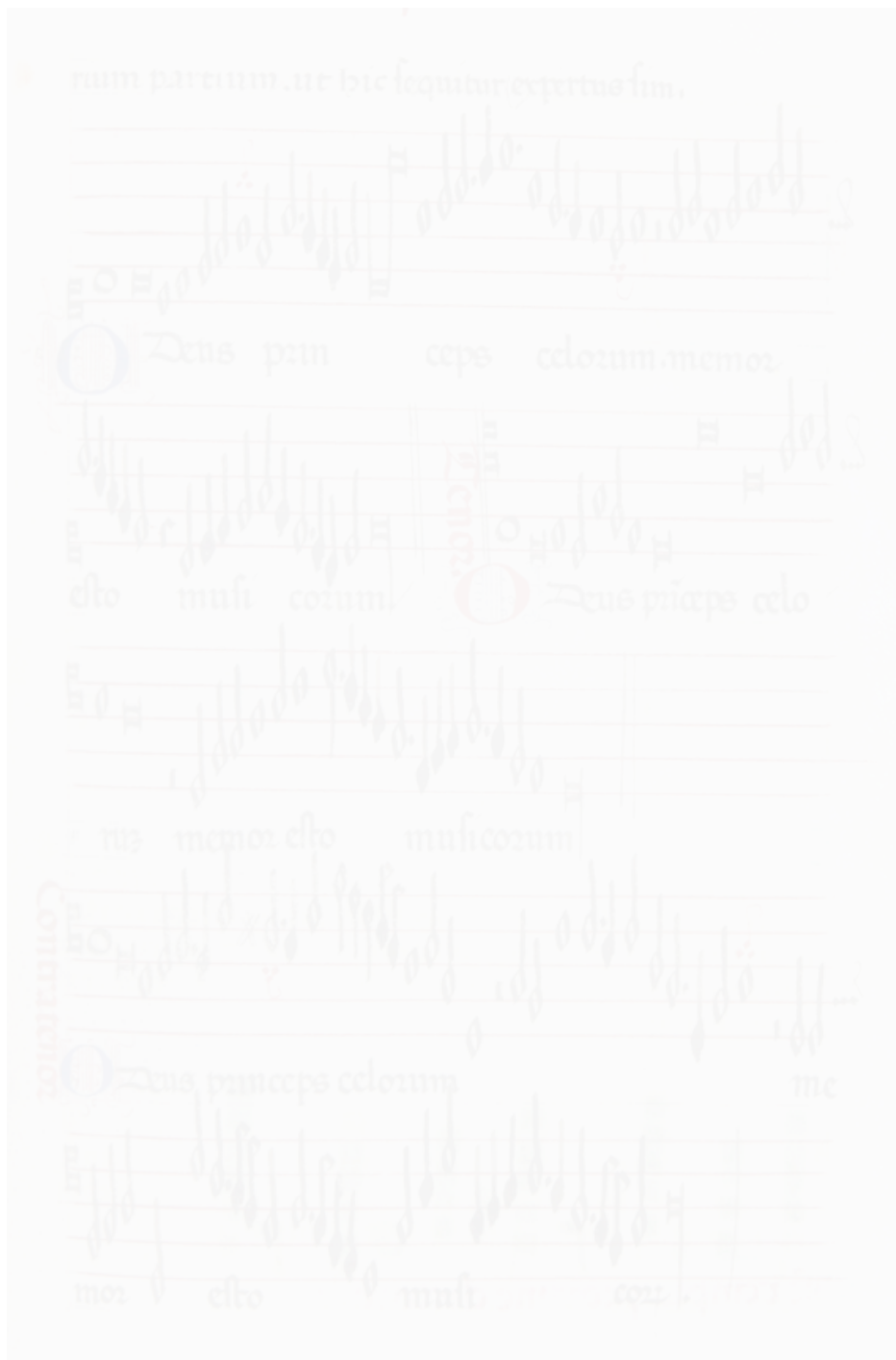


Figure 54 Tinctoris, *De contr.*, II.xxxiv. Example showing the chromatic alteration of perfect concords, highlighted with *signa congruentiae* (E-VAu 835, fol. 139 and transcription).

²⁶ This supports the use of Book I as a reference guide to intervals, allowing a reader to refresh their memory as required.

The image displays a musical score for three voices: Supremum, Contratenor, and Tenor. The lyrics are: "O De - us, prin - - - - - ceps ce - lo - - - - - rum, me - mor - - - - - es - - - - - to mu - si - - - - - co - - - - - rum". The score is divided into three systems, each starting with a measure number (4, 7, 9). The first system shows the Supremum, Contratenor, and Tenor parts. The second system shows Soprano (S.), Contratenor (Ct.), and Tenor (T.) parts. The third system shows Soprano (S.), Contratenor (Ct.), and Tenor (T.) parts. The lyrics are written below the notes. The score includes chromatic alterations of perfect concords, highlighted with 'signa congruentiae' (§). The lyrics are: "O De - us, prin - - - - - ceps ce - lo - - - - - rum, me - mor - - - - - es - - - - - to mu - si - - - - - co - - - - - rum". The score is divided into three systems, each starting with a measure number (4, 7, 9). The first system shows the Supremum, Contratenor, and Tenor parts. The second system shows Soprano (S.), Contratenor (Ct.), and Tenor (T.) parts. The third system shows Soprano (S.), Contratenor (Ct.), and Tenor (T.) parts. The lyrics are written below the notes. The score includes chromatic alterations of perfect concords, highlighted with 'signa congruentiae' (§). The lyrics are: "O De - us, prin - - - - - ceps ce - lo - - - - - rum, me - mor - - - - - es - - - - - to mu - si - - - - - co - - - - - rum".

Figure 54 (cont.). Tinctoris, *De contr.*, II.xxxiv. Example showing the chromatic alteration of perfect concords, highlighted with *signa congruentiae* (E-VAu 835, fol. 139 and transcription).

In addition to specifying the type of intervals to be used in the example, Tinctoris also includes details relating to the most common rhythmic placement of such altered perfect concords. He notes that these are often placed immediately before a cadence in compositions of three (or more) voices, and describes the duration of such dissonances

(in relation to the *mensura*) as extending beyond that which he feels is proper in counterpoint. In summary, Tinctoris's text includes details of the consonance classification, durational information and structural placement. This information is presented in the musical example, forming complex exemplification relationships, in the following ways.

Firstly, the intervallic content prescribed in the theoretical text is presented in two instances. His text specifies that perfect concords can be made 'imperfect' or 'superfluous' (narrower or wider) by chromatic alteration through a sharp, a topic already introduced to the reader in II.xvii, with two-voice musical demonstrations exemplifying the practice.²⁷ The two instances presented in the musical example show both of these types of chromatic pitch alteration, in the same order as the text, continuing an exemplification practice that facilitates a kind of concurrent reading.

The first chromatically altered perfect concord is found between the seventh note of the Contratenor and the sixth note of the Discantus (highlighted with §, see b. 2). These two notes (C-sharp and G) show the chromatic alteration of the interval of a perfect fifth (C-G). The C-sharp is indicated using the sign of the chromatic semitone, highlighting the point of chromatic alteration on a visual level. The *signum proprium* for the chromatic semitone (⊗) is placed immediately before the Contratenor C, appearing in all three sources. To further highlight this moment as a key theoretical point, Tinctoris places *signa congruentiae (punctis acceptionis)* above the relevant notes of the Contratenor and Discantus. Such an approach is not found in earlier theoretical texts, showing Tinctoris's innovations in exemplarity and his desire to raise the visual profile of specific theoretical points.

The tuning implications of the sign of the chromatic semitone have been a topic of much debate that cannot be explored fully in the present discussion.²⁸ However, it is important to note that the application of this sign might have resulted in a markedly different aural effect than a modern C-sharp, perhaps intensifying the dissonant nature of the interval. Such intensification may have further encouraged a sense of cadential

²⁷ These examples are highly similar to those found in discussions of the chromatic semitone in Marchetto's *Lucidarium* (II.viii) and Prosdocimo's *Contrapunctus* (V.vi). Note that the use of a sharp would have resulted in a different size of semitone from that caused by a flat.

²⁸ See Woodley, 'Sharp Practice in the Later Middle Ages'; Jeffrey J. Dean, 'Okeghem's attitude towards modality: three-mode and eight-mode typologies', *Modality in the music of the fourteenth and fifteenth centuries / Modalität in der Musik des 14. und 15. Jahrhunderts*, ed. Ursula Günther, Ludwig Finscher, and Jeffrey Dean, *Musicological studies and documents*: 49 (Neuhausen-Stuttgart: American Institute of Musicology and Hänssler, 1996), pp. 203–246.

resolution in an even more goal-directed fashion than a modern C-sharp, emphasising the more subtle nuances in contemporary tuning systems that we are only beginning to understand.

The second instance of chromatic alteration of perfect concords occurs midway through the example. As before, this instance of chromatic alteration of perfect concords occurs between the Contratenor and Discantus, with this second instance showing the chromatic alteration of an octave, within the context of a suspended figure. Unlike the first instance in this polyphonic miniature, Tinctoris does not place the sign of the chromatic semitone before the chromatically altered note.

Closer examination of the theoretical text reveals that the Discantus should be chromatically altered here, with the G being sharpened to a G♯. This alteration from a perfect to an augmented octave addresses the widening of perfect concords to make them ‘superfluous’ as discussed in his text. Much like the previous instance, Tinctoris marks both voice parts that form this interval with *signa congruentiae*, visually highlighting a key theoretical moment in the example. Without these indications, it would have been more difficult to identify this point of dissonance, and thus the omission of a chromatic semitone symbol at this point in all three main sources is significant.

One possible explanation for this omission might lie in a consideration of the exemplar. Given that mistakes in terms of content were rare in Tinctoris’s exemplar, as evidenced by the level of precision in his texts and the remarkable level of concordance between the surviving sources, it would seem that Tinctoris’s exemplar must have been especially clear for the most part. Therefore, it is plausible to suggest that this symbol was omitted in the exemplar that was adhered to faithfully by the scribe.²⁹ This would seem to go some way towards explaining the reasons for the inclusion of *signa congruentiae* at this point and would match the deployment of similar theoretical points within polyphonic miniatures.

However, there is an alternative, perhaps more compelling, explanation for the omission of a chromatic semitone or sharp symbol if the structural context is considered. Tinctoris’s theoretical text makes it clear that such chromatic alterations tend to be placed immediately before a cadence. The point marked with *signa*

²⁹ There is some evidence that **BU** and **V** were proofread, as erroneously conjoined or misspelt words are occasionally divided with faint vertical lines. This is not applied consistently within the sources.

congruentiae immediately precedes the start of a new phrase, thus rendering this dissonance part of a cadential figure, as was seen with the previous instance. As this is a cadential figure, it is probable that the G✱ in the upper voice could have been implied through a performance practice.³⁰ An experienced singer could have identified such figures from the rhythmic characteristics alone, which would almost certainly have signalled to an experienced singer that some kind of melodic inflection was required in the displaced voice, even if not made explicit using specific notational symbols.³¹

Thus, it seems that this chromatic alteration would have been implied by a performance practice that seems clear at cadence points, though somewhat more contentious elsewhere. The theoretical justification, both in Tinctoris's texts and the writings of other theorists, considered with the placement of the dissonance within a suspension, would seem to support this interpretation. However, it is interesting that Tinctoris's example here, which is typical of his normally meticulous and unambiguous style, leaves a part of the theoretical demonstration to an apparently implied performance practice. Thus, it seems unlikely that such a practice would have been understood fully by amateurs, thus suggesting a degree of expertise from his likely readership.

As Tinctoris's theoretical text specifies, this chromatic alteration occurs in both cases at a cadence point, and thus contributes significantly towards the creation of a cadential moment. The duration of the dissonance (within the limits of whole, half, or major part of the *mensura*) matches that allowed for in the text, lasting for a semibreve within a breve-perfection context under perfect tempus. Combined with the intervallic content, the demonstration of these other aspects of Tinctoris's text forms complex exemplification relationships with the text.

In terms of exemplification, the first and most important point to be demonstrated is the chromatic alteration of perfect concords. By the midpoint of the example, both types of chromatic alteration have been shown: one of a perfect consonance being chromatically altered to make it 'imperfect' [narrow] and another to make it

³⁰ Ramos de Pareja describes this type of semitone as 'subintellectum' [understood], and thus the suspended nature of the dissonance might have triggered a sharpening in this context, even if not notated. See Ramos de Pareja, *Musica Practica*, I.ii, ed. Johannes Wolf, *Musica practica Bartolomei Rami de Pareia Bononiae, impressa opere et industria ac expensis magistri Baltasaris de Hiriberia MCCCCLXXXII: Nach den Originaldrucken des Liceo musicale mit Genehmigung der Commune von Bologna*, Publikationen der Internationalen Musikgesellschaft, Beihefte, Heft 2 (Leipzig: Breitkopf und Härtel, 1901), p. 44.

³¹ See Margaret Bent, 'On False Concords'.

‘superfluous’ [wide]. In these two instances, Tinctoris makes use of two of the three perfect concords (fifth and octave), presenting the theoretical point in two different scenarios.³²

In indicating the intervals generally as ‘perfect consonances’, Tinctoris does not specify the order of the intervals to be demonstrated in the musical example, though the order of ‘imperfect’ and ‘superfluous’ is maintained in the example. Indeed, the placement of this theoretical point within the context of a pedagogical miniature results in the extrapolation model of exemplification being deployed. Tinctoris’s musical miniature situates the chromatic alteration of perfect concords within their ‘natural habitat’, that is, a scenario which a reader might find in contemporary music, offering two instances of the specific point rather than exhausting all possibilities. Such an approach is appropriate for this type of theoretical point, which is indicative of a broader musical practice.

Perhaps as a means to combat the potential difficulties that situating this specific dissonance practice within a broader musical context might cause, Tinctoris raises the visual profile of the key theoretical moments with *signa congruentiae*. In addition to highlighting key moments of the theoretical text, the use of these symbols increases the level of visual mapping of the musical example on to the theoretical text, encouraging the reader to engage with the contents of the example rather than merely glancing over it and proceeding to the next theoretical point.

The addition of these *signa* would certainly have aided the alignment of the polyphonic voice parts in consecutive layout, and thus contributes significantly to the relationship between musical notation and theoretical text.³³ Such alignment might have proved problematic for some readers without an aural ‘realisation’, and thus the addition of specific indicators of theoretical relevance (and musical alignment) would have been useful. In this sense, Tinctoris adopts an exemplification strategy that is, to the best of my knowledge, without precedent.³⁴

³² Tinctoris’s decision to narrow the fifth and widen the octave was probably motivated by a stylistic preference for these types of chromatic alteration. These configurations were more likely in cadential formulae and thus it seems that Tinctoris selected the most likely scenarios that would be encountered in musical performance.

³³ Such a visual alignment process appears to be taking place in the image of Tinctoris from the frontispiece in V (E-VAu 835, fol. 2), shown as Figure 1. Tinctoris’s right hand appears to be following a voice part, with his left hand possibly following another voice on the other side of the opening.

³⁴ Although *signa congruentiae* seemingly held many functions, I have not found any instances where the symbols are used in the same way outside Tinctoris’s texts. Tinctoris adopts a similar approach in

Indeed, an investigation of the various uses of this symbol is necessary to highlight the broad range of functions that such symbols had in fifteenth-century notational terms, and Tinctoris's flexibility with their function in his texts.³⁵ The term *signum congruentiae* itself is a problematic one, with surprisingly little historical justification given the widespread usage of the symbol (and label).³⁶ Discussions of symbols resembling *signa* are found in only three relatively obscure music theory treatises from the fifteenth century, and the definitions offered by these treatises are not unproblematic either.

The best-known definition of the function of a sign resembling the *signum congruentiae* is found in the treatise of Coussemaker's Anonymous XII (henceforth, Anon. XII). In his *Tractatus et compendium cantus figurati*, Anon. XII describes the *signum congruentiae* in the briefest terms possible amongst a list of nine other types of sign.³⁷ He writes:

<p>‘Decimo: aliquod signum dicitur signum congruentiae, scilicet ubi cantus universi congruunt: ☸ in quo signo ponuntur tria puncta triangulariter.’³⁸</p>	<p>Tenth: one sign is called the sign of congruence, that is, where all the voices come together: ☸ in which the sign has three points placed in a triangle shape.</p>
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Anon. XII lists *signa congruentiae* alongside mensuration signs and signatures indicating basic proportional relationships. In short, the *signum congruentiae* is grouped together with the principal notational symbols used in mensural notation that are not noteshapes, thus highlighting its important status in contemporary notation. The text provides a short but clear explanation of what a sign of congruence shows, stating that it is placed ‘where all the voices come together’. Anon. XII's definition does not explicitly define the extra meaning that we attach to such symbols as indicating important points where the voices come together, often of structural significance, and

the demonstration of hexachordal mutation in his *Expositio manus*, by adding solmisation labels. However, these relate more specifically to the relevant mutation points. See Chapter Three.

³⁵ A related discussion about multiple functions for different notational symbols takes place in Rob Wegman, ‘Different Strokes for Different Folks? On Tempo and Diminution in Fifteenth-Century Music’, *Journal of the American Musicological Society*, 53/3 (2000), pp. 461–505 and Margaret Bent, ‘On the Interpretation of ϕ in the Fifteenth Century: A Response to Rob Wegman’, *Journal of the American Musicological Society*, 53/3 (2000), pp. 597–612.

³⁶ Tinctoris's use of this symbol is also discussed, albeit more briefly, in Chapter Four.

³⁷ All references are taken from Anonymous XII, *Tractatus et compendium cantus figurati* (GB-Lbl Add. 34200; D-Rp 98 th. 4^o), ed. Jill M. Palmer, *Corpus scriptorum de musica*, vol. 35 (American Institute of Musicology: Hänssler Verlag, 1990), pp. 41–93.

³⁸ Anon. XII, Ch. 10, p. 64; translation my own with suggestions from Jeffrey Dean. For the full text of the chapter see pp. 63–64.

signalling the medial cadence of a rondeau refrain. Thus, the meaning of the symbol seemingly had some flexibility, though Tinctoris's usage is still highly unusual.

The second source for a definition of this symbol is drawn from a treatise that is closely related to Anon. XII and extends his theoretical point. The anonymous treatise, entitled 'Anonimi tractatus de musica compendium cantus figurati', labels this symbol as the *signum convenientiae* or *signum cadentiae* and provides a symbol that closely resembles that of the *signum congruentiae*.³⁹ It is described as being used 'where one voice falls upon the rest [of the voices] after rests', providing some evidence that *signa* of this type could be used to indicate canonic entries or the re-entry of a voice after a period of rest.⁴⁰

A similar definition of the same symbol is also offered in the version of Tinctoris's *De punctis* that survives in B-Gu 70 (henceforth, **G**). The twentieth chapter of the text labels these symbols as 'puncti acceptionis' [points of take-up]. As the chapter that discusses these symbols in Tinctoris's treatise is only preserved in **G** and not in the three main sources (**Br1**, **BU**, **V**), it seems likely that this chapter is not by Tinctoris and is actually the work of another author. The identity of this other author is unlikely ever to be unearthed unless new evidence comes to light. The peculiarities of **G** contribute to this too, as this source seems to represent a different line of transmission of Tinctoris's texts outside of the three main sources, perhaps showing an alternative tradition of Tinctoris's treatises. For the present discussion, the author of this chapter will be labelled 'pseudo-Tinctoris' in the absence of an accurate identification. The whole chapter is provided below.

