Translating Sound, Then and Now: The Palaeography and Notation of Insular Song, *c.*1150-1300

Samantha Nicole Blickhan

Submitted to Royal Holloway, University of London, for the degree of Doctor

of Philosophy, April 2016

Declaration of Authorship

I, Samantha Blickhan, hereby declare that this thesis and the work presented in it is entirely my own. Where I have consulted the work of others, this is always clearly stated.

Signed: _____

Date: _____ 4 April 2016 _____

Abstract

This thesis provides a detailed examination of the notational forms being used to write insular song in the twelfth and thirteenth centuries, specifically, the notation of 111 songs in British miscellany sources between *c*.1150 and 1300.[1] I frame this examination within a larger examination of music palaeography, tracing the practice from its roots in the Gregorian revival of the nineteenth century to its use in modern scholarship, and showing how a lack of standard practice has resulted in palaeographic methods that often prioritise chronological development.

In light of this methodological deficit, I have created a method of notational palaeography which uses a semiological approach to allow the notation to be examined in its own right, within its original manuscript context, without attempting to create a standard orthography that is unlikely to have existed at the time the songs were written. The method also allows for the examination of a very large number of notational forms, songs, and sources, the results of which can be used to develop a greater understanding of how scribes were writing song during this time period.

Beyond the creation of this method and its application to insular song, I also show how my approach can be used to teach early notation to undergraduate students, using as a case study the course 'The Notation of Medieval Song', which I designed and co-taught in the spring of 2015 at Royal Holloway. The purpose of this case study is to show how using an approach to notational pedagogy that allows for an examination of the notation in its original context—without prioritising editing or transcription—can help students to better understand the complex relationships between sound and visual source material, and the roles both of these elements play in the notation of medieval song.

---

[1] Recently collected and published as *Songs in British Sources c.1150-1300*, Musica Britannica 95, ed. Helen Deeming (London: Stainer and Bell, 2013).

Acknowledgements

determination, and my father, who has passed on to me his love of the written word. My

parents raised me on music; this thesis is for them.

Table of Contents

List of Tables

List of Figures

Abbreviations

BLDM *Digitised Manuscripts*. British Library: bl.uk/manuscripts/

DIAMM *Digital Image Archive of Medieval Music*: diamm.ac.uk

GMO *Grove Music Online. Oxford Music Online.* Oxford University Press: oxfordmusiconline.com.

MB 95 *Songs in British Sources c.1150-1300.* Musica Britannica 95. London: Stainer and Bell, 2013.

PM *Paléographie musicale*. First series, 21 vols. Solesmes and Rome-Tournai: Desclée, 1889-1922.

Manuscript Sigla

Abbreviations are listed in the manner that they are used throughout this thesis. Links to digital images will be provided where available. All image examples throughout this thesis are from digital images unless otherwise stated.

FRANCE

A Arras, Bibliothèque municipale, MS 657
http://bvmm.irht.cnrs.fr/consult/consult.php?reproductionId=19136
NB : Images are b/w microfilm scans

K Paris, Bibliothèque de l'Arsenal, MS 5198
http://gallica.bnf.fr/ark:/12148/btv1b550063912/f1.image

M Paris, Bibliothèque nationale de France, fonds français 844
http://gallica.bnf.fr/ark:/12148/btv1b84192440/f1.image

N Paris, Bibliothèque nationale de France, fonds français 845
http://gallica.bnf.fr/ark:/12148/btv1b6000955r/f1.image

O Paris, Bibliothèque nationale de France, fonds français 846
http://gallica.bnf.fr/ark:/12148/btv1b6000950p/f1.image

P Paris, Bibliothèque nationale de France, fonds français 847
http://gallica.bnf.fr/ark:/12148/btv1b8454673n/f1.image

R Paris, Bibliothèque nationale de France, fonds français 1591
http://gallica.bnf.fr/ark:/12148/btv1b8454668b

T Paris, Bibliothèque nationale de France, fonds français 12615
http://gallica.bnf.fr/ark:/12148/btv1b60007945/f1.image

U	Paris, Bibliothèque nationale de France, fonds français 20050 http://gallica.bnf.fr/ark:/12148/btv1b60009580/f1.image
V	Paris, Bibliothèque nationale de France, fonds français 24406 http://gallica.bnf.fr/ark:/12148/btv1b84386028/f1.image
X	Paris, Bibliothèque nationale de France, nouvelles acquisitions françaises 1050 http://gallica.bnf.fr/ark:/12148/btv1b530003205/f1.image
F-EV 2	Évreux, Bibliothèque municipale, MS lat. 2 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3868
F-EV 17	Évreux, Bibliothèque municipale, MS lat. 17 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=276
F-Pn fr. 25408	Paris, Bibliothèque nationale de France, fonds français 25408 http://gallica.bnf.fr/ark:/12148/btv1b9063366p

GREAT BRITAIN

GB-Ccc 253	Cambridge, Corpus Christi College, MS 253 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3869
GB-Ccc 473	Cambridge, Corpus Christi College, MS 473 https://parkerweb.stanford.edu/parker/actions/page_turner.do?ms_no=473
GB-Cgc 240/126	Cambridge, Gonville and Caius College, MS 240/126 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=4109
GB-Cpc 113	Cambridge, Pembroke College, MS 113 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3870
GB-Cjc E.8	Cambridge, St John's College, MS E.8 (111) http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3871
GB-Cu Add. 710	Cambridge, University Library, Additional 710 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=330 [images for Angelus ad virginem only]
GB-Cu Ff.i.17	Cambridge, University Library, MS Ff.i.17 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=334

GB-Cu Mm.iv.28	Cambridge, University Library, Mm.iv.28 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3873
GB-DOr PE/NBY/MI 1	Dorchester, Dorset Record Office, PE/NBY/MI 1 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=358
GB-Lbl Arundel 248	London, British Library, Arundel MS 248 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=411
GB-Lbl Burney 357	London, British Library, Burney MS 357 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=412
GB-Lbl Cotton Titus A. xxi	London, British Library, Cotton MS Titus A. xxi http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=416
GB-Lbl Harley 322	London, British Library, Harley MS 322 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3874
GB-Lbl Harley 524	London, British Library, Harley MS 524 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=430
GB-Lbl Harley 978	London, British Library, Harley MS 978 http://www.bl.uk/manuscripts/FullDisplay.aspx?ref=Harley_MS_978
GB-Lbl Harley 1717	London, British Library, Harley MS 1717 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3875
GB-Lbl Harley 3775	London, British Library, Harley MS 3775 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3876
GB-Lbl Harley 5393	London, British Library, Harley MS 5393 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=432
GB-Lbl Royal 5 F. vii	London, British Library, Royal MS 5 F. vii http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3867
GB-Lbl Royal 8 A. xix	London, British Library, Royal MS 8 A. xix http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3877

GB-Lbl Royal 12 E. i	London, British Library, Royal MS 12 E. i http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3878
GB-Lbl Sloane 1580	London, British Library, Sloane MS 1580 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=446
GB-Llp 457	London, Lambeth Palace Library, MS 457 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=448
GB-Lma Cust. 1	London, Metropolitan Archives, Corporation of London, MS Cust. 1 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3883
GB-Lpro E 163/22/1/2	London, The National Archives [formerly Public Records Office], E 163/22/1/2 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3879
GB-MAm A. 13	Maidstone Museum, MS A. 13 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3880
GB-Ob Ashmole 1285	Oxford, Bodleian Library, MS Ashmole 1285 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3882
GB-Ob Bodley 79	Oxford, Bodleian Library, MS Bodley 79 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3881
GB-Ob Bodley 343	Oxford, Bodleian Library, MS Bodley 343 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=494
GB-Ob Bodley 937	Oxford, Bodleian Library, MS Bodley 937 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3884
GB-Ob Digby 2	Oxford, Bodleian Library, MS Digby 2 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3885
GB-Ob Douce 139	Oxford, Bodleian Library, MS Douce 139 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=511

GB-Ob Laud misc. 668	Oxford, Bodleian Library, MS Laud misc. 668 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3886
GB-Ob Rawl. D 1225	Oxford, Bodleian Library, MS Rawlinson D 1225 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=539
GB-Ob Rawl. G 18	Oxford, Bodleian Library, MS Rawlinson G 18 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=940
GB-Ob Rawl. G 22	Oxford, Bodleian Library, MS Rawlinson G 22 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3887
GB-Ob Tanner 169*	Oxford, Bodleian Library, MS Tanner 169* http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=888
GB-Occc 59	Oxford, Corpus Christi College, MS 59 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=558
GB-Otc 34	Oxford, Trinity College, MS 34 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3889

IRELAND

IRL-Dtc 432	Dublin, Trinity College, MS 432 http://www.diamm.ac.uk/jsp/Descriptions?op=SOURCE&sourceKey=3890

ITALY

a	Rome, Biblioteca Apostolica Vaticana, Regina 1490

SWEDEN

S-Uu C 233	Uppsala, Universitetsbiblioteket, MS C 233

SWITZERLAND

CH-Sgs Cod. Sang. 390/391	St Gallen, Siftsbibliothek, Cod. Sang. 390/391 http://www.e-codices.unifr.ch/en/csg/0390/bindingA/0/Sequence-1324

Introduction

Songs being written in the twelfth and thirteenth centuries have generally been considered to exist between known major notational periods, in a time of transition, outside the semi-standard frames of orthography offered by neumatic notation and square notation.[2] Square notation has been called 'the most significant graphic change in music script of the Middle Ages', yet the parameters for what constitutes this type of notation, or the reasons for its development, have received little scholarly attention.[3] As recently as 2008, scholars have noted this lack of research, and some recent studies have begun to focus on this 'transitional' period.[4] One such study is Kate Helsen's 'The Evolution of Neumes into Square Notation in Chant Manuscripts', which traces the development of three neume shapes—the virga, the punctum, and liquescence—from 900 to 1500, focusing on three geographic regions: Austria, the Czech lands, and some of Eastern Germany; northern France; and southern Germany and Switzerland.[5] Helsen situates the visual changes (including size) among the emergence of Gothic script, and suggests that 'the distinction between early neumes and square notation is that the latter contains sufficient musical information for a performance by a singer who had not previously memorized the melody'.[6] While this is an important distinction, and one for

---

[2] A survey of palaeographic studies of chant and plainsong notation can be found in section 1.1.i.