Utuntur aliqui etiam *tribus punctis in modum figure triangularis supra notam alicuius partis cantus simul positis*, a quorum summitate virgula reflexa educitur, quibus his quos pause fastidiunt acceptio designatur. Quosquidem punctos acceptionis dicunt. Hinc eos sic diffiniunt: Puncti acceptionis sunt signa supra notam alicuius partis cantus posita, per que acceptio alicuius alterius partis post pausas suas ostenditur, ut in exemplo subsequenti:

Some people likewise use *three dots placed together in the manner of a triangular figure above a note of any part of a piece*, from whose top a turned-back stroke is drawn out, by which the take-up is designated for those whom rests annoy. And indeed they call these dots of take-up. Hence they define them thus: Dots of take-up are signs placed above a note of any part of a piece, by which

³⁹ Jill Palmer, 'A Late Fifteenth-Century Anonymous Mensuration Treatise (*Ssp*) Salzburg, Erzabtei St. Peter, a VI 44, 1490', *Musica disciplina*, 39 (1985), pp. 87–106, esp. 96. She describes this treatise being related to, though not a direct abridgement of, Anonymous XII's work.

⁴⁰ Translation from John Andrew Bailey and Beth Anne Lee-De Amici, 'Bridging the Medial Caesura', *Binchois Studies*, ed. Andrew Kirkman and Dennis Slavin (Oxford: Oxford University Press, 2000), p. 194.

the take-up of any other part after its rests is shown, as in the succeeding example:⁴¹

The text in pseudo-Tinctoris's *De punct.*, unlike that of Anon. XII, clearly describes the shape and form of the *signa* as consisting of three dots placed together as a triangular figure from which a turned-back stroke is drawn out. The description of the shape and (part of) its function aligns with our modern conception of the *signum congruentiae*. Thus it seems that, on a basic level, we can draw rough equivalence between these labels. If the definition is scrutinised carefully, however, it is clear that the two labels indicate subtly different points.

Puncti acceptionis are described as indicating a point of take-up to aid those 'whom rests annoy', indicating their deployment after a long period of rest. This usage of the symbol is attested in practical sources, where it is used to allow a singer to consult another part and follow it until their next point of entry, marked with a *signum*. Undoubtedly, this would have helped a singer in practical performance from choirbook format, particularly one with less experience of reading polyphonic mensural notation. In keeping with the rest of the treatise, despite the questionable authorship of this section, this chapter includes an example intended to show the use of these symbols, using a miniature two-voice polyphonic composition as a vehicle for this demonstration (Figure 55).

The two *signa* are placed on a unison G (above middle C) in both voice parts, representing a traditional point of congruence. Though satisfying our modern conception of its meaning, the example does not demonstrate pseudo-Tinctoris's definition in *De punct.*, which the text goes to great lengths to outline. In order to demonstrate Tinctoris's definition of this dot, the example would need to contain a symbol placed after a period of rest, presumably one long enough to justify its inclusion and to indicate properly the 'point of take-up'. Given that there are no rests in this example, it is not possible for this part of the definition to be demonstrated, and thus the example does not capture the meaning of the text. Instead, the example demonstrates the traditional sense of a *signum congruentiae* as laid out by Anon. XII, albeit with a more detailed textual description of its shape and form, resulting in a 'mismatch'

⁴¹ (pseudo)-Tinctoris, *De punct.*, xx, ed. and trans. Jeffrey J. Dean and Ronald Woodley, *Early Music Theory Online* <http://earlymusictheory.org/Tinctoris/texts/depunctis/#pane0=Edited> (accessed 19 August 2014); emphasis my own.

between text and example. This powerfully reinforces the attribution of this chapter to an author other than Tinctoris himself.



Discantus

Tenor

7

D.

T.

13

D.

T.

Detailed description: This figure shows three systems of musical notation. Each system consists of two staves: the upper staff is labeled 'Discantus' (D.) and the lower staff is labeled 'Tenor' (T.). The notation is in mensural style with square notes on a four-line staff. The first system starts at measure 7. The second system starts at measure 13. The third system starts at measure 19. The notation includes various note values, rests, and ligatures.

Figure 55. Pseudo-Tinctoris, *De punctis*, Ch. xx. An example to demonstrate the application of *puncti acceptionis*. The example (bottom of left column and entirety of right column) actually demonstrates *signa congruentiae* in a more traditional sense, and does not fully meet the requirements of the text (B-Gu 70, fol. 177).

Despite the problematic contemporary definitions of the *signum congruentiae*, it is not too tenuous to take this symbol generally as indicating a point of congruence or coincidence. Given that all of the definitions outlined above still conform, in a sense, to the broad indication of a point of ‘coincidence’, the term will be retained for ease for the rest of this discussion.

Returning to the case of false consonances caused by sharpening in *De contr.* (Figure 54), Tinctoris uses *signa congruentiae* almost exclusively to highlight specific points of dissonance or particular intervals in Books II and III, as transmitted in **V** and **BU**.⁴² The use of such symbols, although not prescriptive in terms of the points they highlight if taken alone, raises the visual profile of key moments, and changes the text–example relationship.⁴³ Given that there are two very clear points in the theoretical text, the placement of two sets of *signa* would signal a relationship before any details were considered.

Rather interestingly, Tinctoris does not include any *signa* in the Tenor in this example (Figure 54). This is due to the dissonance being indicated in the Discantus and Contratenor. The lack of *signa* in the Tenor would have required the reader to align this voice with the other two parts to understand fully the complete polyphonic context, though this would not have been too challenging for experienced readers. A reader could have aligned the Tenor with the two voices marked with *signa*, using this cadential figure as a reference point. This suggests an assumed degree of familiarity with cadences from his readership. Indeed, experienced musicians, and perhaps enthusiastic listeners, could identify cadence figures from the notation alone, with the *signa* serving to provide further clarification.

However this example were to be interpreted by the reader (perhaps performed or aurally imagined), it is clear that Tinctoris was keen to raise the visual profile of a key part of the notation to aid the visual comprehension of his main theoretical point in a polyphonic context, something that his contemporaries did not do in this fashion. This is not an isolated instance and is used in conjunction with other types of exemplification, explored more fully in the following section.

⁴² There is one notable exception to this use of *signa congruentiae*, where it highlights use of repeated notes or patterns (‘redicte’). This example is discussed later in this chapter. **Br1** uses *signa* to indicate specific intervals in the earlier stages of the treatise, but does not always include those showing this kind of dissonance later in the treatise. These *signa* always indicate a specific point relating to the text, thus prioritising the theoretical point over the normal function of such symbols.

⁴³ The *signa congruentiae*, and their relevance to the text, help to ‘activate’ the example in the theoretical whole.

Exemplification of stylistic musical practices through polyphonic miniatures

Unlike the treatise on counterpoint, where such discussions are confined to the latter stages of Book II and the entirety of Book III, Tinctoris makes reference to matters of musical style and contemporary practice throughout *Prop. mus.*, including short examples of his own composition to demonstrate some problematic practice that introduces unnecessary ambiguity. Examples of this type use the same broad exemplification model, albeit varied subtly on a case-by-case basis, showing a careful consideration of the method of exemplification used for particular types of exemplary content.

One of the first examples to provide a demonstration of a contemporary practice that Tinctoris disagrees with is found as the second example in *Prop. mus.*, I.vi. This example (Figure 56) discusses the different ways that *sesquialtera* can be indicated in musical notation, either through a fractional relationship or through coloration, though he does note the possible ambiguity in using coloration for this proportion. After providing an example that demonstrates the use of fractions to indicate this proportional relationship, Tinctoris includes one where coloration is used.⁴⁴ He writes:

Signatur autem interdum hec proportio sine cyphris, scilicet per impletionem notarum non solum minimarum sed ceterarum ex aliquo colore, tamen frequentius nigro videlicet encausto, ut hic patet:

[EXEMPLUM]

Sed cum hec notarum impletio non tantum, ut predictum est, duplam et sesquialteram, sed etiam, ut patet per innumera compositorum opera, imperfectionem aut reductionem designet...

Sometimes, however, this proportion is indicated without the use of a numerical signature, that is, by filling in the note-heads not only of the minims, but also of the other notes, with some colour—more frequently black, that is with ink—thus:

[EXAMPLE]

This filling-in of the notes, however, as described above, does not only indicate dupla and sesquialtera, but also (as is evident from countless works of ... composers) may show imperfection or displaced grouping ['reduction'].⁴⁵

⁴⁴ Tinctoris goes on to describe how a reader might identify which of the possible implications of the coloured notes is at work based upon context. Although somewhat ambiguous, Tinctoris permits this practice, and discusses it more extensively in *Prop. mus.*, III.ii.

⁴⁵ Tinctoris, *Prop. mus.*, I.vi.5–6, ed. D'Agostino, p. 40, and trans. Woodley, pp. 325–326.



Figure 56. Tinctoris, *Prop. mus.*, I.vi.5–6. Example showing *sesquialtera* indicated through filled-in notes (E-VAu 835, fol. 148v).

The musical example that accompanies this theoretical point includes an extended passage in the Discantus that is filled-in or coloured as a means of indicating *sesquialtera*. As with the examples discussed earlier in the present chapter, Tinctoris presents both voices in equal numbers at the beginning of the example, and then applies the proportional change to the Discantus. Such an approach allows for the *mensura* of the example to be established using both voices before the proportion takes effect. This helps to emphasise the effect that the proportional relationship has upon the rhythm of the proportionally affected part, and allows the Tenor to be used as a kind of ‘reference’ voice against which the Discantus can be measured using the basic rules of consonance. Although this approach appears to be very similar to those discussed earlier in this chapter, the type of exemplification can be judged to be distinct from these in some important respects.

The first of these relates to the content of the theoretical text that precedes and follows the musical example. Tinctoris’s text describes the point being demonstrated with a greater degree of specificity than many of the points discussed in this section of this chapter. His text specifies that the filling-in of notes applies to other note values, not just minims, and that these notes are often filled in with black ink.

An examination of the Discantus reveals that Tinctoris only uses minims in duple proportion (semiminims),⁴⁶ minims and semibreves in this context, preferring to group the *sesquialtera* proportion more or less within the context of the original semibreve groupings. The only two exceptions to the grouping into semibreve ‘beats’ are the opening two-note semibreve ligature, which, along with the single semibreve that immediately follows it, forms a two ‘beat’ rhythmic figure, and the two-semibreve ligature towards the end of the example. In this latter case, the cross-syncope is highly unusual for such a brief example, demonstrating the rhythmic nuances possible in mensural notation.

The placement of three semibreves at the beginning of the section immediately following the proportional change in the Discantus is significant. Tinctoris’s description of *sesquialtera* states that it is a proportion expressed in the ratio 3:2 (in its smallest form). In placing three semibreves at the beginning of the proportional change, Tinctoris demonstrates this relationship clearly by presenting the theoretical point in its simplest notational form within a musical context. The placement of three semibreves (in coloration) against two under the original mensuration offers a kind of ‘musical’ realisation of the proportion, musically articulating the mathematical relationship in its simplest form.

The second distinct point of difference with the example discussed in Figure 53 and Figure 56 is the nature of the point. His reference to such a practice as being ‘evident from countless works of composers’ [ut patet per innumera compositorum opera], clearly shows that this practice of *sesquialtera* indication is evidenced by a large number of musical works.

In referring to a contemporary practice, albeit in a general sense, Tinctoris adopts a slightly different form of exemplification. For this example, a mix of mapped and referential content is at work. The practice described in the text [i.e. filling-in of void notes to indicate *sesquialtera*] dominates the Discantus. The use of semibreves and minims also addresses the part of Tinctoris’s text that states that such a practice can be used with note values greater than that of the minim. The referential part of the example

⁴⁶ Tinctoris states that the term ‘semiminim’ is invalid as it is not possible to halve the smallest note value, seemingly a highly pedantic terminological disagreement with popular trends. See the discussion of *proportio dupla* (duple proportion) in *Prop. mus.*, I.v.4–10. Karen Cook’s recent dissertation extensively examines the changing role of the semiminim throughout the fourteenth century: see Karen Cook, *Theoretical Treatments of the Semiminim in a Changing Notational World c. 1315–c. 1440*, PhD diss. (Duke University, 2012).

extends the discussion into contemporary composition, helping to situate Tinctoris's theoretical points within the broader musical context, explicating their theoretical relevance. Therefore, the text–example relationship is more complex than a simple 1:1 mapping relationship: the two aspects function together in an active sense to create a didactically useful theoretical whole with contemporary relevance.

The majority of examples that fall within this subcategory from *Prop. mus.* are found in the later stages of the treatise, after Tinctoris has introduced the foundational proportional relationships. However, as mentioned earlier in the chapter, a pedagogical trajectory of increasing complexity cannot be applied strictly to the whole of the treatise. Although true in a general sense for Books I and II, such a convenient trend somewhat misrepresents the structural picture.

Earlier in this chapter, mensuration was highlighted as a topic that Tinctoris does not discuss as extensively as one would expect in *Prop. mus.*, particularly as pedagogical logic would suggest that such an area was fundamental to understanding musical proportions conceived rhythmically. In relation to this apparent omission, it is yet more surprising that Tinctoris does not state explicitly whether the proportional relationships used in his examples act cumulatively or in relation to the basic mensuration. Consultation of the notation reveals that the proportional relationship in this example, and all others in this treatise, are to be considered cumulatively.⁴⁷ In *Prop. mus.* Tinctoris avoids sequential proportions, using additional proportions in his miniatures to cancel a proportional change and return to the original mensuration. The case is slightly different for *De contr.* where sequential proportions are much more common. The lack of this foundational material further questions the pedagogical structure of *Prop. mus.*, though many cases would have been self-evident. Consultation of Book III reveals that other topics are also found in places that one would not normally expect in such a (seemingly) tightly controlled pedagogical structure.

III.ii of *Prop. mus.*, 'Qualiter proportiones signande sint' [In what manner proportions should be indicated], contains the first explicit discussion of Tinctoris's preference for the indication of proportional relationships with fractional signatures, despite numerous examples that precede it to imply that Tinctoris prefers this method of indication. One would have expected such a discussion, given its centrality to

⁴⁷ Although Tinctoris considered semiminims as minims in duple proportion, this proportional relationship was probably conceptualised differently to the main proportion shown in the example.

Tinctoris's practice, to have been placed somewhere in the opening chapters of Book I, rather than much later in the treatise.⁴⁸ Although such information can clearly be implied from his musical examples and theoretical points, Tinctoris does not explicate all foundational aspects at the early stages of his pedagogical structure, questioning the degree to which it was carefully planned out before work on the treatise started. Its pedagogical logic does not seem to be as sound as that of *De contr.*, perhaps showing an evolution in Tinctoris's pedagogical approach over the course of his Neapolitan career.⁴⁹

The second example from III.ii is a particularly interesting one from the perspective of exemplarity. The example in question (Figure 57) shows an approach towards proportional indication that Tinctoris says was used by 'composers in the past'. Tinctoris writes:

Item nonnulli veteres et istas et alias proportiones non cyphris, immo nominibus propriis signare voluerunt, ut hic:

[EXEMPLUM]

Quod mihi non placet si iuxta commune proverbium 'Quod brevius fit, melius fit'. Et quid ineptius est ordine longo litterarum aut syllabarum designare, quod duabus cyphrunculis poterit agnosci?

Likewise, some composers in the past, when wishing to indicate these and other proportions, have marked them not with figures, but with their appropriate full names, as follows:

[EXAMPLE]

This I do not like, since, as the widespread saying puts it, 'the shorter the better'; and what could be more absurd than to indicate with a long string of letters or syllables what could be recognised from just two small figures?⁵⁰

As with the previous example discussed in this part of the chapter, Tinctoris's theoretical point refers to a specific topic and comments upon notational practices, albeit of the past in this case. To the best of my knowledge, there are no extant practical sources which make regular use of this practice, and thus it is unclear to which period Tinctoris refers here, though it seems unlikely that he would have discussed this practice if there were no historical precedents.⁵¹ It is worth noting here, however, that written

⁴⁸ This point is noted, though interpreted slightly differently, in Busse Berger, 'The Origin and Early History of Proportion Signs', p. 416.

⁴⁹ Similar pedagogical ordering queries are present in *De imperf.*, as discussed in Chapter Three.

⁵⁰ Tinctoris, *Prop. mus.*, III.ii.10–12, ed. D'Agostino (2008), pp. 74–76, and trans. Woodley (1982), p. 356–357, with slight revision.

⁵¹ On proportional relationships in earlier repertory see Jason Stoessel, *The Captive Scribe: The Context and Culture of Scribal and Notational Process in the Music of the ars subtilior*, PhD diss. (University of New England, 2002), especially pp. 284–316. Proportions are presented in both figures and words in

out descriptions do accompany fractional signatures in the theoretical manuscript I-Pec 1013 (**Pg**), which includes a number of Tinctoris's pedagogical miniatures extracted from his treatises, though these are clearly intended for didactic purposes and are atypical of more practical music manuscripts.⁵²



Figure 57. Tinctoris, *Prop. mus.*, III.ii.10–12. Two-voice example showing the full names of proportions rather than signatures (E-VAu 835, fol. 158).

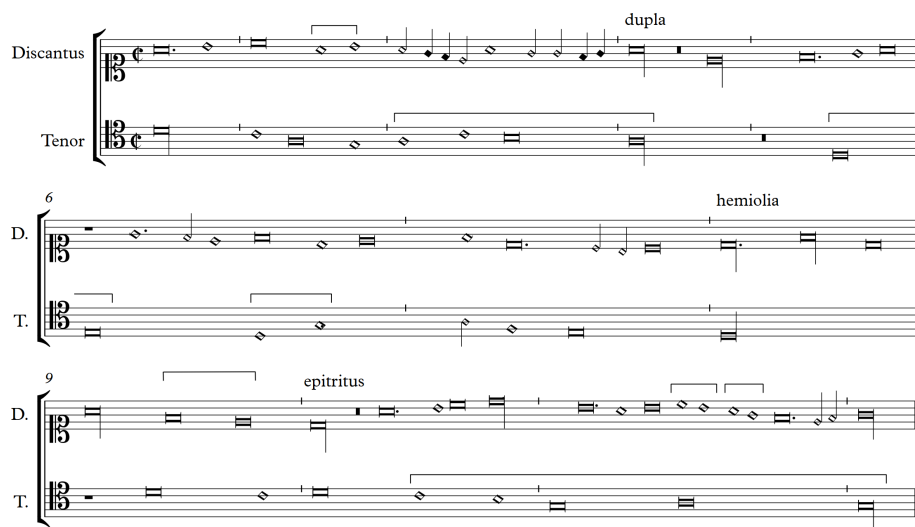


Figure 58. Transcription of Figure 57.

John Baldwin's commonplace book, though the words are always placed beneath the staff: see Roger Bray, 'British Library, R.M. 24 d 2 (John Baldwin's Commonplace Book): An Index and Commentary', *Royal Musical Association Research Chronicle*, 12 (1974), pp. 137–151.

⁵² For a description of the source, its contents, and Tinctoris's pedagogical compositions, see Blackburn, 'A Lost Guide'. A similarly intriguing adjustment to Tinctoris's musical examples to aid pedagogical understanding is found on fol. 9 of I-F1 Plut. 29.48. The version of *Prop. mus.* in this compendium provides a re-notation of one of Tinctoris's examples that removes the proportional signatures, thus 'solving' the notation and presenting it in 'equal numbers' throughout.

The example itself is constructed in a similar fashion to those that make use of fractional signatures to indicate a proportional change in the Discantus. Tinctoris begins with both voice parts in the same mensuration, indicated with a cut-C signature (ϕ), and then introduces the proportions in the following order: *dupla* [2:1], *hemiolia* [3:2], *epitritus* [4:3]. These proportional relationships have been discussed in other guises throughout the treatise, hence Tinctoris does not provide an extensive explanation of each.

The proportional relationship only applies to the Discantus, and follows a logical ordering that matches that described in the theoretical text a little earlier in the chapter. In this sense, the example is integrated at a local level into the theoretical text. In the text that immediately follows the example, Tinctoris makes a further comment upon the obsolescence of the practice.

The phrase ‘Quod brevius fit, melius fit’ [the shorter the better] is characteristic of Tinctoris’s approach towards music theory and notational signification, where unambiguous brief forms are preferred. The justification for his criticism of this practice is further confirmed when he advocates the use of figures rather than words, describing the older process as ‘absurd’. Ordinarily, Tinctoris would deploy a citation of an existing work to show this practice, but instead includes one that is apparently of his own composition. Thus, one has to question the availability to Tinctoris in Naples of compositions that adopted this older practice.

If the construction of the example is considered in more detail, the text–example relationship becomes clear. Each of the three proportional changes is placed at a structurally significant moment, preceded by some kind of cadential motion in one of the voice parts. Immediately before the first change to ‘dupla’, the Discantus has a notated G, F, G, A figure, triggering a cadence on A. Such a melodic movement would mark a structural shift, both visually and aurally (imagined or performed), and offer a reference point from which the proportion could be judged. This type of approach is applied later in the example to the proportional change from *dupla* to *hemiolia* and to the shift to *epitritus*, both of which cadence on D.⁵³

In adopting such an approach, Tinctoris uses a similar exemplification model to the many transcriptions of *cantare super librum* practice in Book II of *De contr.* The proportional changes are placed at structurally significant points, in this case, the end of melodic phrases. Through this, the proportional structure of the piece becomes

⁵³ The cadential leading notes in each case would be expected to be sharpened.

immediately apparent, both visually and aurally. The kind of cadential formulae set out above would have been easily recognisable to an experienced reader, and instantly recognisable on first hearing to a singer performing the notation. The impact of these is further emphasised by the general avoidance of unisons or octaves between the two voice parts other than at these key moments.⁵⁴

The construction of this example offers different possibilities for visual and aural realisation. The use of cadences signals the start of a new section, and thus would have prepared a singer or listener for a proportional change, as was common in contemporary compositions. In exemplification terms, it is clear that the text ordering is matched, though it should be noted that Tinctoris has not mentioned the names *hemiolia* and *epitritus* since I.vi, when he first expounded the 3:2 and 4:3 proportions, and thus there is perhaps a degree of presumed knowledge in this example. The example presents these proportions in a way that allows a reader to clearly assess the effect that they have on the note values on the page, and shows how to resolve the mensural notation correctly.

Despite the effectiveness of the demonstration of the theoretical point in the text, the musical example itself, and its compositional structure and texture, deserves a more detailed examination. This two-voice miniature has always been presumed to be composed specifically for the treatise. Across Tinctoris's theoretical oeuvre, citations from existing works are normally labelled explicitly in the text, with the title or composer often being mentioned, and occasionally more specific references to the placement of the extract within the parent work. In this case, however, the construction of the Tenor raises questions about whether this example was originally conceived as a two-voice miniature, or whether it was extracted from a composition in three or more voices.

The contentious point of the Tenor occurs at the rest after the four-note ligature towards the start of the example. To have such a lengthy rest is quite out of character with Tinctoris's other pedagogical miniatures in *Prop. mus.* In these examples, the Tenor normally functions as a referential voice part against which proportional change can be measured, and even short rests are few and far between. In this case, having a

⁵⁴ This is precisely why Tinctoris describes cadential resolution using the term '*perfectio*'. Tinctoris includes (and illustrates) cadences to the fifth as well as octave (and their compounds) in his notion of *perfectio*. Seay misconstrues this as a unit of measure: see *Albert Seay, The Art of Counterpoint* (n.pl.: American Institute of Musicology, 1961), pp. 113–118.

rest that occupies a full *mensura* in the context of this piece might have reduced the usefulness of this voice for this function, and is perhaps suggestive of a ‘missing’ part.

Following this line of enquiry, it seems entirely possible that this example had at least a third voice, if not a fourth. A richer texture could have avoided the rather awkward silence in the Tenor at the start of what appears to be a new section of the miniature. In addition to this specific point, the general rhythmic profile of the Tenor does not follow that of Tinctoris’s other two-voice pedagogical miniatures, perhaps suggesting that this example was not conceived in quite the same framework as the others.

Despite the potential issues with this two-voice example, it is clear that Tinctoris aimed to set this point in a broader historical context, drawing upon an older tradition to emphasise his preference for the economy and clarity of fractional signatures to indicate proportional change. In some other cases in *Prop. mus.*, Tinctoris lists the names of composers whose works demonstrate such a practice, but for this instance he does not.⁵⁵ Tinctoris either felt that his readers did not need to know the details of composers who used this practice, or that they would have been sufficiently aware of such a practice to refer to it if required.⁵⁶ Perhaps Tinctoris even had difficulty finding an instance from his collections in Naples that exemplified this point.

Discussions of more practice-based points were not confined to *Prop. mus.* Tinctoris’s counterpoint treatise is well known for its discussion of highly technical aspects of counterpoint practice, particularly those relating to the correct treatment of dissonance.⁵⁷ It also includes detailed information on compositional practice in counterpoint, including the application of concepts taken from Ciceronian grammar and rhetoric, most notably *varietas* and *redicte*.⁵⁸ In discussing the rhetorical concepts in a musical setting, Tinctoris may have been appealing directly to the likely interests of more ‘humanistic’ readers, perhaps even intellectualising the justifications of his argument in different terms.

⁵⁵ See, for example, *Prop. mus.*, III.iii.7, where works by Okeghem, Busnois, Du Fay and others are referenced without a notated example. These referential citations are discussed in Chapter Four.

⁵⁶ The lack of specific references may also link to his passing remarks on older music in the prologue.

⁵⁷ Tinctoris’s treatise is one of the first to provide a systematic discussion of both consonance and dissonance in counterpoint.

⁵⁸ Alexis Luko has examined the application of *varietas* to fifteenth-century compositional (and theoretical) models: see Alexis Luko, ‘Tinctoris on *varietas*’, *Early Music History*, 27 (2008), pp. 99–136.

The musical applications of *redicte* are discussed in III.vi, where Tinctoris includes an example of extempore-style counterpoint and an interesting polyphonic miniature that, by implication, recognises the need to maintain variety other than for the purposes of creating specific sonic effects. The inclusion of examples specifically to show elements of contrapuntal style marks a significant innovation from the more contrived and limited newly composed examples of earlier theoretical texts. After introducing the requirement to avoid motivic repetition using a two-part note-against-note example of extemporised counterpoint as a demonstration, Tinctoris writes:

Et quamvis ex omni parte in re facta regulariter etiam prohibeantur, aliquando tamen sonum campanarum aut tubarum imitando ubique tollerantur, ut hic patet:

[EXEMPLUM]

Utque patet in his exemplis, redicta nihil aliud est quam unius aut plurium coniunctionum continua repetitio.

And, although these are also prohibited by rule from every part in composed music, sometimes, however, in imitating the sound of bells and trumpets, they are tolerated everywhere, as is clear here:

[EXAMPLE]

As is seen in these examples, repetition is nothing other than the continuous reiteration of one or more melodic intervals (*coniunctiones*).⁵⁹

In the musical example that accompanies this point (see Figure 59), which is approximately the same length as that showing chromatically altered perfect concords (Figure 54), Tinctoris includes four instances of repeated figures, with the most striking occurring across all three voices towards the end of the example. Tinctoris's text outlines the permissible scenarios for repeating patterns within a contrapuntal context, stating that they are permissible everywhere when imitating the sound of bells and trumpets. Although Tinctoris's text specifies the type of material that he deems permissible to repeat in a polyphonic context, he does not provide any further details regarding the musical shape or rhythm of such figures other than their sonic effects. Thus, the example shown in Figure 59 plays an active role in explicating the precise information as to the shape and style suitable for repetition in such a context.

⁵⁹ Tinctoris, *De contr.*, III.vi, ed. D'Agostino, pp. 374–376 and trans. Seay, p. 137 with small modification. If 'redicta' is taken to translate as 'reduplication', then it is possible to link it to the notion of 'conduplicatio', as discussed in the *Rhetorica ad Herennium*. I am grateful to Jeffrey Dean for drawing my attention to this.

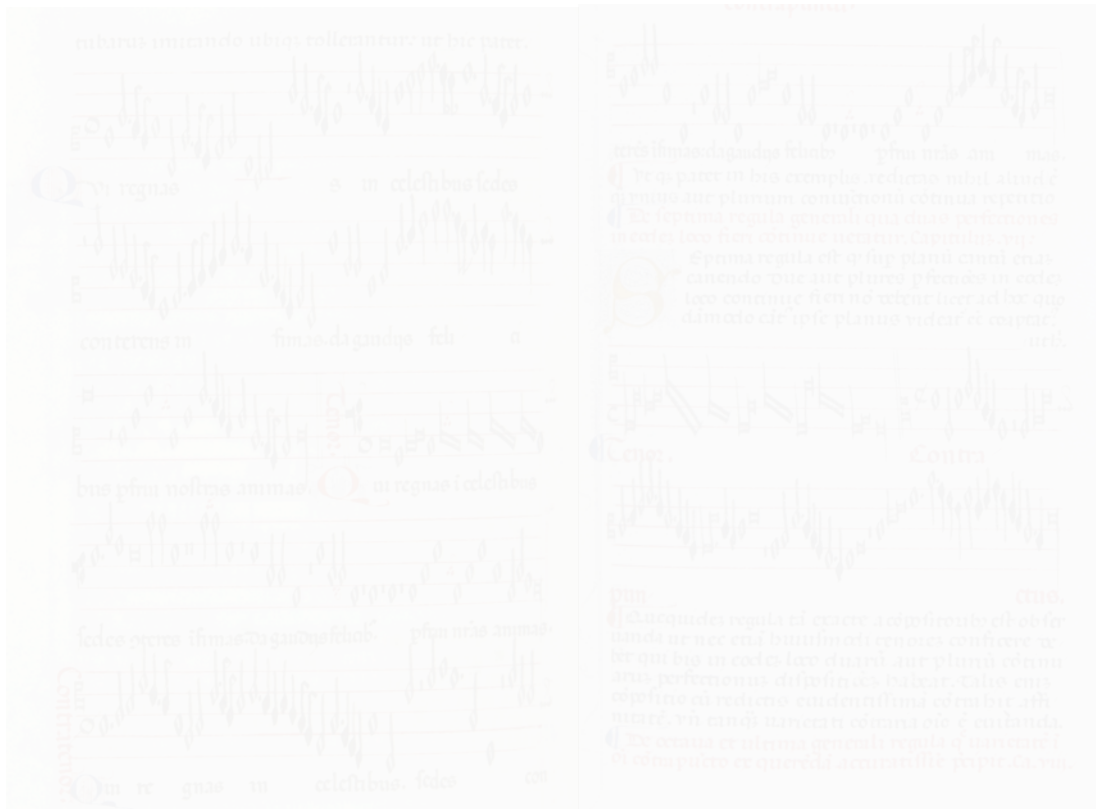


Figure 59. Tinctoris, *De contr.*, III.vi. Example showing the use of repeated figures to sound as ‘bells and trumpets’ (E-VAu 835, fols. 142v-143).

The example itself is a three-voice polyphonic miniature (transcription in Figure 60), composed using much the same structure as previous examples of this type.⁶⁰ The four instances of motivic restatement in this example are spread fairly evenly across the example, with each instance indicated with *signa congruentiae* in the relevant voice parts. Three of these four instances are found in the Tenor, with the repeated figure appearing in this voice part only. The final instance is spread across all three voices, and is indicated with *signa* at the relevant point in each voice.

The first instance of motivic restatement is found on the sixth note of the Tenor on a two-semibreve ligature figure which is restated exactly twice more, and a further two times in a slightly altered form. This instance, which is initially stated on the fourth Tenor note, would seem to be addressing the sonic effect of ‘bells’ described in the main text, given the alternation between two notes. As is common in Tinctoris’s treatises, this matches the order in which the sonic effects are listed in the theoretical

⁶⁰ This structure normally consists of three or four musical phrases, each of which is articulated with clear cadences. See, for example, Figure 54.

text, perhaps offering some evidence to suggest the simultaneous conception of the musical example and text to form a kind of pedagogical unit.

The second and third instances occur later in the Tenor and are both characterised by two minims on the same note followed by a semibreve a fourth lower. The third instance appears as a falling triad motif, with the middle note repeated, thus closely resembling the rhythmic characteristics of the second instance.⁶¹ This figure is also present in the Contratenor, adding a layer of imitative counterpoint to the example. The *signum congruentiae* that highlights this motivic restatement is placed above the second statement of the figure, a practice that Tinctoris applies in all cases in this example. As before, Tinctoris deploys a single *signum* to indicate a motivic restatement in this instance, and thus requires the reader to engage more closely with the notation to identify the number of repeats and how these repeated figures interact with the rest of the polyphonic texture. The identification of these restatements would have been much easier after the initial figure had been highlighted with asterisk-like markings, but may still have posed a problem for some readers.

Both of these instances follow much the same model of exemplification, whereby a short repeated melodic motif is included in a single voice part, relating to one of the types of sonic effect outlined in the text. The content of the text for these two figures has, in effect, been ‘extrapolated’ into a larger musical context. Tinctoris’s lack of specificity in describing exactly what constitutes (for him) the sound of ‘bells’ and ‘trumpets’ might be interpreted as leaving these categories open to interpretation. However, alternating figures on two notes had long been assigned to bells, as had falling-fourth and triadic motifs with trumpets. In any case, the restated figure is easily identifiable and does not require any consideration of the polyphonic whole to see the point in notational form, though its function within the whole is almost certainly what Tinctoris hoped to put across. Indeed, the effect that such repeated figures have on the overall polyphonic whole is a more important issue for the final instance in the example.

⁶¹ Although using slightly different pitches, the rhythmic characteristics are retained. This addresses the ‘one or more’ melodic intervals of a restated figure described in the text.

Supremum
Qui re - gnas in

Contrateno - r
Qui re - gnas in ce - les - ti -

Tenor
Qui re - gnas in ce - les - ti -

5
S.
ce - les - ti - bus se - des con - te - rens in - fi -

C.
- bus se - des con - te - rens in - fi -

T.
bus, se - des con - te - rens

9
S.
- - - mas, da gau - di - is fe - li - ci -

C.
mas da gau - di - is fe - li - ci - bus

T.
in - fi - mas, da gau - di - is fe - li - ci - bus

13
S.
- bus per - fru - i nos - tras a - ni - mas

C.
per - fru - i nos - tras a - ni - mas

T.
per - fru - i nos - tras a - ni - mas

Figure 60. Transcription of 'Qui regnas' as shown in Figure 59.

The final instance includes a repeated figure that is stated in all three voices in close rhythmic proximity, with the iterations overlapping to create a different sonic effect, creating a ‘hocket’ effect at points, adding a layer of imitative counterpoint to this example. This figure is characterised by an ascending triadic figure that contains the notes C, E, and G.⁶² Tinctoris places *signa congruentiae* above the first repeat of this figure in each voice part, marking this instance of repetition out from the others in this example, which are confined to the Tenor.

The sonic effect of these three overlapping repeated phrases imitates the sound of trumpets, linking the final instance to Tinctoris’s theoretical text.⁶³ The beginning of this figure is marked by a repeated ‘C’ in two of the three voice parts, temporarily bringing the otherwise moderately florid counterpoint to a relatively static point, clearing the texture to emphasise the mimetic effect of this figure.⁶⁴

It is clear that this figure demonstrates a key part of Tinctoris’s point and is approached in such a fashion as to make it stand out aurally from the rest of the miniature.⁶⁵ In effect, the content of the text has been extrapolated into a more realistic notational scenario, presenting passages that mimic bells and trumpets within a context that a reader might encounter in practical performance. Although the musical content seems to follow the extrapolation exemplification model, the use of *signa congruentiae* subtly changes this model, forging different links with the main text.

Tinctoris’s use of the symbol in all three voice parts is noteworthy. If the apparent primary function of the *signum congruentiae* is taken to be at work at these moments, a reader might have been forgiven for vertically aligning all three voices here, particularly given that this would have been a striking point of consonance. Therefore, it seems that the function of these *signa* is different from their usage in contemporary practical sources, as discussed earlier in this chapter. It is also worth noting that Tinctoris does not deploy *signa* on instances of a motif stated only once in a given part, or a motif repeated with other notes in between, even if these are in imitation with another part. Thus, it can be understood that Tinctoris objects to the immediate

⁶² Tinctoris’s contemporaries would not have conceived this as a C-major triad. The triadic figure, however, was common for trumpets given the constraints of the overtone series that constrained their pitches.

⁶³ This is a seemingly rare instance where the example content does not follow the order of the text strictly. However, for this type of point, this does not significantly affect the text–example relationship.

⁶⁴ One could argue that this is a rather ‘clumsy’ compositional moment on Tinctoris’s part, though this does not diminish its pedagogical usefulness.

⁶⁵ The repeated Cs, in analytical terms, create the sense of a brief moment of rest across the voice parts. In performance, this repetition achieves something approaching a ‘hocket’ effect.

repetition of motifs when not justified by imitative sonic effects, and clearly demonstrates he does not object to imitation or discontinuous repetition of motifs.

In raising the visual profile of this point of the example, Tinctoris emphasises its structural significance to his theoretical point. However, a reader familiar with the conventions associated with this symbol might have misinterpreted Tinctoris's intention here at first glance, instead aligning the three voice parts as sounding simultaneously in vertical alignment. Careful reading of the polyphonic context, and Tinctoris's theoretical text, would have ensured that this didn't happen, but nevertheless, the use of *signa* may have introduced some ambiguity in resolving the notation.

Given that these *signa* only survive in **V** and **BU**, it may be possible to interpret the use of such symbols as indicators of a particular type of reader, or at least an intended mode of reading associated with the notation for these sources. The scale of the polyphonic miniature, particularly as it is notated successively, would probably have made the silent comprehension of such notation difficult, if not impossible, for less experienced readers. Based upon modern standards, it is difficult to see how a reader could have conceived three polyphonic voice parts without some kind of aural realisation, though it is likely that a reading practice that we do not fully understand would have aided visual alignment.⁶⁶ This question will be examined further in the final section of this chapter.

The absence of *signa congruentiae* in **Br1** may also reveal something about the scribe responsible for the copying of that source. Given that *signa congruentiae* held many different meanings in practical music sources, it seems entirely plausible that the **Br1** scribe chose to omit these symbols, on the basis that the repetitions were obvious in the notation. Indeed, this suggests beyond reasonable doubt that the **Br1** scribe had a degree of musical grounding, strongly suggesting that he was a musician first and scribe second. In contrast, the symbols are retained by Crispus in **V** and **BU** who was primarily a scribe, presumably being faithful to his exemplar.

⁶⁶ There are isolated instances documented throughout music history where performance from separate polyphonic parts on a keyboard instrument has taken place: see Jessie Ann Owens, *Composers at Work: The Craft of Musical Composition 1450–1600* (Oxford: Oxford University Press, 1997), pp. 34–63.

Polyphonic miniatures demonstrating *alternative* musical practices

Although Tinctoris's newly-composed polyphonic miniatures are usually deployed to demonstrate more general compositional practices using the extrapolation exemplification model, there are a number of cases where particular aspects of one or more of the voice parts in the polyphonic example are described in the main text in some detail. Examples of such a practice are found in *De contr.* and *Prop. mus.*, normally in discussions of 'alternative' musical practices, most commonly *cantare super librum* practice.