[3] For an examination of square notation after 1200, see Diane Droste, 'The Musical Notation and Transmission of the Music of the Sarum Use, 1225-1500', Ph.D. thesis, University of Toronto, 1983. Droste notes in the introduction that, at the time of writing, scholars had 'ignored' later square tradition, instead focusing on plainsong notation of the period up to 1200.

[4] John Haines has noted that 'the development of early square musical script has yet to be described in even the most basic graphic terms', suggesting this is due to scholarly bias 'against late medieval music calligraphy'. Haines, 'From Point to Square: Graphic Change in Medieval Music Script', *Textual Cultures: Texts, Contexts, Interpretation* 3, no. 2 (2008): 30-53; 35. Though Haines and Droste (cited above) seem to have differing views on which period of square notation has been ignored, it is evident that music notation in the twelfth and thirteenth centuries is long overdue for a closer examination.

[5] Kate Helsen, 'The Evolution of Neumes into Square Notation in Chant Manuscripts', *Journal of the Alamire Foundation* 5 (2013): 143-174.

[6] Ibid., 143.

which Helsen provides ample support using images of note forms drawn from an array of manuscripts in the three areas in question, there is much more to be determined from this time period than than simply how or why scribal preference transitioned from neume to square.

The way that certain notational forms were written can be indicative of one scribe's individual perception of sound, and engaging with the notation created by a general community of scribes over a specific geographic and temporal region can help lead to the development of a vocabulary that will enable scholars to discuss notations of this time period in their own right, rather than relegating them to the space between two traditions. Yet the disinclination to discuss a slice of culture as one musical building block leading to another does not mean that its neighbouring standardised orthographies should be dismissed from a discussion of the period. Identification of palaeographical influence as well as the retention and continued use of specific note forms can be useful in the practices of cataloguing and dating, and the ability to draw a connection between one notational form and a similar grapheme existing in a more standard tradition can offer insight into how certain ad hoc visual musical cues might be translated into modern sound, thus eventually creating opportunities for their performance.

Notation in Insular Miscellanies, 1150-1300

In this thesis, I will focus on the notation being used to write insular song in the twelfth and thirteenth centuries. Specifically, I will present an in-depth palaeographic examination of 111 songs from insular miscellany manuscripts between *c*.1150 and 1300. These songs were gathered and edited by Helen Deeming, and recently published as *Songs in British Sources*

c.1150-1300 (henceforth *MB* 95).[7] Until this edition, the songs had not been edited or studied collectively, not only due to their diffusion among sources often containing no other musical material, but also due to the trilingual nature of the written texts (the songs are found in Latin, Middle English, and Anglo-Norman French), as well as a general scholarly preference for research on polyphony over monophony. Deeming's edition is extensive, but she makes a point in the Introduction to note that she has not included a comprehensive palaeographic investigation of these songs, nor has she attempted to reconcile the witnesses to each song in the edition. The existence of Deeming's edition allows me to focus specifically on the notation of these songs, with the knowledge that readers can access the Musica Britannica edition for further historical and social context, as well as transcriptions of all the songs examined in this thesis.

As noted above, this thesis will focus on the notation of the songs found in *MB* 95, which are spread out over 42 different manuscripts and fragments. While all of the sources are thought to have originated in Great Britain, some are currently found in France, Ireland, and Sweden. The majority, however, are still found in British archives. Thirty-eight of the songs have musical concordances, both within and external to the original group of songs. Of the 42 manuscripts which contain these songs, 23 contain multiple songs, not always notated by the same scribe. The songs are overwhelmingly monophonic; only 17 have more than one voice part, including the widely known *Sumer is icumen in*, from *GB-Lbl* Harley 978.

Though the notation varies between the songs, Deeming has noted that most of the songs use Norman neumes as their basic 'vocabulary', and points out that, while extensive studies of this notation from manuscripts in Norman abbeys are readily available, the notation as it was written by insular scribes has been neglected.[8] In his edition of *The Later*

---

[7] Helen Deeming, ed. *Songs in British Sources c.1150-1300*, Musica Britannica 95 (London: Stainer and Bell, 2013).
[8] *MB* 95, xxxv.

Cambridge Songs, John Stevens provided historical context for the use of Norman neumes in England, alongside the traditional insular system and Breton notation, citing Susan Rankin's work on the insular neumatic tradition, which notes that the Norman notation began to gain popularity in the second half of the eleventh century.[9] Stevens writes that, by the late twelfth century, Norman notation was being used wherever Norman influence was dominant, including England, southern Italy, and Sicily.[10]

At this point, the use of certain terms must be clarified: while many of the musical pieces in *MB* 95 are set to poems which are associated with certain genres (most frequently the sequence form), the word 'song' will be used throughout this thesis, following Deeming's use of the word in *MB* 95.[11] The word 'neume' will have a similarly broad interpretation; because the forms used in the miscellanies have been carried over from a neumatic tradition, they retain the Latin names of the neumes from which they originated. I will refer generally to the specific forms as 'neume forms', in an attempt to distinguish the insular forms from earlier, chant-based neumes.[12] The Latin names of these forms will be discussed later in the Introduction, in regard to their use within the miscellany songs (An Explanation of Neume Forms).

---

[9] John Stevens, ed., *The Later Cambridge Songs: An English Song Collection of the Twelfth Century* (Oxford and New York: Oxford University Press, 2005), 20. Stevens cites Susan Rankin, 'From Memory to Record: Musical Notations in Manuscripts from Exeter', *Anglo-Saxon England* 13 (1984): 97-112; 97.

[10] Ibid.

[11] Because the songs in *MB* 95 have no explicit liturgical designation (even though many of them may very well have been used liturgically), Deeming chooses to call them 'songs' in order to recognise the possibility that they were being used for non-liturgical purposes. For further discussion of the scope of the edition, see *MB* 95, xxvii-xxix.

[12] The word 'neume' has its own history of vocabularic confusion. For discussion of the term's various historical uses, see David Hiley, *Western Plainchant: A Handbook* (Oxford: Clarendon Press, 1993), 345-6.

Historical Roots and Modern Techniques

Though the topic of this thesis is musical notation from the twelfth and thirteenth centuries, much of the focus will be on the methods used to carry out such studies, both in regard to historical practice, and modern approaches to the discipline. Because palaeography is not a music-specific discipline, it is important to examine the influence of language-based practices on non-linguistic subject matter, and to discuss the effects this influence may have had on the discipline of music palaeography. To this extent, my approach to the songs of *MB* 95 will not be based in traditional palaeographic methods; instead, I have developed my own approach to music palaeography, partially inspired by studies of semiotic theory. Because of the large amount of primary sources I am using for my research, the majority of my work has been carried out using digital surrogates (although I have endeavoured to see physical manuscripts whenever possible). Because access to digital images of manuscripts has become relatively commonplace, it is necessary to frame modern palaeographic examination within the parameters of digital research culture, and this thesis is no exception. The lack of definite parameters for undertaking such research on musical sources was the impetus for this thesis's methodological focus. In addition to the lack of a standardised research methodology, there is a concomitant lack of scholarship in regard to the teaching of such methodologies within institutions of higher education, especially when integrating digital techniques into the examination of musical source material. Because of this lack of dedicated scholarship, part of this thesis will involve the integration of a palaeography-specific research method into the practice of musicological pedagogy at an undergraduate level, specifically with a focus on teaching the notation of medieval music.

Synopsis of Thesis

This thesis will provide an in-depth examination of the notation being used to write song in insular miscellanies between 1150 and 1300. I will frame the notational study within a newly-designed methodology, influenced by studies of semiotics, that I argue can be applied to both research on, and the teaching of, early music.

In the first chapter, I will provide foundational material for the content of this thesis. The first section will include a critical overview of palaeography within the field of musicology, specifically its use by musicologists while preparing critical editions of early music. The chronological examination will begin with its use in the nineteenth-century revival of Gregorian chant, specifically by the monks of Solesmes, and continue through to its use in current scholarship, both in preparing facsimile editions, and using digital resources to carry out palaeographic research on medieval music. The second section will examine the ways that studies of musical palaeography are influenced by studies of other writing systems, including studies of written language as well as studies of non-linguistic writing. I will explore the concept of 'notation' in its relationship to these studies, and examine the application of such non-musical studies to medieval music notation. The third section of Chapter One will examine the relationship between music and semiotics, first focusing on the presence of notation within the field of semiotics, and existing semiotic studies of music notation, before laying out my own semiotic framework for the study of medieval music notation. Finally, I will examine the quantitative palaeographic methodologies that inspired this framework, and the ways in which I will apply this method to the notation examined in Chapters Two and Three.