In Book II of *De contr.*, Tinctoris begins by discussing discords before moving onto more complex issues relating to the regulation of dissonance within a mensural context. The twenty-first chapter, 'Quod omnis contrapunctus aut super cantum planum aut super figuratum fit, et primo quomodo super cantum planum' [How all counterpoint is made, either on plainchant or on figured music, and first, how on plainchant] includes a number of examples where the rhythmic content of a single voice part within a polyphonic setting is dictated in the main theoretical text.⁶⁷ Similar types of examples are seen in the *Compendium de discantu mensurabili* of Petrus dictus Palma ociosa, though these relate specifically to musical proportions rather than extemporised practices.

The first example in this chapter demonstrates an instance where the same note values are used consistently in the Tenor for the duration of the example. Tinctoris writes:

Super cantum planum quidem contrapunctum fieri contingit, quando ad voluntatem canentium quelibet ipsius plani cantus nota una semibrevis minoris prolationis aut maioris tenetur, ut hic probatur:	It happens, indeed, that counterpoint is made on plainchant, when, at the will of the singers, each note of that plainchant is taken as a semibreve of minor prolation or of major. ⁶⁸
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⁶⁷ In this chapter of Tinctoris's treatise, examples of this type always consist of two voices, a Tenor containing a plainchant melody, and a Contrapunctus, usually placed above the Tenor.

⁶⁸ Tinctoris, *De contr.*, II.xxi.3, ed. D'Agostino, pp. 316–318 and trans. Seay, p. 105, with small modification.



Figure 61. Tinctoris's *De contr.*, II.xxi.3. Example of rhythmic intricacy in Tinctoris's examples (E-VAu 835, fols. 124v (top)–125 (bottom)).

The rhythm of the Tenor in Figure 61 clearly matches the descriptions of the text, with the two mensuration signatures at the beginning of its staff and the repeat mark indicating that the notation is to be realised under both types of prolation in succession. The example opens with the Tenor being presented in semibreves of major prolation with a counterpoint voice added above this, reversing the order of the text. This ordering is indicated by the signature of major prolation being placed above that of minor prolation, a convention that Tinctoris does not explain but which was universally accepted in contemporaneous practical sources. However, this does not significantly affect the type of exemplification at work here.

In contrast to the rhythmic regularity of the Tenor, the Contrapunctus is highly melismatic and includes four proportional shifts in the section to be realised in major prolation. It would appear that the style of this example represents the practice of

cantare super librum [singing upon the book], the extemporised practice of singing unnotated counterpoint upon a Tenor in plainchant notation.⁶⁹ Despite its rhythmic and melodic complexity, the Contrapunctus can be aligned easily with the Tenor if Tinctoris's rules of consonance are followed carefully. This would allow the Tenor to act as a referential voice as it might if a singer were extemporising the counterpoint upon a pre-determined rhythmicised Tenor.

The example in Figure 61 offers the reader one possible contrapuntal extemporisation above a Tenor with a fixed rhythmic pattern, cast in a written-out version of florid extemporised counterpoint.⁷⁰ Although building upon an instantiation via projection exemplification model, Tinctoris's approach here is different to most cases that have been surveyed thus far in this thesis.

The main difference in the approach towards the type of exemplification here relates closely to the musical practice that it exemplifies. Tinctoris's example offers a single contrapuntal voice that would probably never have been replicated precisely in musical performance as part of extemporisation, nor was this the intention. This example, therefore, operates using a variation of the extrapolation model of exemplification. The model at work here, particularly for the Contrapunctus, does not include a great deal of content that has been mapped from the theoretical text, with only the rhythmic properties of the Tenor being prescribed. The Contrapunctus, though required for demonstration, is not described in any form, and serves to frame the rhythmicisation of a plainchant Tenor in a 'realistic' context.

Therefore, the exemplification here relies upon the reader understanding the general principles being demonstrated in the example as being representative of a musical practice rather than an exhaustive demonstration of a theoretical phenomenon. In effect, this example refers to contemporary musical performance culture, something that musically experienced members of Tinctoris's readership would have been aware

⁶⁹ On the fifteenth-century practice, and the value of Tinctoris's texts in understanding this, see Philippe Canguilhem, 'Improvisation as Concept and Musical Practice in the Fifteenth Century', *The New Cambridge History of Fifteenth-Century Music*, ed. Busse Berger and Rodin (Cambridge: Cambridge University Press, 2015), pp. 149–163. This practice continued well into the sixteenth century, though in a quite different form from Tinctoris's time: see Philippe Canguilhem, 'Singing Upon the Book According to Vicente Lusitano', *Early Music History*, 30 (2011), pp. 55–103.

⁷⁰ The work of Sean Gallagher is particularly illuminating on the relationship between *cantare super librum* practice and its notated forms in Tinctoris's treatise: see Gallagher, Sean, 'Tinctoris's Examples and the Sound of *Cantare super librum*', paper given at the conference *Johannes Tinctoris and Music Theory in the Late Middle Ages and Early Renaissance* (Senate House, University of London, October 2014). On this problematic topic, see Margaret Bent, 'Resfacta and Cantare Super Librum', *Journal of the American Musicological Society*, 36/3 (1983), pp. 371–391.

of, offering an additional pedagogical function. Its visual appearance is also striking, as the ‘block’ of musical notation covers a large amount of the available page space with visually complex material.

Despite its unusualness, the musical example holds some similarities to two examples found in *De regulari valore notarum*. The similarity occurs in the use of two mensuration symbols, with the same musical material being viewed under two different mensurations as required by the theoretical text. In *De reg. val.*, xiii–xiv, Tinctoris includes one monophonic example in each chapter that uses superposed mensuration signs.⁷¹ These examples present instances of major prolation and minor prolation respectively, each using material that can be realised in an appropriate fashion under both perfect tempus and imperfect tempus. In adopting a similar approach in *De contr.*, Tinctoris offers the reader an opportunity to clearly identify the effect that the change in prolation has upon the rhythmic content of the Tenor, and the implications that this has for contrapuntal extemporisation.

Looking more closely at this extempore-style example from *De contr.* (Figure 61), it is clear that other pedagogical elements are embedded. These bring additional contextual information relating to performance practices, and offer differing levels of complexity as the example progresses. The contrapuntal extemporisation under major prolation demonstrates this type of progression most clearly, particularly in regard to musical proportions through four changes.

The example (transcribed in Figure 62) begins in equal mensurations in both voices (perfect tempus with major prolation) and then moves through the following proportional changes: the first occurs in line with the fourth note of the Tenor, and places the Contrapunctus in *tripla* proportion; the second occurs in line with the sixth note with the signature C8/3; the third occurs in line with the eighth note with the signature 1/2; the fourth occurs in line with the twelfth note with the signature O3/2.⁷²

If one considers the level of understanding required for comprehension of the rhythmic effects of such proportions, it seems that the change to *tripla* proportion would have been easily understood. Under this proportion, the intervals formed between Tenor and Contrapunctus are a major third and a perfect fifth, with an octave between the two

⁷¹ These examples are discussed in more detail in Chapter Three.

⁷² The proportional relationships are labelled in I-Pg 1013, fol. 88, with proportional words acting as annotations to the signatures. This is in keeping with practices throughout the rest of this manuscript, which also includes Tinctoris’s pedagogical motet *Difficiles alios*. See Bonnie J. Blackburn, ‘A Lost Guide to Tinctoris’s Teachings Recovered’.

voices marking the beginning of the C8/3 proportion. The perfect fifth between the Tenor and Contrapunctus is preceded by a descending melodic leap of a fifth in the Contrapunctus, marking the presence of the 'D' as an important point of consonance within the shape of the melodic line. Such a melodic direction would have aided the reader in aligning the voice parts, using this distinctive moment as a reference point against which the values of the preceding notes could be measured.

The image displays five systems of musical notation, each consisting of two staves: Contrapunctus (C.) and Tenor (T.). The music is written in 12/8 time, indicated by the clef and time signature. The systems are numbered 1 through 5 on the left. System 1 shows the initial entry of the parts. System 2 includes a '3/1' proportion and a 'C8/3' proportion. System 3 includes a '3' proportion and a '1/2' proportion. System 4 includes a '4' proportion and an 'O3/2' proportion. System 5 includes a '5' proportion. The Tenor part consists of a few long notes, while the Contrapunctus part is more active with various rhythmic figures and rests.

Figure 62. Transcription of Figure 61 cast under major prolation.

Continuing a similar pattern, Tinctoris presents the conclusion of the passage of the example set in the proportion C8/3 with a clearly marked cadence. In addition to offering a sense of the melodic phrase ending, it provides a clearly defined moment where the presence of a perfect consonance can be assumed. This offers a clear reference point to the reader against which the remainder of the proportional passage can be measured. Tracking this trajectory back to the semibreve 'E' in the Tenor (the seventh note), a reader would need to have established that the Contrapunctus C was held over, meaning that there was not a simultaneous attack as such. In effect, the proportional relationship (C8/3) can be resolved entirely using the rules of consonance once final cadence point of this proportional section has been established. Although many readers would have fully understood the proportional relationship here, there is some evidence to suggest that the example was constructed in such a fashion to aid a number of different reading approaches, offering differentiated levels of complexity as the example progresses.

The next proportional change also offers evidence of a carefully considered form of didacticism embedded in the musical example. At the proportional signature of 1/2, Tinctoris replicates the rhythm that opens the C8/3 proportion that precedes this section, offering a kind of aural recall of the opening. Whereas the C8/3 section opens with a longa, followed by a breve rest and a dotted breve, the 1/2 section opens with a breve, followed by a semibreve rest and a dotted semibreve. Despite the change in notational appearance, the durational values of these opening notes remain the same.

In retaining the same durational values using different notational combinations, Tinctoris would have shown the effect that the proportional change had. This would offer a reader an opportunity to see how the same rhythmic gesture could be notated in different ways, demonstrating the subtleties of the mensural notation system and the effects that proportional relationships can have upon it, though this link could have been articulated more strongly if the pitch patterns had been duplicated.⁷³ Through establishing this relationship to the material that has gone before, Tinctoris also reinforces the fact that these proportional relationships apply 'within' the voice part rather than in relation to another voice.

⁷³ On issues of mensural reinterpretation see Emily Zazulia, *Verbal Canons and Notational Complexity in Fifteenth-Century Music*, PhD diss. (University of Pennsylvania, 2012), and Rob Wegman, 'Petrus de Domarto's "Missa Spiritus almus" and the Early History of the Four-Voice Mass in the Fifteenth Century', *Early Music History*, 10 (1991), pp. 235–303.

The inclusion of multiple proportional changes in the Contrapunctus of the extemporisation goes beyond what is strictly required by Tinctoris's text. The complexity and rhythmic floridity of this representation of an extemporised musical line are perhaps indicative of the kind of intricacy possible by experienced singers who were well versed in this technique. It is worth pointing out that the proportional changes do not apply from the outset, offering an opportunity to experience an equal number relationship between the two voices before more advanced levels of rhythmic complexity are explored.⁷⁴ Considering the proportional changes across the whole example, it seems that Tinctoris's stipulation of perfect tempus and major prolation only holds for 3 semibreves, from which point the remaining unequal proportional changes are invoked at intervals of 2, 2, 4, and 4 semibreves, perhaps suggesting a deliberate tension between the two voice parts, revealing yet another layer of intrigue in this example.

In contrast to the example demonstrating extemporised counterpoint over a Tenor presented in equal values in major prolation, Tinctoris's example for this process under minor prolation does not explore any proportional relationships in the Contrapunctus (see Figure 63 for transcription of Figure 61). The melodic material is less florid than that of the first half of the example, resting upon clear consonances in line with almost all of the Tenor notes, giving this contrapuntal voice a different style to that of the major prolation extemporisation. The fact that there are only two minims to the semibreve might account for the slightly different style here.

The image displays two systems of musical notation. The first system consists of two staves: the upper staff is labeled 'Contrapunctus' and the lower staff is labeled 'Tenor'. Both staves are in a bass clef with a 3/2 time signature. The Contrapunctus staff contains a complex melodic line with various note values, including minims and crotchets. The Tenor staff contains a simpler line of music with diamond-shaped notes, likely representing minims. The second system also consists of two staves: the upper staff is labeled 'C.' and the lower staff is labeled 'T.'. The C. staff is marked with a '4' above the staff, indicating a 4:2 ratio. It contains a melodic line with note values similar to the Contrapunctus in the first system. The T. staff contains a line of music with diamond-shaped notes, similar to the Tenor in the first system.

Figure 63. Transcription of minor prolation section of Figure 61.

⁷⁴ This practice applies throughout the examples in *Prop. mus.*

Tinctoris opens this part of the example, which appears in a rather compressed form in **V**, with a circle signature (○). This signature matches that of the Tenor and meets the requirement of the theoretical text for a demonstration of extemporised counterpoint above a monorhythmic Tenor placed in semibreves in minor prolation. The voice parts remain in equal proportion throughout, giving this ‘extemporisation’ a greater feeling of rhythmic regularity. Despite the slightly simpler texture of the contrapuntal part here, there is still a clear increase in the level of rhythmic complexity as the example progresses.

The contrapuntal voice in the second section of this example offers a more straightforward insight into extemporisation practices in relation to the rhythmicisation of plainchant whilst still following the details of the theoretical text. Tinctoris’s text provides only details on the rhythm of the Tenor and does not determine the pitch content. Thus elements of the ‘mapping’ model can be seen. However, as with the first section of this example, the fully notated ‘transcriptions’ of extemporised contrapuntal practice offer only a single example of the kind of counterpoint that could be sung upon a rhythmicised chant melody, offering something that is more extrapolated than mapped.⁷⁵

Given that the contrapuntal voice stays within the same mensuration and proportional configuration for the entirety of the second section, it seems that the musical example is placed in a ‘closer’ relationship with the text. Tinctoris’s theoretical point, which is listed first in his theoretical text, is presented in a form that does not obscure the crux of his argument with contextual clutter, as the first part of this example may have done. In adopting such an approach for this section of the example, the pedagogical emphasis is clear, with the level of complexity being checked against the didactic aims of the demonstration. Therefore, a slightly different text–example relationship is formed for the second section of Tinctoris’s example than is seen in the first.

The contrast between the two contrapuntal parts here is striking, and raises some important questions about the pedagogical function of such examples, and their integration into the theoretical argument. Whilst both sections of the example

⁷⁵ An exhaustive example would not have been possible, or pedagogically useful, given the ‘extemporised’ nature of the practice.

demonstrate the theoretical point of the text, the relationship between text and example is less straightforward when the two sections are considered together. As mentioned previously, the first section is somewhat more exploratory than the second. These two sections appear to use a mix of extrapolation and mapping, introduced in a different context to the examples studied in Chapter Three. In this context, a part of the example is dictated by the main theoretical text, but other elements forming the example, in this case the contrapuntal voice, are not detailed in the text. The example preserves one scenario that demonstrates the theoretical point, and does not provide an exhaustive exemplification of the musical possibilities under this theoretical scenario. Tinctoris's approach therefore attempts to offer a breadth of scenarios within a single example, giving a range of guidance to his readership.

Later in the same chapter, Tinctoris includes several other examples representing extemporised counterpoint using a Tenor that is rhythmicised in a predetermined repeating pattern, best described as a *talea*.⁷⁶ Whereas the first example of the chapter presents the Tenor in equal note values, Tinctoris's third example (Figure 64) uses a repeating rhythmic pattern of descending durations. Tinctoris writes:

<p>Alii vero primam notam ipsius plani cantus tres semibreves minoris prolationis, secundam duas et tertiam unam, et sic de aliis usque in finem concinunt, ut hic patet:</p>	<p>Others, indeed, harmonize the first note of this plainchant as three semibreves of minor prolation, the second as two and the third as one, and so on up to the end, as is seen here:⁷⁷</p>
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Tinctoris's text outlines a plainchant melody that is rhythmicised using a repeating pattern. This is described in the text as consisting of notes with the duration of three semibreves, two semibreves, and one semibreve being repeated in this order as a self-contained unit. Tinctoris's text also states that this repeating pattern is to be placed under minor prolation, thus equating each semibreve with two minims, leaving little room for misinterpretation of the notational signatures.

The musical example matches the theoretical description, as the Tenor (set to 'Alleluia') makes use of the rhythmic repeating pattern throughout the example (Figure

⁷⁶ This is defined in Tinctoris's *Diff.*, xviii, as 'the repetition of segments existing in one and the same voice-part of a composition, even to the name of their pitches and the value of their notes and rests'. His definition is contrary to the way the term is normally understood, and he is by far the latest writer to use them. Tinctoris, *Diff.*, ed. and trans. Carl Parrish, *Dictionary of Musical Terms* (New York: Da Capo Press, 1978), pp. 64–65. This is distinct from his definition of *color* which is defined only as a repeated rhythmic pattern without reference to pitch.

⁷⁷ Tinctoris, *De contr.*, II.xxi.5, ed. D'Agostino, p. 320 and trans. Seay, p. 107.

64).⁷⁸ The Tenor opens with the note values of breve, breve, semibreve, which under perfect tempus results in a perfect breve (3 semibreves), followed by an imperfect breve (2 semibreves) due to the imperfection by the following semibreve. This pattern, although notated using a mix of separate notes and ligatures, is preserved faithfully throughout the entire example.



Figure 64. Tinctoris, *De contr.*, II.5. Two-voice ‘Alleluia’ example representing extemporised counterpoint with predetermined tenor rhythm (E-VAu 835, fol. 125v).

⁷⁸ This example is also preserved in **Pg**, fol. 89, where the proportional shifts are annotated.

The image displays a musical score for 'Alleluia' transcription, organized into six systems. Each system contains three staves: Contrapunctus (top), Tenor (middle), and C. (bottom). The time signatures and other markings are as follows:

- System 1:** Contrapunctus and Tenor staves are in 2/1 time. The C. staff is in 3/2 time.
- System 2:** All staves are in 3/2 time.
- System 3:** Contrapunctus and C. staves are in C 4/3 time. The Tenor staff is in 3/2 time.
- System 4:** All staves are in 3/2 time.
- System 5:** Contrapunctus and C. staves are in O 9/8 time. The Tenor staff is in 3/2 time.
- System 6:** All staves are in 2/3 time.

The score includes various musical notations such as notes, rests, and bar lines, with some notes marked with diamond symbols.

Figure 65. Transcription of 'Alleluia' shown in Figure 64.

There is an argument to suggest that the notational form of the repeating pattern is actually somewhat superfluous, with the 'sound' of this unnotated practice being the most important aspect of the example. Given that Tinctoris discusses this example in terms of the rhythmicisation of an 'unmeasured' plainchant, his designation of the values of these notes in semibreve terms point towards the semibreve as a measure of

tempo.⁷⁹ Indeed, Tinctoris could have described the rhythmic values in mensuration terms (perfect breve, imperfect breve, semibreve), and thus his decision to quantify the rhythm in semibreve terms might point towards a practical aspect of this practice. His requirement to notate the practice for the purposes of demonstration forces poses conceptual problems that would not have existed in the practical extemporisation of counterpoint without notation.

As with the previous example of rhythmicised plainchant discussed in this chapter (see Figure 64), the Contrapunctus is placed above the Tenor with a repeating rhythmic pattern, and offers a number of different rhythmic perspectives on the extemporised counterpoint practice. There are four proportional changes in the Contrapunctus, placed strategically throughout the example in line with the beginning of a new *talea* and coinciding with a *perfectio*, reinforcing the Tenor rhythm pattern and perhaps showing how such extemporisation was coordinated in practice. These are highlighted with the following signatures: 2/1 occurring in line with the fourth Tenor note; C4/3 occurring in line with the thirteenth Tenor note; O9/8 occurring in line with the nineteenth Tenor note; 2/3 occurring in line with the twenty-second Tenor note.

The example opens in equal proportion in both parts, with the Contrapunctus and Tenor being signed with a circle signature (○), indicating minor prolation as required by the text. Tinctoris allows only a single statement of the rhythmic pattern with both voice parts in equal proportion, enabling the rhythmic pattern to be seen in its simplest form before the increasing complexity of the Contrapunctus demands more advanced contemplation.

In terms of exemplification, this leaves the reader in no doubt that the theoretical point is demonstrated clearly in a simple form right at the beginning of the example. A similar approach is regularly adopted in examples of this type, suggesting that Tinctoris was keen to emphasise the links between his musical examples and theoretical text before more complex rhythmic possibilities were explored in this extemporised scenario.⁸⁰

⁷⁹ On broader issues of tempo in this period, see Richard Sherr, 'Tempo to 1500', *Companion to Medieval & Renaissance Music*, ed. Tess Knighton & David Fallows (London: J. M. Dent & Sons, 1992), pp. 327–336.

⁸⁰ Similar approaches can also be found in the examples discussed in Chapter Three, as Tinctoris often presents theoretical material in the same order as in the text. This allows for the material to be introduced at a foundational level before the level of complexity is increased, guiding the reader through the example.

After the first iteration of the repeating rhythmic pattern, Tinctoris introduces the first proportional change in the Contrapunctus with the signature 2/1. This signature indicates a change to *dupla* proportion, the first proportional relationship discussed in Tinctoris's *Prop. mus.*⁸¹ The Contrapunctus passage in this proportion shows evidence of increasing rhythmic complexity as the passage progresses, with numerous extended melismatic figures that pose interesting rhythmic challenges for the reader. Despite the intricacy of the rhythm, the points of alignment with the Tenor are usually clearly marked by strong points of consonance. Such an approach can be seen where two semibreves are placed in ligature on C and D in the Contrapunctus voice. This point aligns with the F semibreve in the Tenor. The contrast between these longer note values and the intricate melismatic passages that precede and follow it, would almost certainly have acted as a kind of reference point to help visual (and aural) alignment of the parts. This proportion is maintained for three repetitions of the Tenor pattern and is followed by the third proportional change.

This change moves from duple proportion to a proportional relationship indicated with the signature C4/3, offering the reader an opportunity to engage with a more complex proportional relationship. Tinctoris retains this proportional relationship in the Contrapunctus for two iterations of the Tenor talea, offering a more extended exploration of the rhythmic possibilities under this proportion.

As with the previous proportional change, the section opens with an octave between the voices, giving the proportional change the 'sound' of a structurally important new section. The proportional change in this section may have caused some confusion to less experienced readers, particularly given the complexity of the relationship in comparison to those presented in the earlier stages of this example.

One technique that Tinctoris might possibly have used to help the reader in aligning the two voice parts is the placement of intervals of a fifth or octave in line with the perfect breve that starts each Tenor-rhythm unit. For example, this can be seen at the beginning of the second unit of the C4/3 section of this example. Although such a technique does not point towards a specific readership group, it might provide some evidence that a pedagogical thread can be traced in Tinctoris's more complex examples, even those referring to extemporised practices.

⁸¹ This proportion is the first discussed and exemplified in the list of proportions found in I.v.4–10, 'De genere multiplici'.

The third proportional change occurs at the beginning of the seventh unit of the predetermined Tenor rhythm. This change is signed with the signature O9/8, returning the piece to its original mensuration, albeit under a different proportional relationship, creating a triplet effect in the Contrapunctus. The start of this section is marked with an octave between the Tenor and Contrapunctus, with another octave marking the end of this proportion. Tinctoris presents only a single unit of the Tenor rhythm in this proportion, making the visual alignment of the two voice parts relatively straightforward if standard rules of consonance are followed.

The final proportion change is signed with the fraction $2/3$ and follows the typical procedure of opening with an octave between the two voices. As this is the final section of this pedagogical miniature, a commonplace cadential formula is used to draw the example to a close. The Contrapunctus part in this proportional section follows much the same model as the previous sections outlined above, including only a single unit of the Tenor rhythm, suggesting that the construction of this example was carefully managed.

The example shown in Figure 64 provides the reader with a single instance of extemporised counterpoint upon a repeating rhythmic pattern with decreasing durational values in the Tenor, thus demonstrating Tinctoris's theoretical point. As discussed above, the rhythmic content of the Tenor matches that described in the theoretical text, and thus the example performs its basic function in the theoretical whole. However, Tinctoris's efforts to situate this example within a wider theoretical context, and perhaps broader musical practice, demonstrates that the example was included as an 'active' rather than 'passive' participant in the theoretical whole.

In many of his other treatises, Tinctoris describes a particular theoretical phenomenon in meticulous detail in the theoretical text, and includes a musical example that fits the tight theoretical specifications. The examples discussed thus far in this part of this chapter operate with a 'looser' exemplification relationship to the main text, a point that can be accounted for in two ways for these extempore-style examples.

The first reason centres on the extemporised nature of the practice being demonstrated. Unlike Tinctoris's examples that refer to 'written-out' compositional practice, *cantare super librum* [singing upon the book] follows a different kind of performance practice, and would be subject to significant variation in performance at any time within the boundaries of established rules. A consideration of the practice to which the examples in Tinctoris's chapter refer partially accounts for the rhythmic

complexity of the proportional changes he invokes. It seems that Tinctoris is notating a normally unwritten practice, and thus the notation can only serve as an approximation of the practice, which had almost limitless rhythmic possibilities and subtlety.⁸² Nevertheless, these examples offer some of the best insights into the mechanics of this written practice, and give our best approximation as to its ‘sound’.

The second, more general, reason for the ‘looser’ relationship is the nature of the theoretical topic being discussed. Although referring to *cantare super librum* practice, these examples show evidence of Tinctoris beginning to approach matters of ‘style’, a topic that is difficult to broach with specificity. For such topics, exhaustive demonstrations are not always possible as they were for smaller, more definition-based theoretical points. Instead, Tinctoris attempts to embed a range of theoretical scenarios into a brief musical demonstration, and thus fairly regular proportional relationships are a way to exemplify a range of different rhythmic possibilities within a single example.

Tinctoris also adopts this approach for the final example of II.xxi of *De contr.* (Figure 66). His theoretical point follows a similar model to the others discussed in this section of this chapter. However, the construction of the example shows subtle variations in the relationship between text and example that can be formed even when demonstrating similar theoretical points. Tinctoris states:

<p>Quidam insuper primam notam plani cantus tres semibreves minoris prolotionis, secundam duas, tertiam unam et, e converso, quartam unam, quintam duas, sextam tres, et sic de ceteris usque in finem efficiunt, ut hic:</p>	<p>Certain ones, in addition, make the first note of the plainchant three semibreves of minor prolotion, the second two, the third one, and, conversely, the fourth one, the fifth two, the sixth three, and so on up to the end, as here:⁸³</p>
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As with previous examples of this type, the short example includes a Tenor that matches the rhythmic specifications of the theoretical text.⁸⁴ The rhythmic pattern (talea) described in the theoretical text consists of six notes with the semibreve values of 3, 2, 1, 1, 2, 3, all placed in minor prolotion, offering the most extended Tenor-rhythm figure in this chapter. This six-note pattern expands the three-note pattern of the previous example of the chapter (see Figure 64), adding an extra element of rhythmic interest to

⁸² Sean Gallagher, ‘Tinctoris’s Examples and the Sound of *Cantare super librum*’. In this paper, Gallagher presented alternative versions of Tinctoris’s examples, with additional voices in some cases.

⁸³ Tinctoris, *De contr.*, II.xxi.6, ed. D’Agostino, p. 320 and trans. Seay, pp. 108–109.

⁸⁴ This example is also preserved in an annotated form in **Pg**, fol. 88v, where this example is placed between the first and second discussed in this chapter, departing from Tinctoris’s pedagogical order.

the Tenor. The two voices used for this example are low, with the Tenor occupying the same range as other examples showing counterpoint above a Tenor. The parts occasionally cross over one another, and the Contrapunctus has an especially wide ambitus when compared with other examples of this type.

The image shows a page of a medieval manuscript with musical notation and Latin text. The text is written in a Gothic script and includes the words: "Quidā iſup p̄mā notā plāi air'nes ſeibentes miorū plāvīs. ſecūda duo. r̄tā r̄n̄ſet ec̄cūſe q̄rtā p̄mā q̄rtā duo. ſextā r̄tā r̄tā ſe te. c̄r̄tā uſiſi. n̄c̄ ef. ſi air. ue ſi. Alleluia Tenor. Alle Contra. pun. ctur." The musical notation is written on four-line staves. The Tenor part is written in a lower register, and the Contrapunctus part is written in a higher register. The notation includes various note values and rests, with some notes having stems that cross between staves. The page number "126" is visible in the bottom right corner.

Figure 66. Tinctoris, *De contr.*, II:21. Example of a repeating Tenor rhythm as dictated by the text (E-VAu 835, fol. 126).

The image displays a musical score for 'Alleluia' with five systems of music. Each system consists of two staves: a vocal line (C. or Tenor) and a contrapunctus line. The time signature changes throughout the piece.

- System 1:** Contrapunctus and Tenor. Time signature: 2/1.
- System 2:** C. and T. Time signature: 4/4.
- System 3:** C. and T. Time signature: 3/2.
- System 4:** C. and T. Time signature: 2/3.
- System 5:** C. and T. Time signature: 3/4.
- System 6:** C. and T. Time signature: 8/3.

Figure 67. Transcription of 'Alleluia' shown in Figure 66.

Despite the apparent similarities in the construction of this example to those that have come before it, a different approach is taken towards the composition of the Contrapunctus, perhaps showing an increase in rhythmic complexity.⁸⁵ In other examples from II:21, Tinctoris ensures that proportional changes occur in line with the start of a new repeat of the Tenor-rhythm unit. The case is somewhat different here, as proportional relationships are applied in a less structured fashion, posing different challenges to the reader. In effect, the aspects of the approaches of the two previous examples are combined here.

Tinctoris deploys five proportional changes across the whole example (transcribed in Figure 67), often placed in such close proximity that only a single note in the Tenor separates them. These changes are: 2/1 in line with the second Tenor note; 3/2 in line with the eighth Tenor note; 2/3 sounded immediately after the thirteenth Tenor note; \odot 4/3 in line with the nineteenth Tenor note; O8/3 in line with the twentieth Tenor note.

Unlike the previous example of this type (Figure 64) where proportional changes occur at the beginning of a repeated rhythmic unit, the proportions occur in a much more ‘flexible’ fashion, though not with quite the same tension as ‘Virginis Marie laudes’. The first proportional change takes place in line with the second note, allowing little time for the reader to establish the equal numbers relationship between both parts that precede this change. This change places the Contrapunctus in *dupla* proportion with its starting values at the beginning of the example. The change occurs after a quasi-cadential figure that creates the sense of a brief period of rest in the Contrapunctus on its semibreve G. However, this figure does not function as a ‘full’ cadence due to the avoidance of syncopation and its placement in a parallel third configuration with the Tenor.

Tinctoris deploys similar rhythmic gestures under this proportion to those he uses in the opening figure. The coloured minims (semiminims) have equivalence with those with additional flags (*fusae*) in the opening section of the example, due to the application of duple proportion to the coloured minims. These similarities may be attributed to a practice found in many of Tinctoris’s examples in other treatises where only a small amount of theoretical material is changed to best highlight the effect of a

⁸⁵ Such flexible use of musical proportions goes beyond examples in other theoretical treatises of a similar style.

particular change in an example. The retention of the same underlying tactus, if the proportional change is taken to simply shift note values up one mensural level, would have helped the reader to measure the Tenor with greater ease than if a more complex proportion were used.⁸⁶ Similar approaches in presenting simpler proportions at the beginning of an example are seen throughout this chapter.

The floridity of the opening and duple proportion sections follows the same kind of rhythmic style present in the previous example (Figure 64). Such melodic complexity would seem to further suggest aspects of extempore-style counterpoint, offering a ‘transcription’ of a normally unwritten practice. Indeed, the decision to use duple and subduple proportions in this example is noteworthy, given that the extempore style of this example would point towards a ‘mental’ rather than ‘written’ practice. In this theoretical context, and in a broader musical practice, one has to question what the difference between a duple proportion and smaller note values would have been. The mental nature of this practice, for which Tinctoris seemingly provides a notated transcription, would probably not have been conceived in the mind of the singer in a notated fashion, and thus this may show evidence of Tinctoris trying to work around a problem imposed by the written-down nature of his examples. Thus, the example clearly fulfils a pedagogical purpose and presents some of the closest witnesses to a fifteenth-century mental practice.

Although the first proportional change occurs shortly after the start of the example shown in Figure 66, Tinctoris does not place the second proportional change (3:2) until part-way through the second iteration of the repeating Tenor rhythm. In placing the proportional change at this point, Tinctoris creates a greater sense of variety in the Contrapunctus above the fixed Tenor. The syllable ‘-lu-’ of ‘Alleluia’ is also placed at this point of proportional change, triggering such a shift at a less important structural place within the example.⁸⁷ The proportion is maintained until the end of the Tenor rhythm figure (talea), offering a different textual division of this short example compared to others of a similar type. The rhythmic gestures of this section are sufficiently distinct from those used in the rest of the example to this point, thus demonstrating a different rhythmic spectrum available through proportional

⁸⁶ The use of duple proportion in practical music often looks very similar, creating a different note picture for similar sounding rhythms.

⁸⁷ In **Br1**, ‘luy’ is placed just before the proportional change, and the syllables in **BU** are placed schematically at the beginnings of staves. Tinctoris’s original probably placed ‘luy’ at the point of change in **V** with the spelling of **Br1**.

relationships, increasing the contextual breadth of the example and showing the inventiveness possible in extemporised contrapuntal practice.

At the start of the third Tenor-rhythm unit, Tinctoris places the signature $2/3$, invoking the third proportional change of the example, cancelling out the $3:2$ proportion of the second section. This change is placed before the semibreve rest that coincides with the Tenor breve F, and is retained for exactly one rhythmic unit. As with the opening passages in this example, the Contrapunctus is made up of florid material, and includes a striking octave scale descent in line with the breve 'G', a melodic shape that eventually moves the contrapuntal part below the Tenor leading to the octave A semibreves.

The fourth and fifth proportional changes occur in close succession. The fourth change ($\odot 4/3$) is placed at the beginning of the fourth repeat of the Tenor rhythm, and applies for only three semibreves (perfect breve). This relationship triggers a change to *sesquialtera*, placing 9 minims in the time of 6 in the Tenor. The fifth and final change is placed on the second note of this unit of Tenor rhythm and applies through to the end of the piece. This, in conjunction with the fourth change, produces a further duple proportion with respect to the preceding material.

Although Tinctoris's theoretical text outlines the Tenor rhythm, it does not provide any specific pitch details, the number of repeats to be included, the proportional relationships to be used in the Contrapunctus, or indeed the range of this contrapuntal voice. The reason for this is that it would not have been practical, or in some respects possible, to describe these in full: the text sets out a precept and does not aim to give all of such detail, 'activating' the example within the pedagogical framework. Tinctoris's theoretical point instead refers to a wider performance practice, with this musical example providing a demonstration of a single instance of this practice, offering the reader an extrapolated model to imitate in practice. Indeed, one might also interpret Tinctoris's silence on the details of the Contrapunctus as some evidence of implicitly coded directions given in the Tenor that could create this contrapuntal voice part.

Despite operating within the same framework as other examples, there is one important difference that affects the relationships between the theoretical text, the musical example and musical practice here. This difference is the placement of proportional relationships based upon decisions that might have been taken during

extemporisation, rather than the proportions being placed at points where they might act as a kind of structural marker, guiding the reader (or performer) through the process of musical extemporisation in a more advanced, and perhaps realistic, context. In turn, this might suggest that Tinctoris's arithmetical precision is, in a sense, only a notated approximation of a flored practice that did not normally need to be conceptualised with such precision.

The number of examples presented in this section, and indeed other sections of *De contr.*, is noteworthy. Given that most other contemporary theoretical texts include only a fraction of the number of examples that Tinctoris uses, it is important to question why Tinctoris adopted such an unusual approach, and how this affected the pedagogical direction of the treatise.

Size and scale of polyphonic miniatures

Tinctoris's theoretical output is almost unique in the fact that it survives mostly in three principal manuscript sources, two of which were copied by the same scribe, Wenceslaus Crispus. The variations between these three main sources are much smaller and less significant than many other manuscript variants for texts of the same age, and there is a small (but not insignificant) amount of evidence to suggest that **V** and **BU** were proofread after copying, possibly by Tinctoris himself.⁸⁸ If one considers the time and cost involved in producing luxurious manuscript volumes such as **V** and **BU**, the inclusion of such a large amount of polyphonic miniatures becomes a significant feature.

Earlier in this thesis I posited that these manuscripts were designed to sit in the royal library alongside the works of esteemed Classical and humanistic authors such as St Augustine, St Thomas Aquinas and Giovanni Pontano. I now wish to explore this notion a stage further. I would suggest that Tinctoris's theoretical treatises (as they survive in **V**, **BU** and **Br1**), which are fairly plain in textual terms save for their consciously literary prologues, are versions of the texts that were constructed

⁸⁸ I am grateful to Jeffrey Dean for drawing my attention to this. In most cases, these editorial emendations consist of faint vertical lines inserted to divide words that have been joined together erroneously during the copying process. Other corrections include the changing of individual letters within words e.g 'namque' is edited to become 'nanque'. It does not appear that there are any editorial corrections of this type in the musical examples, and the editing process is not applied consistently across **V** and **BU**. One has to question why any person other than Tinctoris would make such emendations, perhaps suggesting that this proofreader was Tinctoris himself.

specifically for the presentation volumes. Given the restrained textual style, Tinctoris may have supplemented the visual aspects of his treatises, particularly *De contr.*, with copious musical examples and demonstrations to increase the visual appeal of the pages of his treatises, and enhance the ‘musicality’ of his content.

The latter stages of Books II and III of *De contr.* are particularly interesting if considered in this light. For many theoretical points, Tinctoris includes a polyphonic miniature that seems to extend beyond the main point of the theoretical text. Whilst this often helps to construct a ‘richer’ contextual picture to situate theoretical points within, it nevertheless raises questions about the purpose of such extended polyphonic miniatures and their function within the theoretical ‘whole’. No other theorist before Tinctoris, to my knowledge at least, includes such lengthy demonstrations for theoretical discussions of dissonance and contrapuntal practice. The five-voice miniature, ‘Deo gratias’, in II.xx of *De contr.* is particularly illuminating in this regard. Tinctoris writes:

In hoc autem res facta a contrapuncto potissimum differt, quod omnes partes rei facte, sive tres sive quattuor sive plures sint, sibi mutuo obligentur, ita quod ordo lexque concordantiarum cuiuslibet partis erga singulas et omnes observi debeat. Ut satis patet in hoc exemplo quinque partium existenti, quarumquidem partium tres primo, deinde quattuor ac postremo omnes quinque concinunt:

In this, however, composition differs most from counterpoint, since all the parts of composed music, be they three, or four, or more, are mutually interdependent, so that the order and law of concords of any part in relation to themselves and all the others should be observed, as is seen sufficiently in this example, being of five parts, of which parts three sing together at the beginning, then four, and then finally all five.⁸⁹

Tinctoris’s musical example (Figure 68) demonstrates the gradual addition of voices to create a ‘full’ five-voice texture and shows merit in the compositional skill on display in such a short piece of music. If the example is examined more carefully however, it seems to be far more lengthy than strictly necessary to demonstrate the theoretical point, with particular sections of the example being rather more extended than others.