Chapter Two will provide extensive palaeographic data on the songs of *MB* 95. In the first section, I will explain the parameters of my palaeographic investigation, as well as the ways in which I have applied the methodology laid out in Chapter One to the process of data

6

collection and analysis. The second section will present palaeographic data by neume form, integrating visual examples taken from digital images of the manuscripts from which these songs are taken. The third section will present palaeographic data as well, but with a focus on non-notational forms.

The third chapter of this thesis will examine a selection of concordances with the songs of *MB* 95, using the semiotically-inspired 'macro-palaeography' method presented in Chapter One and used in Chapter Two. The intent of this chapter is to show how this method can be applied to the study of palaeography at the level of entire songs, rather than just the examination of specific notational forms. Another purpose of my examination of concordances is to see what palaeographic information can be obtained from the study of larger networks of song, and to develop a greater understanding of the relationship between notational palaeography and a song's transmission over geographical distance. I will first discuss the concordances with the songs of *MB* 95, and explain my reasons for choosing to examine specific concordances within this chapter. The following three sections will present comparative notational data and analyses of three different groups of concordances with the songs of *MB* 95: concordances within the original group of miscellany songs, concordances found in *GB-Cu* Add. 710 ('The Dublin Troper'), and concordances found in sources of trouvère song.

The final chapter will return to a methodological focus, and discuss the application of the methodology laid out in Chapter One (and applied in Chapters Two and Three) to the practice of teaching medieval notation at the undergraduate level. In order to carry out this examination, I will use as a case study an undergraduate course at Royal Holloway called 'The Notation of Medieval Song'. I developed and taught this course in the spring term of 2015, along with my supervisor, who acted as the course convener and lecturer for the term. The first section of the chapter will provide foundational material in order to situate this

course within educational theory, as well as current practices in notational pedagogy, including examples of applied digital musicology within a classroom setting. The second section will detail the design of the course, including desired learning outcomes and course goals, a discussion of the digital tools used throughout the term, and a breakdown of the weekly course structure. The third section will discuss the methods of assessment used within the course, including types of feedback that were offered, before revisiting the course goals to assess the success of my application of these methods, and to identify any potential weaknesses within the course's structure that should be revised.

Before moving on to the foundational material in Chapter One, I will first offer an explanation of the note forms that will be discussed in this thesis, including their historical context, and some general visual attributes of each form. This section will be intended to function as a type of glossary, to give the reader a definite visual context for the vocabulary being used throughout this thesis.

An Explanation of Neume Forms

As noted above, the notational forms used to write insular song in the twelfth and thirteenth centuries have been carried over from Western chant tradition. This section will introduce the neume forms that will be discussed in this study. The main palaeographic discussion will be found in the main body of the text, specifically in Chapter Two, but this section has been

included in order to clarify the vocabulary that will be used throughout this thesis, and avoid confusion resulting from the use of a shared terminology.[13]

For each form, a table will be provided with a range of examples, taken from the songs examined in this thesis. The examples have been included to provide visual reference for the forms being discussed, and show a range of scribal interpretations of each form.

Single-Pitch Neumes: The Punctum and Virga
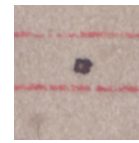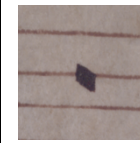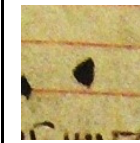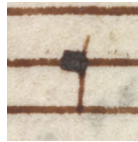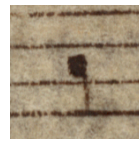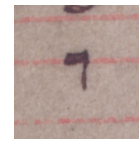
	GB-Lbl Burney 357, f.15v	*GB-Lbl* Sloane 1580, f.157	*GB-Lbl* Arundel 248, f.154v	*GB-Ob* Bodley 343, f.x_v	*GB-Ob* Douce 139, f.179v	*GB-Lpro* E 163/22/1/2 [single leaf]
Punctum						
Virga						

Table 1: Examples of single-note forms found within the same song, from songs collected in *MB* 95.

The single-note depicting punctum and virga forms have been called the building blocks of neumatic systems of music-writing. The virga—from Latin for 'staff' or 'rod'—was traditionally used in pre-staff notational systems to represent pitches that were higher than the

---

[13] See section 2.2. General studies on neume forms (specifically their historical use within the chant tradition) include Eugène Cardine, 'Sémiologie grégorienne', *Études grégoriennes* 11 (1970), 1-158; Edmond de Coussemaker, *Histoire de l'harmonie au moyen âge* (Paris: V. Didron, 1852), esp. Chapter Two, 'Origin des neumes'; Solange Corbin, *Die Neumen*, Palaeographie der Musik 1/iii (Cologne: Volk-Verlag, 1977); David Hiley, *Western Plainchant: A Handbook*, esp. Chapter Four; Helmut Hucke, 'Toward a New Historical View of Gregorian Chant', *Journal of the American Musicological Society* 33 (1980): 437-67, esp. 445-50; and Michel Huglo, 'Les noms des neumes et leur origine', *Études grégoriennes* 1 (Solesmes: Abbaye Saint-Pierre de Solesmes, 1954), 53-67; Carl Parrish, *The Notation of Medieval Music* (New York: W. W. Norton and Company, 1957); and Don Michael Randel, ed., 'Neume', *The Harvard Dictionary of Music*, 4th ed. (Cambridge, MA and London: The Belknap Press of Harvard University, 2003), 559-61. Huglo also compiled a review of literature examining the origin of neumes: 'Bilan de 50 années de recherches sur les notations musicales de 850 à 1300', *Acta musicologica* 62 (1990): 224-59.

surrounding pitches.[14] Alternatively, the punctum—Latin for 'point'—represented a single pitch that was low, or lower than the surrounding pitches, though it has been suggested that its use in the chant tradition also included repeated notes following a virga.[15] It has been suggested that these symbols may have developed from acute and grave accent marks, though whether or not the symbols are directly related to accent marks is contested within the field.[16] As will be shown in section 2.2.i of this thesis, the scribes of the songs in *MB* 95 demonstrate a preference for the virga form (some eschewing the punctum entirely). While at times some scribes appear to follow the general formula of using virgae for higher and puncta for lower notes, the practice is not applied consistently, and therefore could just as likely be the result of coincidence.

The virga, distinguished from the punctum by its stem or descender (to the right of the note-head), is typically made using a two-stroke movement wherein the scribe uses the flat side of the pen nib to write the square 'head', and then uses the pen edge to make the vertical stem. The meeting of the note-head and stem can at times be misaligned (as shown above, in the examples from *GB-Ob* Burney 357 and *GB-Lbl* Sloane 1580). Further discussion of the palaeographic specificities can be found in section 2.2.i.

---

[14] 'Virga', *GMO,* Oxford University Press, http://www.oxfordmusiconline.com/subscriber/article/grove/music/29491, accessed 7 March 2016.

[15] David Hiley, 'Punctum', *GMO*, Oxford University Press, http://www.oxfordmusiconline.com/subscriber/article/grove/music/22552, accessed 6 March 2016. For further reading on the virga and punctum forms, see Diane Droste, 'The Musical Notation and Transmission of the Music of the Sarum Use, 1225-1500', esp. 14-19; Constantin Floros, *Introduction to Early Medieval Notation*, Enlarged Second Edition. Revised, translated and with an illustrated chapter on cheironomy by Neil K. Moran (Warren, Michigan: Harmonie Park Press, 2005); and Andrew Hughes, *Medieval Manuscripts for Mass and Office: A Guide to their Organization and Terminology* (Toronto, Buffalo, and London: University of Toronto Press, 1982), 110.

[16] Droste, 'The Musical Notation and Transmission of the Music of the Sarum Use, 1225-1500', 14. Charles Atkinson presents contrasting viewpoints in regard to scholars' interpretation of Aurelian of Réôme's use of grammatic terminology in his ninth-century treatise *Musica disciplina*: Jacques Handschin believed that Aurelian was using these terms to describe Paleofrankish neumatic notation, while Ernst Waeltner was of the opinion that the grammatical terms describe 'the movement of the voice in chant'. Charles M. Atkinson, *The Critical Nexus: Tone-System, Mode, and Notation in Early Medieval Music* (Oxford: Oxford University Press, 2009), 105.

The stemless punctum is found in a range of shapes (all of which will be discussed in section 2.2.ii), from casual forms such as the example from *GB-Ob* Burney 357 (shown in Table 1), to the more clearly oblique puncta shown in the example from *GB-Ob* Douce 139.

Beyond the existence of the virga and punctum as visual indicators of single pitches, Treitler has suggested that all other neumes in the repertory are compounds of these two 'basic neumes'.[17] While Treitler's concept may allow for a more 'structured' system of analysing and describing songs written with borrowed neumatic notation, it will not be applied in this study, although the suggestion of using single-note forms as building blocks will be discussed further in section 2.2.xi.

Two-Pitch Neumes: The Pes
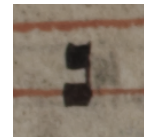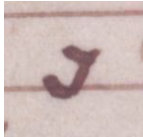
	GB-Cgc 240/126, p.4	*F-EV* 17, f.156r	*GB-Lbl* Harley 524, f.63r	*GB-Ob* Bodley 343, f.xr	*GB-Ob* Digby 2, f.5r	*GB-Lbl* Arundel 248, f.155r
Pes						

Table 2: Examples of the pes form, from songs collected in *MB* 95.