The theoretical text states that the musical example that follows will begin with three voices, and will gradually build up the texture to four and finally all five voice parts, each constructed in relation to each other. The example opens in a fashion that matches the text, with the first phrase consisting of only three voices, using all three

⁸⁹ Tinctoris, *De contr.*, II.xx.5–6, ed. D’Agostino, p. 314 and trans. Seay, pp. 102–103.

Contratenor voices with a silent Tenor and Discantus (see Figure 69).⁹⁰ All three voices start in the same rhythm, before diverging in order to cadence. Indeed, the use of the Contratenor secundus as the tenor-function voice at this point embodies Tinctoris's view that *resfacta* does not depend upon a single Tenor: the function can be placed in any part at any given time.

The entry of the Tenor and Discantus, together with the rests in the Contratenor tertius, brings about the four-voice texture that Tinctoris's text describes (with a brief overlap of five-voice sonority). Tinctoris maintains the four-voice texture for twice as long as the three-voice texture and introduces a greater sense of floridity in the Discantus. Thus far, Tinctoris's musical example matches the construction of that described in the theoretical text and continues to do so with the introduction of the fifth voice.

After a F-E-G figure signalling a cadence in the Discantus, all five voices enter. Tinctoris retains the five-voice texture for the remainder of the example, creating an unbroken rich vocal texture. This five-voice texture is maintained for a total of thirteen perfect breves, compared to the two breves for the three-voice section and four breves for the four-voice section. On one level, Tinctoris's theoretical description matches the example included to demonstrate the relationship between parts in 'composed music'.⁹¹

However, for the present discussion it is striking that the five-voice section of this example dominates proceedings, with more than two thirds of the example being assigned to this richer and 'fuller' texture. Tinctoris does not specify the durations for each of the differently voiced textures, thus leaving a kind of 'open field' for theoretical demonstration in this miniature. It is noteworthy that Tinctoris dedicates such a large portion of this example to the five-voice texture, given that textures of more than four voices were less common in contemporary polyphony, and we have no other five-part music by Tinctoris. By skewing the example towards the five-voice texture, Tinctoris demonstrates clearly the importance of having all the voices working together, evidencing his compositional skill and command. Tinctoris's musical example exemplifies his theoretical point clearly, extrapolating the general structure into musical notation, albeit skewed towards the five-voice section.

⁹⁰ It is intriguing that the Tenor is one of the silent voices at this point. Only the three Contratenor parts sing in the first cadential phrase. The entry of the other voice part at the end of this phrase would have been aurally marked by the G-F-F-E-G figure in the Contratenor tertius.

⁹¹ I am mindful of the ease with which *resfacta* and *cantare super librum* can be misconstrued and placed in polar opposition when the two practices probably coexisted.

The image displays a musical score for the piece 'Deo gratias'. It consists of two systems of five staves each. The first system includes the parts: Supremum (Soprano), Contratenor tertius (Third Contralto), Tenor, Contratenor secundus (Second Contralto), and Contratenor primus (First Contralto). The second system includes: S. (Soprano), C3. (Third Contralto), T. (Tenor), C2. (Second Contralto), and C1. (First Contralto). The music is written in G minor (two flats) and common time (C). The Soprano part begins with a 5-measure rest, indicated by a '5' above the staff. The score features various rhythmic values including minims, crotchets, and quavers, with some notes beamed together. There are also some rests and dynamic markings throughout the piece.

Figure 69. Transcription of 'Deo gratias', as shown in Figure 68.

2

10

S.

C3.

T.

C2.

C1.

14

S.

C3.

T.

C2.

C1.

17

S.

C3.

T.

C2.

C1.

The image displays a musical score for the piece 'Deo gratias'. It is organized into three systems of staves. Each system contains five staves: a vocal staff (S.) and three chorus staves (C1, C2, C3). The vocal staff uses a soprano clef, while the chorus staves use various clefs (C3 uses a soprano clef, T. uses a tenor clef, C2 uses an alto clef, and C1 uses a bass clef). The score is in a key signature of one flat (B-flat) and a common time signature (C). The first system covers measures 10 to 13, the second system covers measures 14 to 16, and the third system covers measures 17 to 19. The notation includes various rhythmic values such as minims, crotchets, and quavers, along with rests and dynamic markings.

* E-Vau 835 presents this as a void minim with a dot. This is a scribal error.

Figure 69 (cont.). Transcription of 'Deo gratias', as shown in Figure 68.

Although Tinctoris's example demonstrates the required theoretical point, the sheer length of the citation compared to his other examples is noteworthy and relates to a point previously made in Chapter Three. The extent to which Tinctoris's treatises may have been constructed with the compilation of a luxurious library volume in mind gains credence when the extensive demonstration of some points is considered. This is particularly evident in the later parts of *De contr.*, almost to the point where the musical example dominates the theoretical whole.

It is in examples of this length and scale that the possible influence of a luxurious presentation volume upon the composition of a treatise seems most apparent. The aforementioned structure of the example seems to prioritise the five-voice texture above all others, creating a rich sound if this example were to be performed. Indeed, the relationship between the parts is easy to see and thus the example fulfils its (presumably) primary pedagogical purpose. However, its function appears to extend beyond the strict requirements of Tinctoris's pedagogy and into the realms of sheer impressiveness, demonstrating Tinctoris's compositional skill.

This five-voice example occupies almost an entire opening of the manuscript. Such a sight would have been impressive to say the least in a volume dedicated to technical musical material that would presumably have been of only limited interest to the non-specialist reader. On a purely visual level, the opening containing the five-voice miniature 'Deo gratias...' would have been quite striking, particularly when compared to other pages of Books I and II which consist of only very short musical examples which function more as graphical definitions than musical examples.⁹²

Tinctoris's demonstration of a five-voice texture need not have been so extensive, given that his main theoretical point is covered in the first half of the example. Thus, it is possible that Tinctoris went to great lengths to compose a pedagogical miniature that would be both pedagogically useful *and* visually striking. Indeed, its placement across one opening would have allowed an experienced reader to see all five parts in the same view, much like a practical source. There is some possible evidence that visual alignment of consecutive polyphonic parts was possible but it is not clear whether this type of reading would have been a widespread practice.⁹³ This evidence is found in the frontispiece to **V**, where Tinctoris, seated at a desk, appears to be following musical

⁹² This type of example is discussed at length in Chapter Three.

⁹³ See the discussion of the frontispiece to **V** that opens Chapter Two.

notation on both sides of the opening, possibly using both hands to follow multiple voice parts on the page.

If the layout of the opening presenting ‘Deo gratias’ in **V** is considered, it would appear that the layout of the notation was carefully planned to occupy the majority of the opening, with the final section of the theoretical text that precedes it placed above the example. The Discantus and Tenor, the most important structural voices, are notated on the left-hand side of the opening, and laid out to occupy entire systems, making clear divisions between the voice parts.⁹⁴ The three Contratenor parts occupy most of the right-hand side of the opening, with only the Contratenor primus being placed in the bottom left corner of the opening.

By placing all five voices on the same opening, Tinctoris emphasises the interrelationships between the parts and highlights the size of the musical example at hand. Indeed, in **BU** (fols. 142v–143) this example occupies the same amount of space, with all voices being notated at an equal size. Perhaps more so than some of the shorter, definition-based, musical examples found earlier in the treatise, this miniature shows Tinctoris’s compositional skill, and suggests that he recognised the need for his treatise to ‘look’ complex in addition to its highly technical subject matter. The inclusion of this example is akin to many of the complex figurative diagrams found in mathematical treatises and may have served as a reminder of the complexity of the subject matter he was discussing.⁹⁵

This notion gains further support when this case is considered in the context of the treatise. Tinctoris’s example seems to be far longer than is necessary to demonstrate his theoretical point, something which is rather out of character for the rest of the treatise up until this point.⁹⁶ Given the relatively economy and efficiency of his demonstrations of different theoretical points in other texts, it seems possible that this point in *De contr.*, and by implication those that follow, was composed specifically with a larger presentation volume in mind.

De contr. is the later of only two of Tinctoris’s notational treatises to which a definite date can be attached. The colophon at the end of its presentation of the **Br1**

⁹⁴ The Discantus is rather cramped, being forced to extend into the margin and demonstrating that the layout of this example was not planned to the same high standard as many others in **V**.

⁹⁵ See, for example, the complex diagram from Boethius’s *De institutione musica*, shown in Figures 1 and 2 of Chapter Two.

⁹⁶ This approach seems to be in contrast to Tinctoris’s remark ‘Quod brevius fit, melius fit’ in III.ii.12 of *Prop. mus.* See Tinctoris, *Prop. mus.* III.ii.12, ed. D’Agostino, p. 76 and trans. Woodley, p. 356.

states that it was completed on 11 October 1477.⁹⁷ By this point in the late 1470s, Tinctoris would surely have firmly established the kind of reputation that could earn him the commission of a royal library manuscript of this quality and size. Perhaps it is therefore not too much to suggest that Tinctoris might have composed this treatise specifically for a volume of this sort, and may even have been finishing the compilation of the treatise whilst the planning of the manuscript was taking place.⁹⁸

Beginning in II.xxiii of *De contr.*, Tinctoris includes a series of examples that might further support the idea that the treatise on counterpoint was constructed specifically for a large library volume and that an awareness of this volume influenced his approach. All six examples forming this series are given texts that may relate to important personal and intellectual allegiances from Tinctoris's career in Naples, and possibly his earlier career in the Low Countries, and Naples more generally. The texts of these examples are all newly written, doubtless by Tinctoris himself.⁹⁹ Each of these six examples is significantly more extended than almost all examples found in *Prop. mus.* The length of these examples arguably pushes them towards appearing as standalone miniatures more than sharply focused pedagogical 'examples' as such. These all demonstrate theoretical points relating to the proper durations of dissonance under various mensurations.

In introducing the first example of this series, Tinctoris writes:

<p>Immo si tam in prolatione maiori quam in minori per plures minimas, vel ultra hoc in prolatione minori per plures semibreves, fiat descensus in aliquam perfectionem, discordantia super primam etiam partem cuiuslibet earum syncopando frequentissime admittitur, ut hic in sequenti exemplo patet:</p>	<p>Further, if, not only in major prolation but also in minor, a descent into any cadence is made by many minimae or, additionally, in minor prolation by many semibreves, a discord by syncopation on the first part of any one of these is also most frequently allowed, as [here]:¹⁰⁰</p>
--	---

Tinctoris's text provides information about the placement of the dissonances that he discusses, using syncopation as the focal point of this example (Figure 70). For other

⁹⁷ For a possible chronology of Tinctoris's treatises, see Woodley, *The Proportionale musices of Iohannes Tinctoris*, p. 55.

⁹⁸ This tantalising notion has broader implications when considered alongside Ronald Woodley, 'The Dating and Provenance of Valencia 835: A Suggested Revision', *Early Music Theory Online*, <http://earlymusictheory.org/Tinctoris/Articles/DatingAndProvenanceOfValencia835/#> (accessed 25 July 2015).

⁹⁹ The texts are mostly rhymed octosyllabic quatrains that are not of the highest quality.

¹⁰⁰ Tinctoris, *De contr.*, II.xxiii.5, ed. D'Agostino, p. 330 and trans. Seay, p. 113, with modification.

theoretical points of this type, Tinctoris provides a short polyphonic demonstration, approximately a third of the length of the example in question here, retaining a sharper focus upon the theoretical point at hand rather than situating this point within a broadly realistic musical scenario. Thus, the construction of this example, which extends across a second opening, raises some important questions that relate to the size of the treatise and its possible construction for a royal library volume.

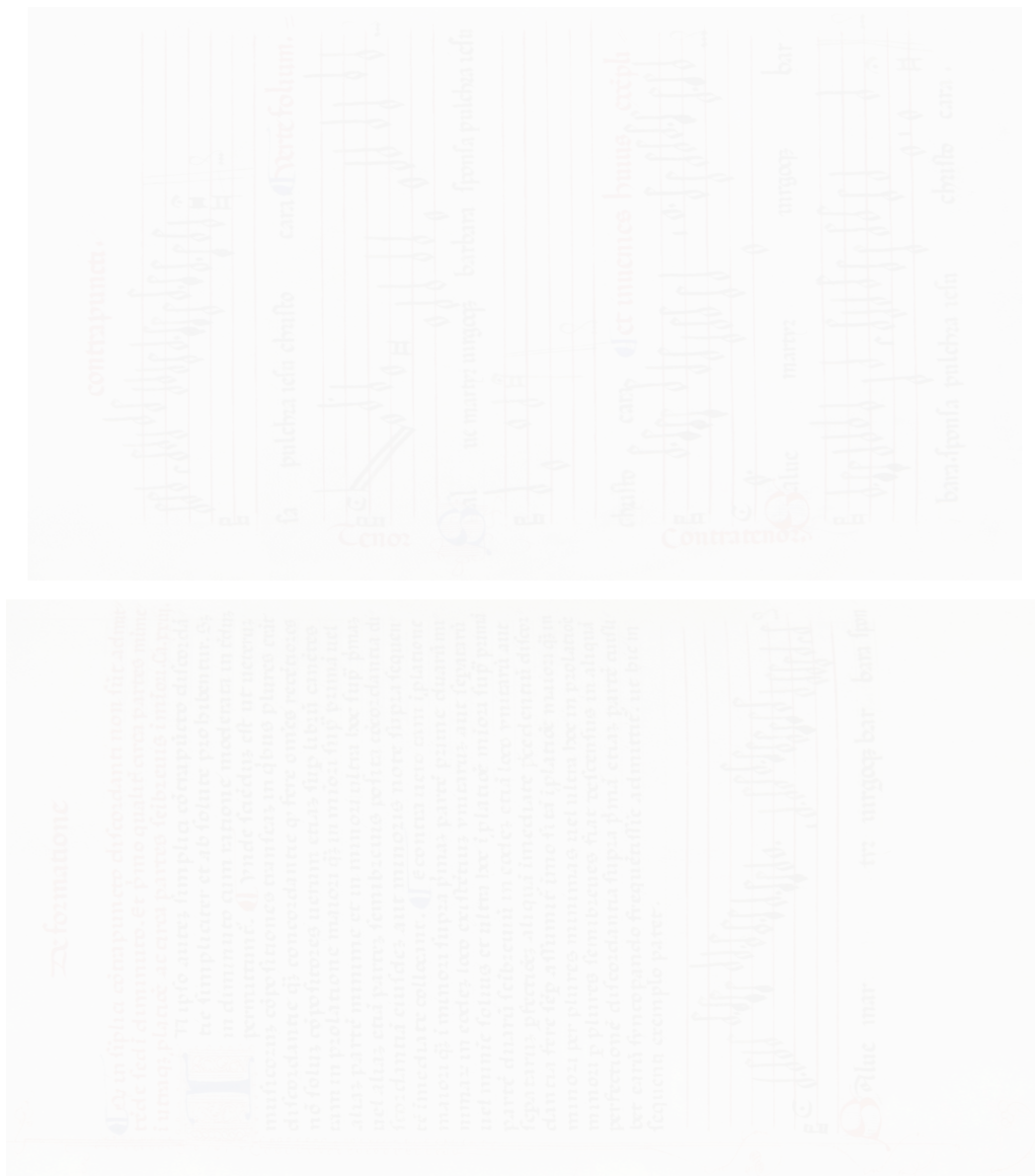


Figure 70. Tinctoris, *De contr.*, II.xxiii.5. Three-voice polyphonic example ‘Salve martyr virgoque Barbara sponsa pulchra Iesu Christo cara’ (E-VAu 835, fols. 128v–129 (top), 129v –130 (bottom)).

whereby a theoretical point is extrapolated to be situated within its ‘natural habitat’, bringing practical relevance to the theoretical text.

By contrast, the second section of the example is rather more unusual. It is more than double the length of the first, providing a more extended demonstration of the theoretical point. As required by the theoretical text, it presents Tinctoris’s theoretical point within the context of minor prolation, albeit a much broader context than the first section. Both aspects of his theoretical point, relating to dissonances within a series of minims or semibreves, are presented by the midpoint of this section of the example. Thus, the ‘necessary’ part of this section is completed well before the end of the example. If Tinctoris had concluded his example here, his theoretical point would have been demonstrated and thus the primary purpose of the example would have been fulfilled.¹⁰¹

The length of the second section would seem to indicate that Tinctoris was not necessarily concerned with examples that demonstrated only the main thrust of his theoretical argument, and was certainly not overly constrained by available page space. Instead, the inclusion of such a lengthy example is justified in two other ways. Firstly, from a theoretical perspective, longer musical examples offered the potential for more extensive exemplification. In providing numerous subtly different demonstrations of the same theoretical point in different scenarios, Tinctoris presented his theoretical points in a richer musical context, offering a more nuanced understanding than that offered by a text-based explanation or shorter musical example.

Despite the clear contextual positives of this approach, the extended musical examples assume a degree of familiarity with polyphonic music notation that some of his readership may not have had. If one considers the mechanics of aligning the consecutive parts of an example of this length, it seems that it could pose major problems to visual comprehension. To aid visual alignment somewhat, the first section is presented across the opening containing fols. 128v–129 in **V**, and the second section is presented on fol. 129v and a small part of fol. 130 (see Figure 70). In **V** the phrases ‘verte folium’ [turn over the leaf] and ‘et invenies huius exempli’ [and you will find this example’s...] are included after the Discantus and Tenor voices to indicate that the

¹⁰¹ I am aware that from a ‘harmonic’ point of view, much would need to be adjusted to conclude the example here. A more probable point of conclusion would have been the octave ‘D’, ending the penultimate phrase of the example. From this point onwards, the Tenor and Discantus seem to adopt a slightly different compositional style.

example continues over the page. At the top of the next page, Tinctoris includes the word ‘Residuum’ [the remainder], signalling the link between the musical notation on this page and that of the previous.¹⁰²

Supremum
Sal - ve mar - - - - - tyr vir - go -

Contratenor
Sal - ve - - - - - mar - - - - - tyr vir - go -

Tenor
Sal - - - - - ve mar - tyr vir - - -

4
Sup.
que Bar - - - - - ba - ra, spon - sa pul chra - - - - - Ie - su - - - - -

Ct.
que - - - - - Bar - ba - - - - - ra, spon - sa pul - chra Ie - su - - - - - Chris -

T.
go - - - - - que Bar - ba - ra spon - sa pul chra - - - - - Ie - su Chris -

7
Sup.
Chris - to - - - - - ca - ra. Sis - - - - - me - ri - - - - -

Ct.
to ca - ra. Sis me - ri - - - - -

T.
to ca - ra. Sis me - ri - - - - -

11
Sup.
-tis no - bis - - - - - et - - - - - pre - - - - - ci - bus pro - pi -

Ct.
- tis - - - - - no - bis - - - - - et pre - ci - bus pro - pi - ci -

T.
- tis no - bis et pre - ci - bus pro

Figure 71. Transcription of ‘Salve martyr virgoque Barbara’, as shown in Figure 70.

¹⁰² One might construe this as a small witticism, perhaps showing an awareness of the extreme length of this musical example. I am grateful to Jeffrey Dean for bringing this reading to my attention.

2

15

Sup. ci - - - a co - ram sum - mo

Ct. a co - - - ram sum - mo

T. - pi - ci a co - ram sum - mo

19

Sup. De - o, ut lo - - -

Ct. De - - - o, ut lo - ca - ti

T. Deo - o, ut lo - ca -

22

Sup. - - ca - ti in cae - li se - - di -

Ct. in cae - li se - di - bus,

T. - - - ti in cae - li se - di - -

26

Sup. bus, te - cum om - nes le - te - mur in e - o.

Ct. te - - cum om - nes le - te - mur in e - o.

T. bus te - cum om - nes le - te - mur in e - o.

Figure 71 (cont.). Transcription of 'Salve martyr virgoque Barbara', as shown in Figure 70.

The second possible function of such a lengthy example at this point in the treatise relates to the visual appearance of the musical notation. As with the example shown in Figure 68, Tinctoris's decision to effectively 'extend' the example, seemingly without strict theoretical justification, contributes to the musical notation dominating the available page space. Such an approach would have meant that complex musical notation, perhaps unfamiliar to non-musical readers, emphasised the complexity of the subject matter under discussion, further confirming Tinctoris's musical erudition and compositional skill to a broad range of readers. Such a lengthy musical example would have been rather ungainly and impractical in a less luxurious manuscript, occupying valuable page space, and thus it is entirely plausible that Tinctoris composed this extensive example, and indeed others in the same series to be discussed below, with a presentation volume in mind, more specifically **V**.

If the text of the example is considered, intertextual links to Tinctoris's position at the Aragonese court can be found. The text, which to the best of my knowledge is unique, may refer to the chapel of St. Barbara, housed within the Castelnuovo.¹⁰³ This seems likely given the prominent position that this chapel would have held in the minds of Tinctoris's Neapolitan readers, and its central importance to religious devotion within the court.

Indeed, it seems improbable that Tinctoris would have composed a short piece dedicated to the saint to whom a chapel in the royal household was dedicated before his period of activity in Naples, though St. Barbara was venerated widely throughout Christendom at this time. Although the subject matter of the musical text alone does not securely confirm that Tinctoris composed this treatise with a Neapolitan audience in mind, it is suggestive of a Neapolitan link that goes beyond the florid prose of the prologue, which may have been written after the rest of the treatise. In any case, the change of prolation indicates its composition as an example rather than a miniature standalone song in the style of Walter Frye's *Ave regina celorum*.

A further reference to St. Barbara is made later in the counterpoint treatise with a citation taken from an anonymous setting of the monophonic song 'Vray dieu d'amours', given its proper text in **Br1** but contrafacted in **V** and **BU** as 'O Barbara

¹⁰³ The likelihood of this text being unique would seem to suggest that it was either newly composed for this example, or that it originated from within the court.

virgo pulcherrima'.¹⁰⁴ The inclusion of two polyphonic examples related to St. Barbara is significant, particularly when set in the context of other musical texts at this point in the treatise.

Further evidence to support a kind of contextual integration with Neapolitan court life can be seen in the other polyphonic examples found in *De contr.* xxiv–xxviii. The most significant of these is the polyphonic miniature with the text 'Beatissima Beatrix', perhaps Tinctoris's best-known polyphonic miniature, made famous for its obvious allusion to his pupil, Princess Beatrice who, by 1477, became Queen of Hungary. It is widely known that Tinctoris dedicated his *Diffinitorium*, *Complexus* and *De imperfectione* to Beatrice, and thus an example that bears her name though properly addressed to St Beatrice is not all that surprising. In the text that precedes this musical example, Tinctoris states:

Et quamvis per huiusmodi notam aut plures similes natura quantitatis cui subiecta est vel subiecte sunt (ut dictum est) perfectam aut perfectas, descensus fiat in aliquam perfectionem, vel due earum in eodem loco unitarum aut separatarum perfectionem ipsam antecedant, supra primam partem nullius earum discordantia est admittenda, ut hic:

And, although a descent into some cadential resolution may be made through a note of this type or many notes, as has been said, a perfect one or ones, in the nature of the quantity to which it is subject or they are subject, or two of them, existing as a unit or separately in the same place, may precede this perfection, a discord above the first part of neither of these must be admitted, as here:¹⁰⁵

Despite the text choice probably drawing attention, 'Beatissima Beatrix' is actually one of the shorter musical examples from this passage of the treatise, occupying just over a single side of a folio (Figure 72). The three voices use only equal, duple and quadruple proportions, as required by the theoretical text.¹⁰⁶ This is in stark contrast to the complex two-voices miniatures found in *Prop. mus.* and the extempore-style examples in *De contr.*

¹⁰⁴ The transmission of this song is catalogued in David Fallows, *A Catalogue of Polyphonic Songs, 1415–1480* (Oxford: Oxford University Press, 1999), pp. 408–410.

¹⁰⁵ Tinctoris, *De contr.*, II.xxv.4, ed. D'Agostino, p. 338 and trans. (adapted) Seay, p. 118.

¹⁰⁶ The tenor voice is the first to use duple proportion, making the shift at the end of the first phrase. The tenor voice later moves into quadruple proportion, interspersed with a return to the perfect tempus that starts the example. The Discantus changes briefly to duple proportion in the latter third of the example. The Contratenor shifts to duple proportion very briefly midway through the second phrase. Although the counterpoint is intricate, the proportional relationships would have been easy to ascertain and resolve.

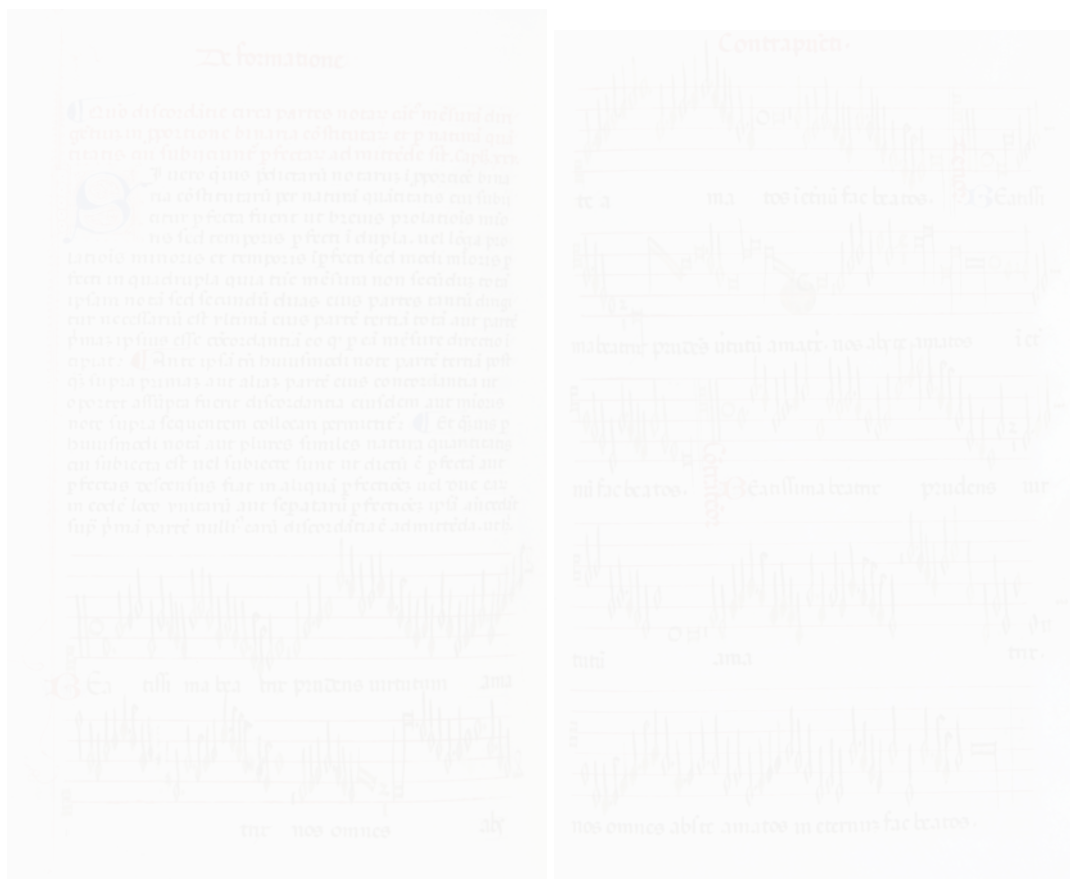


Figure 72. ‘Beatissima Beatrix’ from Tinctoris, *De contr.*, II.xxv (E-VAu 835, fols. 131v–132).

For the present point, it will suffice to say that Tinctoris demonstrates his theoretical point through a general avoidance of dissonance in an even more marked fashion than his normal highly concordant style. The majority of dissonances appear at pre-cadence points as they are approached using a figure that suspends the dissonance by rhythmic syncopation as one might expect. Tinctoris’s text effectively states that even though dissonances are permitted immediately before a cadence, they should not be sounded simultaneously.

Numerous examples of this type can be found in Tinctoris’s polyphonic miniatures, with at least three easily identifiable cases occurring at cadence points.¹⁰⁷ In each case, at least one voice forms a dissonant interval with the Tenor, with this dissonance being created by a suspended upper note over a descending Tenor figure. For example, the final cadence suspension consists of a Tenor E, Contratenor A and a Discantus D. Each dissonant suspension is resolved as part of the descent into the next

¹⁰⁷ Other instances do occur in the example, though these are of less structural importance than those at cadences.

melodic phrase. This conforms to Tinctoris's theoretical point that dissonances are prohibited under the first half of a semibreve of minor prolation, the first semibreves of a perfect breve under duple proportion, or the first breve of a perfect longa under quadruple proportion.

If one considers the length of this example and the amount of page space required to include it in the treatise, alongside its contribution to the theoretical text, then there is an argument to suggest that this example also extends into the realms of theoretical 'excess'. This is not to say that the length of the example is not valuable in some sense, rather that it goes some way beyond what is required for demonstration of such a text, suggesting that something more than practical 'exemplification' is at work.

One possible explanation for such extended examples might emerge if a comparison is drawn between II.xx–xxii and II.xxiii–xxviii. Musical examples representing extemporisation through *cantare super librum* practice dominate II.xx–xxii, with each demonstrating the addition of a contrapuntal voice to a rhythmicised plainchant Tenor. II.xxiii–xxviii are dedicated to examples demonstrating procedures of *resfacta*, offering different perspectives on the topic of counterpoint taken broadly. Each miniature in the latter group of chapters is clearly cast in this fully composed model, thus shifting the focus of theoretical discussions onto this practice and away from extemporised counterpoint. In adopting the fully composed model for these examples, albeit on a miniature scale, Tinctoris took the opportunity to demonstrate a range of theoretical and compositional points, going beyond provision of small instances of specific theoretical precepts. His expansiveness in this regard goes some way to outlining the different skills involved in extemporisation and composition in a polyphonic context, and provides some justification for the extra length of the examples.

Given the specific reference to 'Beatrix' in the text of the musical example, it seems highly likely that it was composed during Tinctoris's time in Naples, almost certainly for this specific point in the counterpoint treatise. Indeed, there are a number of possible dedicatees to which this example is addressed. The first possibility is that 'Beatrix' refers to the fourth-century Roman martyr Beatrix, given that the text takes the form of a prayer. It may also refer to the thirteenth-century Flemish Cistercian Blessed Beatrice of Nazareth, who was also venerated on the same day as Beatrix (29th July). A further dedication to Princess Beatrice may be seen, whom Tinctoris titles in much the same way as 'beatissima Beatrix' in the final chapter of *De reg. val.*, perhaps

suggesting that although the literal addressee is St Beatrice, allegorical references are made to the Princess. Thus, it seems that the text of this example has intertextual relationships that work on different levels, something that can also be seen in some of the other examples from this passage.¹⁰⁸ With this in mind, and the likelihood of Tinctoris being aware of the production of a presentation volume of his works, it would seem that such an example was included, at least in part, because of the luxury of page space afforded to Tinctoris for this treatise.

The visual aspects of the example would have been important, with it occupying just over one half of the opening and thus offering a substantial ‘block’ of musical notation. Twinned with the broader focus in this musical example, such a point would seem to be indicative of specific construction with a specific volume layout in mind, if not necessarily for this theoretical point. Indeed, this ‘block’ would have provided a visual cue for music, even if the reader did not necessarily engage in full with the notated contents.

The apparent ‘excess’ of this example forms different types of text–example relationships here. On a basic level, Tinctoris’s theoretical point is demonstrated, and the length of the example serves to present this point in a number of scenarios within a rich and diverse musical context. That said, the clarity of the theoretical point is, arguably, somewhat diminished by the degree of contextual ‘clutter’, as also seen in some other examples from this passage. Although a form of the extrapolation model is at work in this example, the polyphonic miniature is indicative of a broader musical practice, for which some examples of how this might be deployed are provided. In short, Tinctoris’s theoretical point could have been easily demonstrated through a much shorter example, an approach that would, in some ways, present the theoretical point within a ‘tighter’ pedagogical structure, more in keeping with the approach taken in the earlier part of the treatise. However, it would not have exemplified the point in a fashion that would provide the reader with the tools to properly deploy it in composition, and thus this more extended example, if engaged with fully, offers a richer understanding.

Similar issues are raised if other examples from this part of the treatise are considered. Another example of a polyphonic miniature that would seem to have been constructed for a ‘presentation’ type volume is found as the next example in the

¹⁰⁸ I am grateful to Jeffrey Dean for offering suggestions on the possible person(s) to which this refers.

counterpoint treatise. This even more extended example (Figure 73) is found in II.xxvi and is introduced with the following text:

Dum vero descensum per unam aut plurs huiusmodi notarum proportionis ternarie in aliquam perfectionem fieri contingit, tunc si perfecte sint vel augmentate, supra primam partem nullius earum discordantia umquam assumi debet. Secus autem si quovismodo fuerint imperfece, quia tunc prima pars cuiuslibet earum supra se discordantiam collocari patitur, ut patet in sequenti exemplo:

While, indeed, it occurs that a descent into some perfection is made through one or more notes of this kind in ternary proportion, then, if they are perfect or augmented, above the first part of not one of these should a discord ever be taken. Otherwise, however, if they are imperfect in any way, then the first part of any one of them will permit a discord to be taken above them, as is seen here.¹⁰⁹

Tinctoris's polyphonic miniature here (Figure 73 and Figure 74) is of an equivalent length to some of his shortest standalone musical compositions, occupying an entire opening of **V** and **BU**. As before, the striking visual elements of this example would have emphasised the 'musicality' of the treatise content and present a degree of complexity, even if the notation at hand is relatively easy to realise.

Unlike the previous example, Tinctoris deploys proportional relationships at the same time in the three voice parts, often presenting each voice part in a different proportion, something not often seen in his examples. The proportions used are named in the first paragraph of the chapter, forging a strong text–example relationship. Therefore, the foundational relationship formed between text and example is much the same as the previous example in its relevance to the theoretical point, though the increased specificity of the theoretical text adjusts this subtly.

However, in this case, the musical example is almost double the length of the previous polyphonic miniature (Figure 72). Although some of the additional length can be attributed to the greater number of proportional relationships to be shown, it was not entirely necessary for Tinctoris to compose such a lengthy musical example for this point. Throughout his other treatises, and indeed the earlier stages of *De contr.*, Tinctoris had demonstrated an ability to compose concise and targeted musical examples that relate in clear ways to the theoretical text, with little 'clutter'.¹¹⁰ In this

¹⁰⁹ Tinctoris, *De contr.*, II.xxvi.5–6, ed. D'Agostino, p. 342 and trans. Seay, p. 120.

¹¹⁰ This is particularly true of the treatises on imperfection, alteration, musical dots, and the *Expositio manus*.

example, the sheer length might have posed an insurmountable challenge to some readers, and doesn't always contribute additional useful demonstration.

This possible stray into the realms of theoretical 'excess' is significant as the subject matter of the text points again towards potential links with specific places or persons associated with Tinctoris and Naples. The subject of the text is 'Martin', potentially referring to Tinctoris's father or to St. Martin's monastery that sits atop the Vomero hill, overlooking the entire city of Naples.¹¹¹ Although the links to the theoretical text are clear, it seems that this text occupies a place within the series of polyphonic miniatures that refer to places or persons beyond the treatise itself.

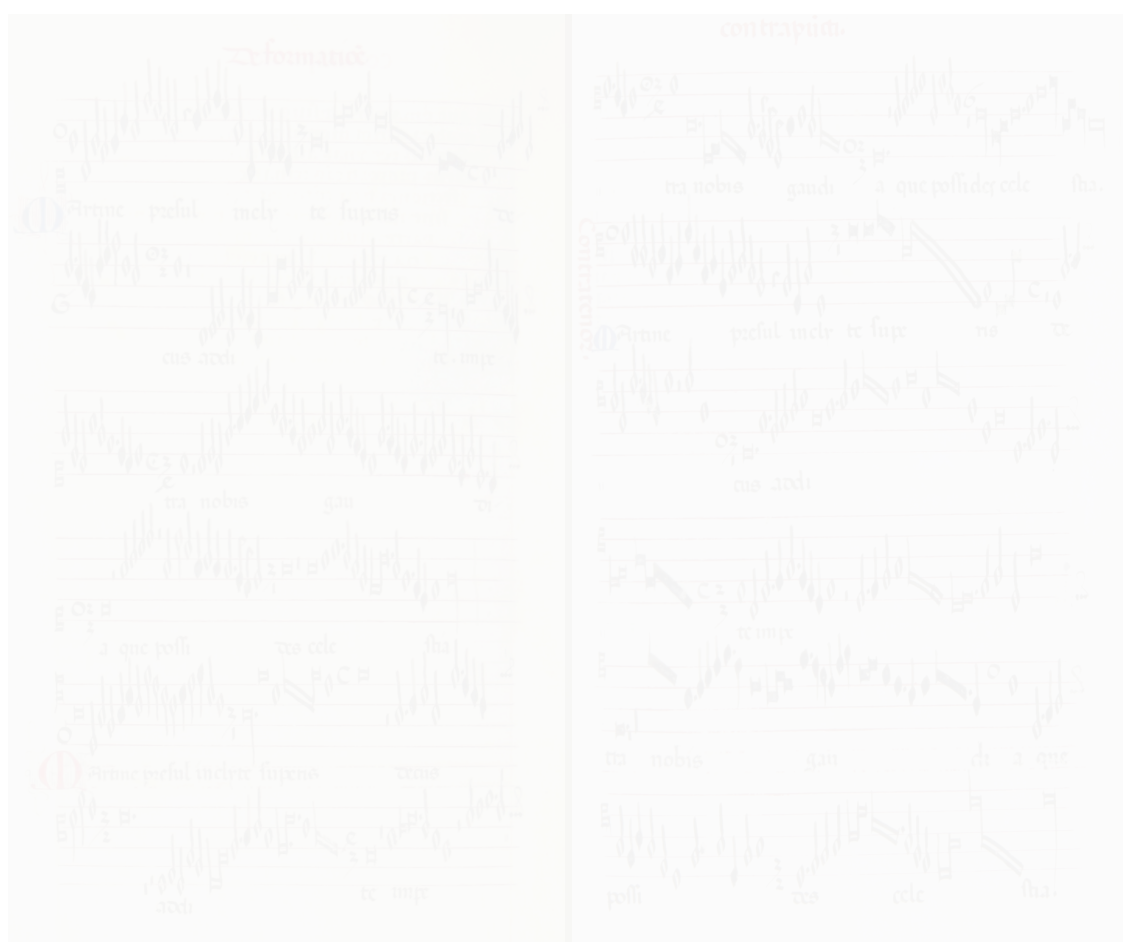


Figure 73. 'Martine presul inelyte' from *De contr.*, II.xxvi.5–6 (E-Vau 835, fols. 133v–134).

¹¹¹ Such a location would have been well-known to Tinctoris's likely Neapolitan readership. On Tinctoris's family see Ronald Woodley, 'Tinctoris's Family Origins: Some New Clues', *Journal of the Alamire Foundation*, 5/1 (2013), pp. 69–96.

The image displays a musical score for three voices: Supremum, Contratenor, and Tenor. It is divided into four systems of staves. The first system shows the beginning of the piece. The second system starts at measure 4 and includes a $3/1$ time signature. The third system starts at measure 8 and includes time signatures $3/2$, $3/1$, and $3/2$. The fourth system starts at measure 12 and includes time signatures $C\ 4/3$, $C2/3$, and $4/3$. There are asterisks (*) above certain notes in the Supremum and Contratenor parts in the fourth system. The score uses various note values and rests, with some notes marked with a diamond symbol.