The pes form—Latin for 'foot', but also called podatus, from the Greek word for 'foot', as well—represents movement from a lower pitch to a higher, typically in stepwise motion, though there are at times exceptions to this rule (such as a pes that represents an upward leap of a third).[18] The form is made of two square or slightly rectangular note-heads stacked on

---

[17] Leo Treitler, 'The Early History of Music Writing in the West', in *With Voice and Pen: Coming to Know Medieval Song and How It Was Made* (Oxford, Oxford University Press: 2003), 338.

[18] The name 'pes' here refers to the note-form, and should not be confused with the untexted, non-Gregorian tenors found in some thirteenth-century motets (though the pes technique is famously found in one song in *MB* 95, *Sumer is icumen in*). 'Pes (ii)', *GMO*, Oxford University Press, http://www.oxfordmusiconline.com/subscriber/article/grove/music/21403, accessed 12 March 2016.

top of one another, and connected on the right-hand side by a vertical (albeit sometimes slightly slanted) line.

Two-Pitch Neumes: The Clivis
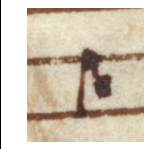
	GB-Cgc 240/126, p.8	*GB-Ccc* 253, f.140v	*GB-Lbl* Harley 524, f.63r	*GB-Lbl* Sloane 1580, f.156v	*GB-Lma* MS Cust. 1, f.160v	*GB-Ob* Douce 139, f.179v
Clivis						

Table 3: Examples of the clivis form, from songs collected in *MB* 95.

The clivis form represents a move from a higher pitch to a lower pitch, and its motion is mostly stepwise, though (as in the case of the pes form) there are exceptions to this characteristic movement, such as downward motion of a third, as in the example above from *GB-Ob* Douce 139. The Latin origin of the word is translated as 'slope', which may be a reference to the downward motion of the form. The clivis is typically drawn as two distinct note-heads (the first of which is higher than the second), with a stem on the left-hand side of the form. At times, this form is referred to as the 'flexa', likely related to the accent circumflex, from which Hiley suggests the form was derived.[19] As with the single-note forms above, the clivis will be discussed at length in Chapter Two of this thesis, in section 2.2.iv.

---

[19] Droste refers to this form as the 'flexa' in 'The Musical Notation and Transmission of the Music of the Sarum Use, 1225-1500' (22-25). In the Grove article, Hiley uses 'clivis' as the title, but lists 'flexa' among alternative names for the form: Hiley, 'Clivis', *GMO*, http://www.oxfordmusiconline.com/subscriber/article/grove/music/05977, accessed 14 March 2016.

Three-Pitch Neumes: The Torculus
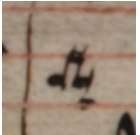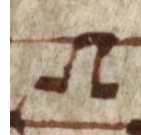
	GB-Cgc 240/126 p.4	*F-EV* 2, f.4r	*F-EV* 17, f.157r	*GB-Lbl* Burney 357, f.15v	*GB-Lma* MS Cust 1, f.160v	*GB-Ob* Laud Misc. 668, f.101r
Torculus						

Table 4: Examples of the torculus form, from songs collected in *MB* 95.

The torculus is a three-note form in which the second note is higher than the first and third. In the songs of *MB* 95 it is most frequently written with the second note either a tone or semitone up from the first note, and returning to the same pitch for the third note; all of the examples in Table 4 follow this formula with the exception of the final image. Hiley notes that the form is sometimes referred to as the 'pes flexus' because the first two notes are ascending (like the pes form, discussed above) and then move downward.[20] Like the clivis and pes, this form is primarily composed of square note-heads that are joined together by thin vertical lines.

Three-Pitch Neumes: The Porrectus
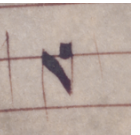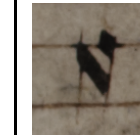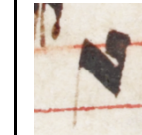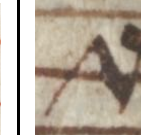
	GB-Cgc 240/126 p.4	*GB-Ob* Douce 139, f.5r	*GB-Lbl* Arundel 248, f.154v	*F-EV* 17, f.3r	*GB-Occc* 59, f.114r	*GB-Llp* 457, f.192r
Porrectus						

Table 5: Examples of the porrectus form, from songs collected in *MB* 95.

---

[20] Hiley, 'Torculus', *GMO*, Oxford University Press, http://www.oxfordmusiconline.com/subscriber/article/grove/music/28155, accessed 12 March 2016. For an extensive study of tenth-century notations and rhythmic interpretation based around a specific use of this form, see Columba Kelly, *The Cursive Torculus Design in the Codex St Gall 359 and its Rhythmical Significance: A Paleographical and Semiological Study* (St. Meinrad, IN: Abbey Press, 1964).

The porrectus form is, in a sense, the inverse of the torculus: three notes, but with the second note lower than the first and third. Like the torculus, in the songs of *MB* 95 it is often used to represent stepwise descending motion before ascending again to the pitch at which the form originated. The form is sometimes called 'flexus resupina', as it first descends, and then moves upward.[21] Typically, the form is written with a left-hand stem, the top of which meets the uppermost point of a thick, diagonal line (which resembles a ligature in later mensural notation). The diagonal descends to the right, and the lowest point is connected to a higher note-head by a thin, vertical line.

Three-Pitch Neumes: The Climacus
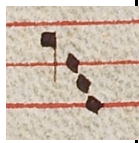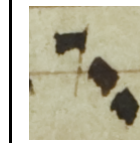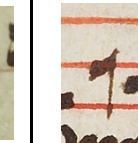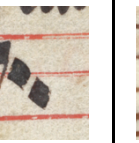
	GB-Otc 34, f.151v	*F-EV* 17, f.156r	*GB-Lma* MS Cust 1, f.160v	*GB-Ob* Laud Misc. 668, f.103r	*GB-Lbl* Harley 978, f.11r	*GB-Lbl* Sloane 1580, f.156v
Clima cus						

Table 6: Examples of the climacus form, from songs collected in *MB* 95.

The term climacus, though often used as a general term which includes all three-note descending neume forms, will be used in this thesis to specifically refer to the style of three-note descending form that is shown in Table 6. Though a single form in itself, the climacus is visually composed of a virga and two puncta, though as shown above the number of puncta can vary. The name 'climacus' comes from the Greek 'klimax', or 'ladder'.[22]

---

[21] 'Porrectus', *GMO*, Oxford University Press, http://www.oxfordmusiconline.com/subscriber/article/grove/music/22127, accessed 15 March 2016.
[22] David Hiley, 'Climacus', *GMO*, Oxford University Press, http://www.oxfordmusiconline.com/subscriber/article/grove/music/05968, accessed 16 March, 2016.

Three-Pitch Neumes: The Extended Clivis
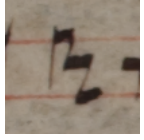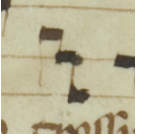
	GB-Cgc 240/126 p.4	*F-EV* 2, f.3r	*GB-Lma* MS Cust 1, f.160v	*GB-Ob* Laud Misc. 668, f.101v	*GB-Lbl* Arundel 248, f.155r	*GB-Lbl* Arundel 248, f.153v
Extended Clivis						

Table 7: Examples of the extended clivis form, from songs collected in *MB* 95.

The 'extended clivis' is the name given to the three-note descending form that is made up of square note-heads connected by a thin, vertical line. The term is not commonly used; it is limited to this thesis and to the DIAMM-hosted companion project to *MB* 95, *Sources of British Song, 1150-1300*.[23] The name comes from the form's resemblance to the clivis, discussed above. The extended clivis typically has a stem to the left of the first note-head. Like the climacus, the extended clivis can be used to represent more than three pitches, and can also be used to represent non-stepwise motion. The uses of the extended clivis will be discussed further in section 2.2.v.

Three-Pitch Neumes: The English Conjunctura
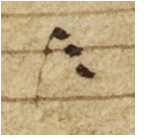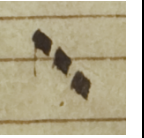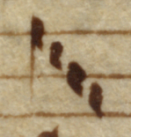
	GB-Cu Mm.iv.28, f.149f	*GB-Ob* Douce 139, f.179v	*GB-Lma* MS Cust 1, f.160v	*GB-Lbl* Arundel 248, f.153v	*GB-Lbl* Harley 978, f.10v	*GB-Lbl* Royal 8 A. xix, f.6r
English Conjunctura						

Table 8: Examples of the English conjunctura form, from songs collected in *MB* 95.

---

[23] *Sources of British Song, 1150-1300*. Project Manager: Helen Deeming, Project Assistant: Samantha Blickhan, http://www.diamm.ac.uk/resources/sbs/, accessed 15 March 2016.

The term 'English conjunctura' is derived from its supposed geographic origin, though, as scholars have noted, its use is not unique to insular sources (though it is often associated with traditionally 'English' sources such as the Worcester Fragments and the eleventh fascicle of Wolfenbüttel 677). The main visual difference between the English conjunctura and the climacus is in the initial virga: the stem is written to the left of the note-head (rather than the right), and the note-head typically has a downward slant, following the direction of the descending puncta. The form is acknowledged by Anonymous IV, who writes that 'there is a certain *elmuarifa*, which can be called irregular, which has a line descending on the left side, as the English write it or notate it'.[24] Anonymous IV is the only theorist to describe the form as English, though it is also mentioned by Lambertus and the Anonymous of St Emmeram, who give the figure a specific rhythmic interpretation.[25] Traditionally, the 'conjunctura' is made of a single note (or ligature) followed by a series of descending puncta (the *GMO* entry suggests that this series could include between two and seven diamond-shaped notes), and came into greater use in polyphonic sources in the thirteenth and fourteenth centuries.[26]

---

[24] Jeremy Yudkin, ed. and trans., *The Music Treatise of Anonymous IV: A New Translation*, Musicological Studies and Documents 41 (Rome: American Musicological Society, 1985), 164. Further discussion of this passage, particularly the use of the terms *elmuahim* and *elmuarifa* to describe rhomboid note heads, can be found in Charles Burnett, 'The Use of Geometrical Terms in Medieval Music: elmuahim and elmuarifa and the Anonymous IV', *Sudhoffs Archiv* 70, no 2 (1986): 198-205.