*1 Dot missing in V and BU

*2 Erroneously notated in all sources as a minim.

Figure 74. Transcription of 'Martine presul' as shown in Figure 73.

2

The musical score is divided into five systems, each with three staves for vocal parts (Sup., Ct., T.) and three staves for instrumental parts (Sup., Ct., T.).

- System 1 (Measures 15-20):** Features a common time signature. The vocal parts have melodic lines with some slurs. The instrumental parts provide a harmonic accompaniment.
- System 2 (Measures 21-24):** The instrumental parts change to $\text{C}4/3$ and $\text{O}3/4$ time signatures. The vocal parts continue their melodic development.
- System 3 (Measures 25-27):** Continues the vocal and instrumental lines with various note values and rests.
- System 4 (Measures 28-31):** Shows a complex sequence of time signatures: $\text{O}2/3$, $\text{O}2/3$, $3/1$, $3/2$, and $6/1$. The vocal parts have some rests, while the instrumental parts are more active.
- System 5 (Measures 32-35):** The final system shown, concluding the transcription with a double bar line.

Figure 74 (cont.). Transcription of 'Martine presul' as shown in Figure 73.

In making apparent links to specific sites in Naples and important persons in Tinctoris's personal and intellectual life, many of these examples would appear to suggest that Tinctoris was keen to demonstrate the full range of his skills in these particular manuscripts, whilst tailoring the content to interests and context of a Neapolitan audience. Many of the proportional sections of this example last for much longer than strictly required, and thus it would seem that this type of example serves a function beyond simple demonstration. Indeed, such a lengthy example forces a visual 'break' in the pattern of the treatise and a change of reading mode, possibly disrupting the flow of Tinctoris's main theoretical points, if not reducing the level of didactic specificity in the musical notation.

From the point of view of exemplification, the example in Figure 73 (transcribed in Figure 74) forms a similar relationship to previous ones of this type, providing evidence for the presence of a kind of 'model'. The general point outlined in the theoretical text is extrapolated into musical notation in a fashion that presents such a point in its 'natural habitat' or in a number of ways that a singer might encounter it in practical sources. The scope of the musical example would make the kind of 'concurrent' reading that might have been possible with shorter examples more difficult. This increased difficulty can be attributed partially to the length of the example, and to the layout of the notation on the page. Given that the musical notation occupies a whole opening, a reader would need to turn back to be reminded of the theoretical point. No *signa congruentiae* are deployed for this type of example, and thus the visual linking of text and example would be more challenging at this point, requiring the reader to understand the theoretical text fully to see its relevance.

The sheer length of the three examples discussed above (Figures 70, 72, and 73), and the possible links in their texts to people or places associated with Naples, further supports the notion that Tinctoris conceived *De contr.* with the completion of a luxury presentation volume for the royal library in mind and that this influenced his exemplification strategy. As a point of comparison, the longest example found in *Prop. mus.*, a somewhat anomalous case, is still much shorter than those examined from *De contr.* In I.vi, Tinctoris provides the following example (see Figure 75).

This fairly extended two-voice example demonstrates a specific theoretical point laid out in the text that precedes it. For the present discussion, the specific theoretical point is not of central importance. What is important here is the respective length of the example. Despite being the longest example in the treatise, it only occupies

a total of four systems, spread across both sides of the opening. Visually, the musical example appears alongside theoretical text, thus emphasising the links between the two elements of the theoretical whole.



Figure 75. Tinctoris, *Prop. mus.*, I.vi. Lengthy proportional example (E-VAu 835, fols. 150v (top) and 151 (bottom)).

The construction of this example, too, points towards a targeted demonstration point, retaining a sharper sense of pedagogical focus. The example acts more as an extended two-voice pedagogical example than a three-voice polyphonic miniature. Its untexted nature also removes the possibility for intertextual references to locations, people or practices outside of the treatise. The Discantus and Tenor both convey Tinctoris's theoretical point, working together to demonstrate this in a carefully controlled environment.

Given that *Prop. mus.* was probably completed during the early part of Tinctoris's career in Naples, it is unlikely at that stage that he prepared this treatise with a presentation volume in mind.¹¹² Indeed, the widespread transmission of *Prop. mus.* as a standalone treatise further suggests that it circulated in a number of exemplar copies, many of which may have been formed of loose sheets. This transmission process would seem to suggest that Tinctoris did not prepare this treatise with any specific manuscript collection in mind and was aware of the likely limitations of page space for such a treatise.

The contrast in the type of examples in *Prop. mus.* and *De contr.*, two treatises that are often cast together (somewhat incorrectly) as his most complex and important treatises, is significant. Both treatises offer meticulous descriptions and demonstrations of their topic, making extensive use of musical examples. However, the comparison suggests that Tinctoris conceived the more lengthy examples of *De contr.*, particularly as they appear in **V** and **BU**, with a larger volume in mind and that he took this opportunity to refer to particular figures and places that would have some relevance to the likely readership in the royal library.¹¹³

Summary

Across this chapter, Tinctoris's approach towards the exemplification of his theoretical points through newly-composed polyphonic miniatures has been shown to be carefully considered. Many of these examples show clear evidence that they were composed for the specific purpose of demonstrating a detailed and technical theoretical point, and go

¹¹² Indeed, the inclusion of this treatise in a number of other sources would perhaps suggest that it circulated independently of the main sources. Estimates date this treatise between 1472 and 1475, though it is clear that it was composed before the counterpoint treatise.

¹¹³ Intriguingly, none of the extended musical examples from *De contr.* that make explicit extra-textual references are found in any other sources outside of the three main Tinctoris sources. This further suggests that they did not circulate independently and were probably composed specifically for the presentation volume.

beyond merely providing instances of a practice. In many cases, this approach could have encouraged a kind of ‘concurrent’ reading, whereby the reader could consult the musical notation alongside the theoretical text, following the order of the textual description to see different scenarios of the same theoretical point, though this is not always the case. Indeed, his approach towards this type of exemplification would have encouraged such a mode of reading, as shown in the two previous chapters.

The evidence presented in this chapter has shown that Tinctoris’s polyphonic miniatures adopt an ‘active’ role in the exemplification of theoretical points, serving to expand upon the descriptions of the text as well as situating points within a more realistic context. The construction of such ‘controlled’ environments relates Tinctoris’s theoretical points to a musical output, thus strengthening the links between theory and practice.

In examining the construction of this type of exemplary content, it seems that the type (and quantity) of examples was influenced in some cases by the projected production of a royal library volume of Tinctoris’s works. The final section of this chapter posits the idea that the differences in approach towards exemplification in *Prop. mus.* and *De contr.* is indicative of Tinctoris’s knowledge of such a volume. The number of polyphonic miniatures in the counterpoint treatise, some of which demonstrate explicit and implicit links to Naples, the Castelnuovo, the royal court and important intellectuals, far exceeds the scale of those included in the more modest *Prop. mus.* The length of many of the counterpoint miniatures also fits neatly onto a single folio or across an opening, further suggesting an awareness of the publication size. Such examples are visually striking, and would have had the appearance of musical complexity in a presentation volume, even if the notation is not always that difficult to resolve.

Despite the seeming importance attached to the visual aspects of the musical notation, it is clear that a pedagogical vein runs through each of these examples. Although Tinctoris’s theoretical points could perhaps have been exemplified using a short example, the priority remains the theoretical point, even if visual appearance is a significant motivating factor. The potential intertextual readings of the texts of these examples also offer a fascinating insight into other motivating factors behind the composition of such neatly constructed polyphonic miniatures.

Whatever Tinctoris’s motives for including such extended exemplary content, it is clear that all types of newly-composed polyphonic miniatures contribute towards

the creation of a theoretical ‘whole’ that is quite different from the theoretical works of his contemporaries. In tackling specific theoretical points and more general practices through composition, Tinctoris brought a degree of contextual breadth to his treatises, matched in the range of exemplary content and exemplification strategies. This contextual breadth, and the compositional skill demonstrated in such examples, is testament to Tinctoris’s wide-ranging musical knowledge, and high status accorded to musical examples in his texts.

Conclusion

With both parts of this study now complete, it is possible to draw some general conclusions based upon the evidence set forth in Parts One and Two. In Part Two of this study, I have examined the strategies of exemplification adopted in the notational treatises of Johannes Tinctoris and the role that they play in the formation of the theoretical ‘whole’. As demonstrated in the previous three chapters, the sheer variety of examples makes his treatises ideal case studies to understand the ways in which contemporary readers might engage with such texts and to draw conclusions about broader practices of exemplification. In contextualising Tinctoris’s examples in this way for the first time, this thesis has addressed questions of music-theoretical readerships and the possibilities of reading musical notation in an essentially non-linear fashion. It also has implications for directions of further study of this type of material, something I hope to take forward in the coming years.

Given the relative lack of literature on this topic, Part One established an essential historical backdrop that examined traditions of musical exemplarity in music theory treatises, and what these trends might reveal about types of musical reading in use before Tinctoris’s texts. This examination also incorporated an exploratory survey of developments in silent reading practices, almost certainly the primary mode of engagement for Tinctoris’s notational texts.

This survey has shown that many of the changes in scholarly practice go hand-in-hand with developments in musical notation systems and contemporary theoretical writings, and are demonstrative of a shift towards music as a more ‘literate’ culture. Part One showed that notated musical examples became an increasingly important part of treatises throughout the period 1100–1450, with exemplary content seemingly being indicated with greater specificity in the exemplars from which scribes copied. Such a shift seems to provide some evidence to suggest that theorists recognised the demonstrative and pedagogical powers of musical examples, and, by implication, that scribes recognised this content as an integral part of the text.

Chapter Two surveyed the musical examples of a number of key practical music theory texts from 1100 onwards. Through this survey, I identified a general trend towards more specific tailoring of exemplary content as a regular part of music theory treatises, a clear forerunner to Tinctoris’s extended newly composed examples. Although the survey was not exhaustive, instead offering only a snapshot, the texts

selected were of sufficient importance and topical breadth to establish a broad understanding of general trends in practical musical exemplarity.

Some aspects of the changes in exemplary approaches can be attributed to developments in the topics discussed by music theory, with an increasing focus upon issues impinging directly on musical performance from notation rather than the study of *musica speculativa*. However, this is not to suggest that speculative theory was not important, or interesting, from the perspective of musical exemplarity, as highlighted by the changing examples in Boethius's *De institutione musica*.

For the study of Tinctoris's examples in Part Two, the most directly comparable historical treatises were those focused on notation from the thirteenth, fourteenth and early fifteenth centuries. From around 1200 onwards, practical music, and associated notational issues, became an established discipline that co-existed on an increasingly equivalent plane with *musica speculativa*. The treatises of the *musica mensurabilis complex*, all of which probably emerged from the intellectual milieu of the University of Paris, were among the first to make regular use of notated examples to demonstrate notational theoretical precepts.

Starting with Johannes de Garlandia's (attributed) *De mensurabili musica*, staff-based musical notation became a feature that accompanied most theoretical discussions of mensural notation. This practice brought a distinctly practical focus that was further developed in Magister Lambertus's *Tractatus de musica* and Franco of Cologne's *Ars cantus mensurabilis*. Indeed, Franco's text makes regular use of citations of voice parts from existing compositions to demonstrate his points, perhaps explained as an intellectual strategy to address the lack of traditional '*auctoritates*' for practical music theory. Even if only motivated by the need for an intellectual defence, these texts began to pave the way for the kinds of approaches towards musical exemplarity seen in Tinctoris's texts, where examples function in a more fully integrated manner, both within the context of the treatise and broader musical practice.

The fourteenth century continued to be a period of change for musical exemplarity, particularly in light of the developments in scholarly practice, allowing theorists to explore practical issues without having to invoke authoritative texts as intellectual justification. Marchetto of Padua's *Lucidarium*, arguably the most important fourteenth-century Italian music treatise, is demonstrative of this. The *Lucidarium* includes musical examples tailored to demonstrate specific theoretical points, some of which theorise beyond practice. As shown in Chapters Two and Three,

some of his exemplification strategies show prototypical versions of Tinctoris's exemplary approaches, something particularly true of the demonstration of hexachordal mutation. However, Marchetto's relatively extensive exemplification of his points shows a markedly different approach from the so-called *Ars nova* of Philippe de Vitry, which appears much closer to the tradition of the Parisian *musica mensurabilis* treatises. The *Ars nova* includes only a handful of very short, primarily graphical, examples that demonstrate specific notational points, but do little to further contextualise the precept. Despite these differences, it is clear that the growth of practical music theory throughout the fourteenth century led to an increasing reliance upon examples to facilitate a detailed engagement with specific notational practices.

Indeed, such a trend is evidenced by the set of five treatises commonly known as the Berkeley treatises, probably by the elusive Parisian author, 'Goscalcus'. The first three treatises of this set build upon the works of Johannes de Muris, revising and updating their content. In terms of musical examples, these three treatises make use of a mix of short extracts from pre-existent works and illustrative newly composed graphical examples. Thus, the examples in these texts show developed forms of the exemplification approaches taken by Franco of Cologne, Philippe de Vitry and Marchetto of Padua. As discussed in Chapter Two, the fourth treatise of the Berkeley set is a highly unusual text, including a number of diagrams of musical instruments showing the development of musical proportions and the harmonic scale. Drawing upon traditions of speculative music theory, the use of such diagrams in a more 'practical' guise perhaps shows prototypical versions of the conceptual maps of pitch space found in Tinctoris's *Expositio manus*, though these are almost certainly grounded in the proportional traditions of Boethius's *De institutione musica*.

As with many historical trends, convenient linear progressions can misrepresent the way in which events actually unfolded, even when more generalised aspects of a trend suggest unilateral motion. The music treatises of Prosdocimo de Beldomandi are interesting from the perspective of exemplarity given that notated examples are rarely deployed, with text-based explanations being used instead, seemingly contrary to the contemporary orthodoxy. Nevertheless, the practical focus of his treatises is clear, and the relative lack of examples perhaps points towards a different type of reader and intellectual method, further demonstrating that a contextualised study of music treatises can enhance our understanding of the music-theoretical landscape.

The historical survey of Part One showed a general trend towards increasing specificity in musical examples, showing prototypical forms of Tinctoris's use of many musical examples in his notational texts. The frequency of newly composed musical examples being deployed in theoretical treatises also increased over this period, perhaps suggesting that examples became viewed as an increasingly integral and pedagogically useful part of the theoretical text. My study of earlier trends of musical exemplarity places Tinctoris at a kind of pivot point in the shift from manuscript culture to printed material. His texts exhibit the number of examples that one would expect to find in a printed volume such as Gaforus's *Practica musice* or Sebald Heyden's later *De arte canendi*, but in manuscript copies rather than prints.¹

With this in mind, Part Two was predicated on the thesis that Tinctoris's approach towards musical examples can be understood through a number of clearly defined exemplification strategies, applied thematically across his output to a range of exemplary contexts. The investigations of Chapters Three, Four, and Five, also considered what musical examples can reveal to the modern reader about the method of engagement with, or motivation for, a particular treatise.

Undoubtedly, the majority of Tinctoris's examples were newly composed to demonstrate specific theoretical points, with many monophonic examples most-likely conceived as a hypothetical Tenor. My study has shown, for the first time, that these examples nearly always present theoretical content in the same order as the text, forging strong text–example relationships that evidence a pedagogical underpinning of all aspects of the work. For this to occur with such consistency across his output, Tinctoris must have either conceived the text and example together, or composed one in response to the other: the examples were clearly viewed as an integral part of the original theoretical whole.

In adopting this approach with such frequency, Tinctoris often facilitates a kind of 'concurrent' reading practice, in which the text and example both play an active role in the formation of the theoretical 'whole'. This would have aided the reader in consulting the notation and text side-by-side, showing a significant evolution from

¹ There are, of course, prints of extracts from some of Tinctoris's works, though these are not from his technical notational treatises.

earlier texts where examples were rather more incidental, or were subject to significant scribal alteration in ways that the text was not.²

The degree to which Tinctoris's examples are instructionally useful varies from case to case, but it is clear that a pedagogical logic runs throughout each of his examples. In using so many musical examples of reasonable length to demonstrate specific points in his texts, Tinctoris situates his theoretical discussions within 'realistic' scenarios that a reader might encounter in musical practice, forging links between graphical definition, theoretical understanding, and real musical practice.

Indeed, such links are taken a step further in the types of examples examined in Chapters Four and Five. Tinctoris's use of pre-existent citations, often to criticise contemporary notational practices, has been noted by a number of scholars. The practice is, to the best of my knowledge, without a direct precedent in fifteenth-century music theory. However, no detailed study has considered the full implications of Tinctoris's use of this example type, or their function within the context of his strategies of exemplification. Chapter Four has shown that citations of pre-existent compositions often work alongside newly composed foundational examples, such as those discussed in Chapter Three, to form complete pedagogical units of exemplification.

For example, citations feature prominently in the typical three-part exemplification strategy in the more complex parts of *De arte contrapuncti*. The first part centres on 'instantiation', usually through a short monophonic example that defines a precept with little contextual information to 'frame' the point. The second part, especially true of *De contr.*, uses a 'citation' to show erroneous or ambiguous practices apparent in contemporary repertoire related to this point. The third stage of this strategy consists of a more exploratory newly composed miniature, demonstrating the practice outlined in the more straightforward example within the kind of context that the citation points to. Throughout the text, this strategy can take place on both a local level and across the whole treatise structure, showing clear and multilayered pedagogical trajectories.

Tinctoris's use of citations from existing works also shows an implicit recognition of one way that young composers and singers learnt their musical craft. One might infer that such readers engaged closely with the notation of contemporary

² See Elizabeth A. Mellon, *Inscribing Sound: Medieval Remakings of Boethius's De institutione musica*, PhD diss. (University of Pennsylvania, 2012).

compositions in order to emulate the style of the great composers of the age. Tinctoris's apparent desire to prevent students perpetuating the 'errors' of the masters, as explicated in some of his prologues, further supports this inference and evidences the pedagogical logic underpinning his texts.

The final chapter of this thesis examined Tinctoris's more exploratory polyphonic miniature compositions in greater detail. Again, no study has examined these in detail, or considered the theoretical function of these examples and the insights they might provide on reading practice for music theory. These extended miniatures also give an insight into the composition of treatises, with comparisons between the *Proportionale musices* and *De arte contrapuncti* suggesting that the latter treatise was composed with a presentation manuscript in mind, namely V. This knowledge clearly influenced Tinctoris's approach towards musical examples, particularly in the later stages of the treatise on counterpoint, where his approach is much more expansive than in any of his other texts, which pride themselves on economic use of exemplary content.

To conclude, this study has shown that Tinctoris's approaches towards musical exemplarity were built mostly upon models of exemplification that were at least partially established before his time. However, Tinctoris approached exemplification with an unparalleled consistency, and adopted strategies that, from preliminary research, seem to have exerted an influence well into the sixteenth century. This thesis demonstrates the usefulness of a contextual study of musical examples in theoretical texts. A study of music theory as a kind of literature, considering aspects of the text beyond its technical contents, can act as a lens through which our view of medieval and Renaissance music theory becomes significantly enhanced. Such an approach also helps to bridge the gap between theory and practice, and has direct implications for our understanding of the readers of music theory, reading practices for musical notation, and traditions of music theory across the Middle Ages. This thesis therefore offers a new perspective on Tinctoris's notational treatises and establishes an approach that can be applied to many other music treatises, enriching our current, rather hazy, understanding of these texts and their readers, and paving the way for future research.

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