[25] Gordon A. Anderson, 'The Notation of the Bamberg and Las Huelgas Manuscripts', *Musica Disciplina* 32 (1978): 19-67; 39. Further discussion of the English conjunctura and its mentions in these treatises (especially the rhythmic interpretation) can be found in Nicola Losseff, 'Insular Sources of Thirteenth-Century Polyphony and the Significance of Notre Dame', Ph.D. thesis, King's College, London (1993), 115-17.

[26] 'Coniunctura', *GMO*, Oxford University Press, http://www.oxfordmusiconline.com/subscriber/article/grove/music/06294, accessed 16 March 2016.

Three-Pitch Neumes: The Scandicus
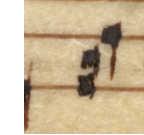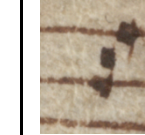
	GB-Ob Douce 139 f.5r	*GB-Ob* Digby 2, f.5r	*GB-Lbl* Harley 978, f.11r	*GB-Lbl* Sloane 1580, f.157v	*GB-Llp* 457, f.192r	*GB-Ob* Bodley 79, f.53v
Scandicus						

Table 9: Examples of the scandicus form, from songs collected in *MB* 95.

The scandicus—from Latin 'scandere', meaning 'to ascend'—is the three-note ascending form.[27] As will be noted in section 2.2.vi of this thesis (and which can be seen above, in Table 9), the form's construction is quite varied. It is less commonly used in the songs of *MB* 95 than the three-note descending forms.

Liquescent Neumes: The Epiphonus
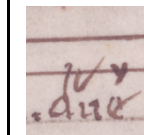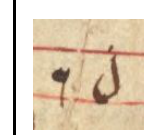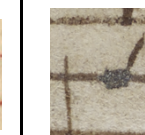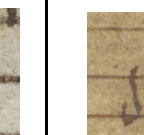
	GB-Lbl Harley 978, f.8r	*GB-Lbl* Arundel 248, f.154r	*GB-Ob* Bodley 343, f.x_r	*GB-Lbl* Harley 5393, f.80v	*GB-Cgc* 240/126, p.4	*GB-Lbl* Royal 8 A. xix, f.71v
Epiphonus						

Table 10: Examples of the epiphonus form, from songs collected in *MB* 95.

The epiphonus form is typically written like a modern tick mark, with a thicker, lower 'body' that tapers as it rises. Liquescent forms are commonly thought to be comprised of two sounds: the first is a core 'note', and the second a vocal production (possibly 'semi-vocalised') that is not as definite as a separate note in itself, but that is distinct enough to

---

[27] 'Scandicus', *GMO*, Oxford University Press, http://www.oxfordmusiconline.com/subscriber/article/grove/music/24699, accessed 18 March 2016.

merit inclusion and examination.[28] The term 'epiphonus' supports this reading: it is of Greek origin, meaning 'one sound on another'.[29] The vague definition (both for this form, as well as for liquescence in general) is apt, given the lack of explicit information that modern scholars have about how liquescent forms may have sounded in performance. There does seem to be a set of requirements for its original use in plainchant notation and performance. Building on the scholarship of Mocquereau and Freistedt, David Hiley has suggested that liquescent neumes 'involved the singing of an extra note to accommodate a change of syllable in the text. Liquescent notes are not found where there is no change of syllable'.[30] Timothy McGee suggests that the term 'liquescent' refers to a sound variant, noting that Guido of Arezzo (in *Micrologus*, 1028) describes the liquescent as a 'gliss' between two solid pitches, and also notes that the liquescent is only applied to 'specific consonants and vowels and to certain intervals'.[31] In the songs of *MB* 95, the epiphonus form is used much less often than its descending counterpart, the cephalicus.

---

[28] David Hiley, 'Epiphonus', *GMO*, Oxford University Press, http://www.oxfordmusiconline.com/subscriber/article/grove/music/08887, accessed 15 March 2016.
[29] Ibid.
[30] David Hiley, 'The Plica and Liquescence', in *Gordon Athol Anderson (1929-1981) in memoriam: Von seinen Studenten, Freunden und Kollegen,* Musicological Studies 49 (Henryville, PA: Institute of Medieval Music, 1984), 2:379-91; 381.
[31] Timothy J. McGee, '"Ornamental" Neumes and Early Notation', *Performance Practice Review* 9, no. 1 (1996): 39-65; 44-47. McGee provides the full quote from *Micrologus* (as well as a translation), and also lists further studies on liquescence, including Heinrich Freistedt, *Die liqueszierenden Noten des gregorianischen Chorals*, Veröffentlichungen der gregorianischen Akademie zu Freiburg, Heft 14 (Freiburg, 1929); Johannes B. Göschl, *Semiologische Untersuchungen zum Phänomen der gregorianischen Liqueszenz: Der isolierte dreistufige Epiphonus praepunctus, ein Sonderproblem der Liqueszenzforschung*, 2 vols., Forschungen zur ältern Musikgeschichte 3 (Vienna, 1980); and Andreas Haug, 'Zur Interpretation der Liqueszenzneumen', *Archiv für Musikwissenschaft* 50 (1993): 85-100.

Liquescent Neumes: The Cephalicus
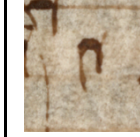
	F-EV Lat. 17, f.157r	*GB-Ob* Douce 139 f.179v	*GB-Ob* Bodley 343 f.x_v	*GB-Ob* Laud Misc. 668, f.101v	*GB-Ob* Laud Misc. 668, f.103r	*GB-Lbl* Burney 357, f.15v
Cephalicus						

Table 11: Examples of the cephalicus form, from songs collected in *MB* 95.

As noted above, the cephalicus is the descending liquescent form.[32] Similar to the epiphonus, it typically covers a two-note span (though the status of the second pitch as a 'note' is to be determined, as described above). As shown in Table 11, there are several different ways that scribes wrote this form, all of which will be discussed at length in section 2.2.ix. Though it varies between scribes, the form typically consists of an initial, thicker body, which tapers into the lower, second 'note'. At times, the term 'plica' is used to describe liquescent forms: though the two terms may have been synonymous in the Western chant tradition, there is another type of plica, used in Parisian polyphonic works of the early thirteenth century, that had no liquescent function, and instead implied rhythmic distinction (and often an additional note at certain intervals).[33]

---

[32] Information on the cephalicus form can be found in the references listed above for the epiphonus, as well as in 'Cephalicus', *GMO*, Oxford University Press, http://www.oxfordmusiconline.com/subscriber/article/grove/music/05290, accessed 15 March 2016.

[33] John Stevens uses the term 'plica' in his edition of *The Later Cambridge Songs* (14); for further information on the plica, see David Hiley, 'Plica', *GMO*, Oxford University Press, http://www.oxfordmusiconline.com/subscriber/article/grove/music/21942, accessed 18 March 2016; as well as Hiley, 'The Plica and Liquescence'.

Other Neumes: The Wave Note
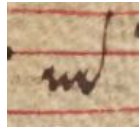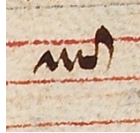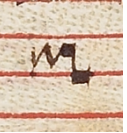
	GB-Lbl Harley 5393, f.80v	*GB-Lbl* Sloane 1580, f.152v	*GB-Lbl* Arundel 248, f.153v	*GB-Lbl* Arundel 248, f.154r	*GB-Otc* 34, f.152r	*GB-Otc* 34, f.152v
Wave Note						

Table 12: Examples of the wave note, from songs collected in *MB* 95.

The term 'wave note' was first used by John Stevens in *The Later Cambridge Songs*, noting that the term had been created for the context of that publication, and describing the form as 'a horizontal note with two or three points and quite often a tail to the right' (though he also notes that '[c]olloquially, it might be called a squiggle').[34] Stevens notes that, in the context of the songs in Ff.i.17(1), the form can be 'a single pitched neume, or it can appear as part of a compound neume in an initial, final, or (most often) medial position'.[35] The wave notes found in the songs of *MB* 95 can similarly be used in various contexts, as will be shown in section 2.2.x. Like the liquescent forms, the wave note is particularly elusive when it comes to scholarly attempts to determine how it may have sounded in performance. Stevens suggests possible similarities with portamento and tremolo, as well as liquescence, lengthening, and reiteration.[36] The visual structure of the wave note is similar to the quilisma (from the Greek, 'a rolling'), though the wave note does not carry the same requirements of use as the quilisma, which is typically used between two notes a third apart from one another.[37]

---

[34] Stevens, *The Later Cambridge Songs*, 14.
[35] Ibid.
[36] Ibid., 15.
[37] David Hiley, 'Quilisma', *GMO*, Oxford University Press, http://www.oxfordmusiconline.com/subscriber/article/grove/music/22699, accessed 17 March 2016.

Other Neumes: Compound Forms
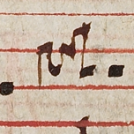
	GB-Cjc E.8, f.106v	*GB-Ob* Bodley 79, f.54r	*GB-Otc* 34, f.153v	*GB-Ob* Laud Misc. 668, f.101r	*GB-Lbl* Arundel 248, f.153v	*S-Uu* C 233, f.51r
Compound						

Table 13: Examples of compound forms, from songs collected in *MB* 95.

Compound neume forms refer to the ad-hoc combination of existing forms, as well as the practice of stringing together square note-heads to create forms made up of four or more notes. The various compound forms used in the songs of *MB* 95 (as well as the manner in which they were being constructed and written) will be discussed at length in section 2.2.xi.

Chapter One: Theoretical Foundations of Palaeography and Notation

Introduction: Sound and Vision

The aim of this thesis is to investigate the relationship between sound and its visual representation, specifically in the notation of song from insular sources in the twelfth and thirteenth centuries. This chapter will set out my intent to further the palaeographic study of notation beyond a simple process of cataloguing graphemes into categories of 'forms' and 'variants'. The existing cataloguing method is problematic in general, as will be discussed further in this chapter, but is especially unhelpful in relation to miscellany sources. A stand-alone instance of musical notation in a miscellany may not have been held to the same regulations and writing standards as the notation found in a manuscript intended for musical content throughout. While a scribe writing in a miscellany may have possessed the authority to use ad-hoc notational forms, this does not disregard the possibility of the same ad-hoc forms being used by multiple scribes, and even sharing functions within the larger 'system' of notating song in twelfth- and thirteenth-century Britain.

In order to decipher any sort of systemic characteristics of the notation used to write out insular song between 1150 and 1300, it is necessary to examine the musical contexts in which certain visual forms of notation were being used. For modern researchers, the practice of cataloguing mentioned above typically consists of creating visual tables that categorise note forms based on their visual qualities. This practice can be helpful, as it allows researchers to quickly access a range of information about which types of visual forms are being used to represent certain musical patterns. This method is commonly used to compare notational forms across a range of regions, time periods, and/or sources, and can be useful in attempts to date a manuscript or to identify a particular scribal hand. Comparative tables such

as the examples shown in Figures 1, 2, and 3 allow for the quick and effective representation,

identification, and cross-comparison of specific neume forms.

Figure 1: Treitler's representation of characters in geographically-based neumatic scripts.[38]

Figure 2: Pothier's table of neume forms (1).[39]

[38] Leo Treitler, 'The Early History of Music Writing in the West', 336-7.
[39] Dom Joseph Pothier, *Les mélodies grégoriennes: d'après la tradition* (Tournai: Desclée, Lefebvre et Cie, 1881), 38.

23

Figure 3: Pothier's table of neume forms (2).[40]

These figures show two methods of palaeographic representation: in Figure 1, Leo Treitler is

comparing specific forms (horizontal axis: virga, punctum, &c.) across fourteen different

styles of neumatic notation, named for their regional use (vertical axis). In Figures 2 and 3,

Dom Joseph Pothier (whose role in the history of musical palaeography will be discussed

further in section 1.1.i) presents neumatic notation in its visual representation as it relates to

chronology; he separates the different forms as Treitler does, but rather than comparing

different notational styles, he is tracking the visual differentiation of a single, much more

generalised representation of early notation ('Notation Latine') from the eighth through

nineteenth centuries (vertical axis).

Since one aim of this thesis is to discern not only how regularly specific forms were

used, but also to discern the manner in which scribes were using such forms, the practice of

cataloguing the visual distinction between forms (as used in Figures 1, 2, and 3) does not

provide sufficient information in order to make an informed statement about the writing

---

[40] Ibid.

24

system as a whole. The tables rely on the identification (or creation) of single, 'standard' forms that represent <u>all</u> such forms within a given time period or geographic region. The notation examined in this thesis is at times so variable that any attempt to construct such a presentation would be dubious, if not impossible[41]; to analyse this notation, another method must be developed.

This chapter will offer examples of how palaeography has been traditionally used by musicologists, as well as ways in which those methods have been adapted over time. The methodology used for the palaeographic studies in Chapters Two and Three of this thesis will reach beyond a visual comparison and allow context to factor into the examination. Therefore, another purpose of this chapter will be to offer a semiotic interpretation of music notation as a writing system, in order to provide a theoretical context for the palaeographic method used. A semiotic interpretation allows for the retention of cultural context as well as musical and written contexts, including the aforementioned issue of human engagement in the form of scribal authority.

I will begin this chapter with an introduction to techniques of palaeography as applied to the study of music manuscripts and notation (1.1), followed by an examination of the presence of music notation in regard to other writing systems, both linguistic and non-linguistic (1.2). The final section will introduce the relationship between music writing and semiotics (1.3) in regard to notation's presence within studies of semiotics, as well as in semiotic studies of music notation, before leading to a discussion of my own semiotic framework for analysis, and other useful comparative palaeographic methodologies.

---

[41] The tables used in the Introduction to this thesis were partially intended to show this variability between forms.

1.1: Palaeography in Musicology: An Overview

In order to conduct a semiotically-informed analysis of a palaeographic study of medieval music notation, parameters must be set so that the boundaries of such a process may be determined. This section of the chapter will present an historical view of musical palaeography in order to better place the methodology used in this thesis within the larger existing tradition.

Musical palaeography is the study of notation written in music manuscripts. Like any other type of palaeography, the focus is on handwriting, but musical palaeography differs from textual palaeography in that it lacks standardisation in regard to methodology. There is very little existing scholarship that can be used to learn the process of 'doing musical palaeography', though it is something scholars working with early notations are regularly expected to apply to their work. As John Haines pointed out in 2004, there is no entry for musical palaeography in the *New Grove Dictionary of Music*.[42] This is true in theory: the *Grove* dictionary does not include an entry for palaeography, though a search of *Oxford Music Online* will produce the *Oxford Companion to Music* entry for 'palaeography', which defines the practice as 'the study of ancient and medieval handwriting', noting that it is 'useful in music' and the process of manuscript study.[43] No textbooks or handbooks currently exist to be used for the teaching of musical palaeography, and very few studies have been published that are dedicated solely to the palaeographical study of music notation (the exceptions will be discussed later in this chapter), yet palaeography is still somehow ubiquitous in all studies involving notation in musical manuscripts. This section is not intended to suggest that the field of music palaeography has no standard practice whatsoever,

---

[42] John Haines, 'Erasures in Thirteenth-Century Music', in *Music and Medieval Manuscripts: Palaeography and Performance: Essays Dedicated to Andrew Hughes*, ed. John Haines and Randall Rosenfeld (Burlington, VT: Ashgate, 2004), 60-88; 60.
[43] Alison Bullock, 'Palaeography', *GMO*, http://www.oxfordmusiconline.com/subscriber/article/opr/t114/e4947, accessed 18 March 2016.

but rather that its application and associated vocabulary, while appropriate for certain styles of notation, is less so for other notational styles, including the notation that is the focus of this thesis.

While this thesis specifically focuses on the notation of music in England between 1150 and 1300, the focus of the next section on early editions of Gregorian chant may seem puzzling. Yet, in order to offer any historiography of musical palaeography that will allow me to place my own theoretical concepts of music palaeography within the larger tradition I must follow the path of chant studies, as the two are inextricably linked.

1.1.i: The Beginnings of Palaeographic Work in Musicology

In its current state, the existence of palaeography within musicological scholarship is most closely aligned with the processes of critically editing early music and creating facsimile editions of music written using early notations. These practices predate the modern field of academic musicology and have their roots in the Gregorian chant revival of the nineteenth century, alongside a rising societal interest in medieval culture. The use of palaeography in the creation of new editions of Gregorian chant can be traced to the Benedictine abbey at Saint-Pierre de Solesmes, beginning with Dom Prosper Guéranger's time as abbot, and continuing when Dom Joseph Pothier joined Solesmes in 1859, only 22 years after it was raised from priory to abbey. Pothier led the plainchant revival from the 1860s, which saw the monks' focus fall on a renewed and refined performance practice of Gregorian chant that was

supported by their belief in a return to the original sources.[44] The subsequent interaction with

these chant sources inspired an academic interest as well, resulting in the production of many

invaluable editions of liturgical music, including *Les mélodies grégoriennes d'après la*

tradition (1880) and the *Liber Gradualis* (1883), self-described as the 'first authoritative

edition of plainchant based on palaeographic research'.[45] These editions were mainly

intended to support Guéranger's desire for a more authentic sung plainchant tradition within

the Catholic church, but in order to prove the 'authentic' status of the editions produced, the

monks needed to allow the public visual access to the sources on which the editions were

based. Under the supervision of Dom André Mocquereau, Solesmes produced a series of

photographic facsimiles known as *Paléographie musicale* (*PM*).

The concept of a 'musical palaeography' was first mentioned in print in the first

volume of *Paléographie musicale*, published in 1889.[46] Though the series offered vast

amounts of information relating to the specific notations used in the manuscripts contained in

its volumes (as well as a general discussion of neumatic notation contained in Mocquereau's

introduction to the first volume), the main focus of the scholarship was not to present

palaeography as a tool for transcription and translation of neumatic notation (though the

introduction did give insight to the reader about how the monks used the source material as

the basis for their new editions). Instead, the palaeography was intended to support the

---

[44] Far more detailed accounts of Saint-Pierre de Solesmes, including the abbey's influence on
typesetting and printing as well as the internal and external political intrigue surrounding the
Solesmes school and the controversy over the Vatican Edition, can be found in Katherine Bergeron,
Decadent Enchantments (Berkeley, Los Angeles and London: University of California Press, 1998),
and Katharine Ellis, *The Politics of Plainchant in* fin-de-siècle *France* (Burlington, VT: Ashgate,
2013), respectively. It is because these extensive histories have already been produced that I feel
comfortable containing my focus in this study to the palaeographic tradition of the Solesmes monks
and the resulting influence of their methodology on the field of academic musicology. However, as
much as possible I will endeavour to avoid 'compression' of the rich and complex history of Saint-
Pierre de Solesmes, especially in its regard to engagement with music notation (Ellis, *The Politics of
Plainchant*, 7).
[45] Pothier, *MG*; *Liber gradualis juxta antiquorum codicum fidem* (Solesmes: Imprimerie de Saint-
Pierre, 1895); Bergeron, *Decadent Enchantments*, 17.
[46] *Le codex 339 de la bibliothèque de Saint Gall, PM* vol. 1 (Solesmes: Desclée, 1889).

abbey's claim of the authenticity of their published editions. This was a point of contention between Pothier and his former pupil Mocquereau. As Katherine Ellis notes, while Mocquereau believed in the power of 'intellectual' proof to support the Solesmes editions, Pothier worried that allowing the public to have access to primary sources would not necessarily bring the support that Mocquereau believed to be visually evident via the notation.[47] When the sources were reproduced in facsimile using photography, what became clear was not indisputable proof of the authenticity of the Solesmes editions, but rather evidence of the general illegibility of the neumes, both for readers with and without experience engaging with neumatic notation.[48] Therefore, the next step for the monks of Solesmes was to find a way to communicate the information to the readers of *Paléographie musicale* that would allow them to interpret the facsimiles. The monks solved the problem by including comparative palaeography tables (like the ones discussed at the start of this chapter), which allowed readers to have easy access to lots of information about how to generally 'translate' the neumatic notation without having had much (or any) prior experience reading neumes.

Mocquereau uses this visual presentation of note forms to facilitate understanding of source material by just such a non-specialist audience. In the introduction to the first volume of *Paléographie musicale*, he states that as soon as early notations were brought to the attention of scholars, the immediate reaction of the scholars was to reproduce the notation, as it was clear to them that any discourse about these 'strange signs' would be impossible without first making them visible to the public eye.[49]

---

[47] Ellis, *The Politics of Plainchant*, 33.
[48] Bergeron, *Decadent Enchantments*, 80.
[49] *PM,* vol. 1, 7: 'Dès que l'attention des savants se fut portée sur les anciennes notations, ils s'efforcèrent aussitôt de les reproduire. Il est clair en effet qu'on ne pouvait parler au public de ces signes étranges sans les lui mettre sous les yeux'.

In Figure 4, from the introduction to the first volume of *Paléographie musicale*, neumatic notation is presented in a late-nineteenth-century modern translation, and includes a number associated with each type of neume. Each number corresponds to a list so that each neume form could be easily identified. Katherine Bergeron notes that this process 'effectively dismembered the whole into parts, causing the complete [chant] to appear, from another perspective, like a random series'.[50]

Figure 4: Table of 'translated' neume forms as seen in *PM* vol. I.[51]

This process of dividing up neume forms to then be interpreted individually, rather than examining the forms within their melodic context, was compared in *Paléographie musicale* to the process of learning the alphabet of a language. In his introduction to the first volume, Mocquereau makes the point that one must know how to spell a text in order to appreciate it.[52] Yet this process of individual visual analysis of neume forms is entirely antithetical to the musical process that the Solesmes monks were attempting to perpetuate, again reflecting the growing rift between generations of scholarship at the abbey. In *Les*

---

[50] Bergeron, *Decadent Enchantments*, 96-7.
[51] *PM*, vol. 1, 53.
[52] Ibid., 110. Also quoted in Bergeron, *Decadent Enchantments* (1998), 101.

mélodies grégoriennes, Pothier decried the 'monotonous' and 'heavy' styles of chant singing

that had become the standard practice in the nineteenth century, noting that the 'essence' of

the melody was no longer present and the sounds were uniform, even likening them to a child

sounding out syllables when learning to read.[53] The requirements that were set for the

performance of chant and the study of its notation did not match up at Solesmes, and this

disparity has in many ways been retained in the general process of palaeographic analysis,

even outside chant studies.

One of the biggest methodological problems with the musical palaeography at

Solesmes was the attempt to generalise neumatic notation for neat and easy presentation. The

de-contextualisation of notational forms in order to present them as individual units is not an

appropriate parallel to an alphabet, as Mocquereau and Pothier's approach in *Paléographie*

musicale purports itself to be. While an alphabet allows new readers to separate a language

into manageable units, the practice is not quite as clear-cut with neumatic notation; the

process of breaking down early musical notation into standard graphemes, such as the 26

letters of the Latin alphabet, would exclude the numerous ad-hoc forms being used by

scribes. In the case of adiastematic neumes, disassociation from context can also affect how

specific forms should be interpreted in terms of their function; if a form is indicating relative

pitch, its dissociative context becomes a function (representing a disembodied descending

pitch, ascending pitch, &c.) rather than a specific, translated sound, as would be the case with

an alphabet. Furthermore, the concept of a single neumatic style being applicable across a

wide variety of sources—both in performing and writing—often results in notation being

interpreted by scholars according to a specific intent or goal (as was the case with

Mocquereau). If a certain 'set' of forms is introduced, via table, to an audience, they will go

---

[53] *MG*, vol. VIII. Also quoted in Bergeron, *Decadent Enchantments* (1998), 101.

on to interpret notational graphemes based on this previous knowledge, instead of engaging with the notation as a malleable, unique source of information.

The Solesmes editions brought academic scholarship about music into the public eye in an unprecedented way with the publication of the first volume of *Paléographie musicale*. Though, as mentioned above, the Solesmes monks were the first to base their critical editing process around palaeographic study of primary sources, critical editions of early music had also been published elsewhere in Europe, both in transcription and facsimile. Most of these volumes were either part of larger studies about chant, or focused on specific types of chant notation. Peter Wagner published *Einführung in die gregorianischen Melodien* (3 vols.) between 1895 and 1905, one volume of which (*Neumenkunde)* focused specifically on notation, including square notation. Wagner's study has a general focus on neume forms and their regional differences, rather than presenting information organised around manuscripts, as was the case with the *Paléographie musicale* series.[54]

Many nineteenth- and early twentieth-century critical editions were produced by scholars for whom palaeography (and source study in general) provided support for editorial choices, especially in regard to more contentious notational elements such as rhythmic interpretation. The methodologies used to produce source-based studies spearheaded by turn-of-the-century scholars such as Friedrich Ludwig, Jean Beck, and Pierre Aubry were carried on well into the twentieth century by musicologists including Leo Schrade, Yvonne Rokseth,

---

[54] Peter Wagner, *Einführung in die gregorianischen Melodien,* 3 vols. (Leipzig: Breitkopf & Härtel,1895; 1901-1905).

and Hans Tischler.[55] Though their theories and specific interpretations of early notations may have been varied, the main focus of most of these studies was on the interpretation and reconstruction of the pieces, rather than a specific examination of notational style.

The first study on musical notation that could be considered anything close to 'complete' was Johannes Wolf's two-volume *Handbuch der Notationskunde*, published in 1913.[56] Wolf divided his study into styles of notation, beginning with ancient notation from Greece and *Musica enchiriadis*, working through styles of neumatic notations, mensural notation and into the *Ars nova* (similar to the structure of his teacher Hugo Riemann's more compact *Geschichte der Notenschrift*, published in 1878).[57] In 1925, Dom Grégoire Suñol published *Introduccío a la paleographia musical gregoriano*, which, like Wagner's study, divided neume forms on the basis of their geography. Again, like Wagner, Suñol's study focuses generally on styles of notations, rather than looking at practical elements of neumatic use.

The field of survey literature on notation grew again in the early 1940s, albeit with a more specialised focus than Wolf's, with the publication of Willi Apel's study on polyphonic

---

[55] Because this chapter deals with palaeography rather than critical editing, specific works by these scholars will not be discussed in detail; instead, the focus will remain on palaeographic methodologies used to create such editions. For further information, please see Pierre Aubry, ed., *Réproduction Phototypique du Manuscrit 5198 de la Bibliothèque de l'Arsenal: Transcription du Texte Musical en Notation Moderne par Pierre Aubry, Introduction et Notices par A. Jeanroy* (Paris: Paul Geuthner, 1910), as well as his *Cent Motets du XIIIe siècle*, 3 vols. (New York: Broude, 1964); Jean Beck, ed., and Louise Beck, *Corpus Cantilenarum Medii Aevi, ser. 2, Le Chansonnier du Roi, Analyse et Description Raisonnées du Manuscrit Restaure par Jean Beck et Madame Louise Beck*, 2 vols. (New York: Broude Brothers, 1938); Friedrich Ludwig, ed. *Guillaume de Machaut: Musikalische Werke*, 4 vols. Publikationen älterer Musik (Leipzig: Breitkopf & Härtel, 1926-1954); Yvonne Rokseth, ed., *Polyphonies du XIIIe siècle: Le manuscrit H 196 de la Faculté de Médecine de Montpellier*, 4 vols. (Paris: Editions de l'Oiseau-Lyre, 1935-39); Leo Schrade, ed., *The Works of Guillaume de Machaut*, 2 vols. Polyphonic Music of the Fourteenth Century (Les Ramparts, Monaco: L'Oiseau-Lyre, 1956); Hans Tischler, ed., *Trouvère Lyrics with Melodies: Complete Comparative Edition*, 13 vols. Corpus Mensurabilis Musicae, 107 (Neuhausen: American Institute of Musicology/Hänssler-Verlag, 1997). This list is not comprehensive, but merely a starting point for further investigation of the approach to the critical editing of early music in the twentieth century.
[56] Johannes Wolf, *Handbuch der Notationskunde* (Leipzig: Breitkopf & Härtel, 1913).
[57] Hugo Riemann, *Geschichte der Notenschrift* (Leipzig: Breitkopf & Härtel, 1878).

music between 900 and 1600.[58] Now likely one of the most well-known volumes written on polyphonic notation, Apel's monograph, while acknowledging the importance of Wolf's *Handbuch*, credited both the 'unavoidable shortcomings' present in a work with such a broad range of study, and the advances in scholarship within the previous twenty years for necessitating a new volume on notation.[59] In the introduction, Apel makes multiple references to the book's intended function: a means to help prepare students for original research in the field of early music. Carl Parrish's *The Notation of Medieval Music* was published in 1957, and these two works have become the most frequently used texts for young musicologists to use in their initial studies of early musical notation.[60]

The 1950s and 60s saw the continued publication of editions from Solesmes, as well as many other critical and facsimile editions of music, both in Europe and in America. However, the next major study with a distinct palaeographic element did not arrive until 1970, with Dom Eugène Cardine's *Sémiologie grégorienne*. In Cardine's study, musical palaeography is distinguished from semiology through specific definitions of each field: palaeography is defined as the study of signs and melodic signification, while semiology is defined as the study of reasons for the diversification of signs.[61]

Cardine's study was the first to combine palaeography and interpretation in order to facilitate the examination of chant notation. He critiques the Vatican Edition for leaving out different symbols for 'similar melodic designs'. In one example, Cardine identifies at least five different neume forms that could be considered the torculus, and notes that the omission of these differences is a rejection of the interpretative nature of neumatic notation, since the

---

[58] Willi Apel, *The Notation of Polyphonic Music 900-1600* (Cambridge, MA.: Medieval Academy of America, 1942).

[59] Ibid., vii.

[60] Carl Parrish, *The Notation of Medieval Music* (New York: W.W. Norton & Company, 1957).

[61] Dom Eugène Cardine, *Sémiologie grégorienne. Études grégoriennes* 11 (Solesmes: Imprimerie de Saint-Pierre, 1970), 2.

melody would remain the same in any case.[62] Yet Cardine's method was less a tool for interpretation than a new form of classification, defining relative meaning in neumatic notation and cataloguing the use of these particular forms in the manuscripts of St Gall and several other related sources.

Two other major studies of notation were published in the second half of the twentieth century. In 1975 and 1977, respectively, Bruno Stäblein and Solange Corbin each published major works on notation.[63] Stäblein's work, while including neumatic notation, focuses on notation of monophonic music between 800 and 1200 and uses facsimiles to illustrate examples. Corbin's posthumous volume specifically focuses on, as the title suggests, *Die Neumen*, presenting neumatic chants alongside square note transcriptions. Though Stäblein's volume is a survey of notations and Corbin's focuses only on one type of written music, both authors divide the notations geographically when organising and presenting information within the larger text. Both Stäblein and Corbin seem to fall into the same trap that Mocquereau faced when overseeing publication of *Paléographie Musicale*: in many cases perceived visual similarity is given preference over contextual information offered on the potential origin of the source, and often these groups cause the reader to make visual connections between forms that are not necessarily indicative of a relationship between writing styles.

1.1.ii: Modern Palaeographic Techniques

The growth of the New Musicology in the 1980s was a turning point for musical palaeography in regard to educational practice as well as research. In light of the call from

---

[62] Ibid., 1: 'En les traduisant tous de façon identique, la Vaticane omet leur signification particulière qui, puisqu'il s'agit toujours du même dessin mélodique, ne peut être que d'ordre interprétatif.'
[63] Bruno Stäblein, *Schriftbild der Einstimmigen Musik,* Musikgeschichte in Bildern III/4 (Leipzig: Verlag für Musik, 1975); Solange Corbin, *Die Neumen*, Palaeographie der Musik vol. 1, no. 3, ed. Wulf Arlt (Cologne: Volk-Verlag, 1977).

many prominent scholars for a move away from traditional and perceived positivist methods of scholarship, palaeography was seen as particularly indicative of the antiquated musicological practices being contested. As a musicological skill, however, palaeography was still expected to be applied regularly by scholars working with manuscript sources. One of the results of the New Musicology's re-prioritisation within the field was a shift in educational practice as well as scholarly focus, resulting in palaeography's presence in the education of young musicologists becoming markedly less prominent. A palaeographic method focusing on notational transcription was described by Joseph Kerman in 1985 as 'low-level problem-solving' in opposition to the study of 'the music itself', and he suggested its presence in the education of young musicologists was both unnecessary and limiting.[64] 'Liberating' as Kerman may have found it, dropping the notation course did not so much free musicology students from their transcription work as it limited students' access to necessary educational skills.

Kerman's inclusion of early notation study in his anti-positivistic stance understandably received some criticism. Sandra Pinegar's 1993 response, focusing specifically on palaeography and its status as a 'symbol of positivistic orthodoxy in musicology's race to incorporate and legitimize the voices of radical dialectics', suggested that perhaps the teaching of palaeography could be re-organised and re-focused for students' individual needs.[65] Rather than focusing on transcription or rhythmic elements of early notation, Pinegar suggested that palaeography 'should concentrate upon the notational and musical issues that make working with those repertories unique, challenging, and worthwhile.'[66]

---

[64] Joseph Kerman, *Contemplating Music* (Cambridge, MA: Harvard University Press, 1985), 46.
[65] Sandra Pinegar, 'The Seeds of Notation and Music Paleography', *Current Musicology* 53 (1993), 106.
[66] Ibid., 106.

Though Pinegar's response was passionate, Paula Higgins' criticism of Pinegar's article was apt. Higgins noted that some of Pinegar's suggestions for the application of palaeography in musicological study came 'uncomfortably close to promoting a kind of musicological vocationalism, symptomatic of the national trend of the past decade or so, that measures the value of higher education purely by its eventual workplace utility and seeks to enhance teaching efficiency with computerised technology.'[67] Therefore, the question remains as to how palaeography can be included in musicological curricula in order to allow students to benefit both from its historical application in regard to the study of notation and for use in transcription, and also from the information about social and cultural engagement with music that can be obtained from the study of scribal hands and manuscript production.

In any case, Kerman's statement reducing palaeography to 'low-level problem-solving' disregarded important work in the study of handwritten musical texts that had been produced throughout the previous decade. In 1982, Leo Treitler published an article in the *Journal of the American Musicological Society* entitled 'The Early History of Music Writing in the West'.[68] After noting the changing state of scholarship about written music and the relatively recent suggestion that 'the written score served as an exemplification of the song, to be taken more as a model for performance than as a blueprint', Treitler put forth the idea that scholars should turn their focus to the question of how systems of notation functioned.[69] In order to answer this question, Treitler proposed a transition from palaeography to semiotics, noting that palaeography was a well-established discipline in regard to its application to music, but '[i]n the semiotics of musical notation, which would concern itself with the functional relationships between sign systems and what they signify while taking

---

[67] Paula Higgins, 'From the Ivory Tower to the Marketplace: Early Music, Musicology, and the Mass Media', *Current Musicology* 53 (1993): 111.
[68] Leo Treitler, 'The Early History of Music Writing in the West'.
[69] Ibid., 329.

into account the situation of the person(s) to whom they signify, virtually everything remains to be done'.[70] Over 30 years later, Treitler's statement remains mostly true.

In 1983, Wulf Arlt re-entered the debate about the shifting tides in palaeography. He referenced a statement made in his own 'Aspekte der musikalischen Paläeographie', published in 1979, which noted that, following the tradition of Leo Schrade, the emphasis in musical palaeography was shifting from 'a simple decoding of the notation to an interpretation which perceives the notation as a reflection of style and performance practice'.[71] Arlt explained the difference between the 'established procedure and mentality of modern practice' as opposed to 'unwritten practice' throughout the process of composition, notation, and performance practice. Arlt's contribution to this topic will be discussed further in section 1.3.ii.[72]

The concept of notation as being reflective of performance practice, while now widely accepted as being one of many essential considerations when engaging with early notation, was a major change for palaeography, as it voided any 'positivistic' attempts at using notation to find the true or correct version of a piece of music. By admitting that notation was as fluid as human performance, many other elements of music notation were able to be examined, including unintended communication from the scribe by way of erasures. Arlt noted that scribal correction can be an indication of a work in progress. This is an important distinction from previous scholarship, because it requires that the palaeographic process remains within the context of the manuscript, individual piece of music, and scribe—it does

---

[70] Ibid.
[71] Wulf Arlt, 'The "Reconstruction" of Instrumental Music', in *Studies in the Performance of Late Medieval Music*, ed. Stanley Boorman (Cambridge and New York: Cambridge University Press, 1983), 79.
[72] Ibid., 80.

not allow for the type of systematic analysis in which a piece must fit with preconceived ideas of a writing system.[73]

Alongside Treitler in the 1980s, Susan Rankin was also examining notation in context, specifically in regard to Anglo-Saxon notations in the eleventh century. Rankin combined geography, historical book production, individual scribal comparison, and cultural and liturgical musical practices to examine the intersection between oral and written culture as it applied to musical notation. She has continued this practice in subsequent publications.[74] In her study of eleventh-century book production at Exeter Cathedral, Rankin traced relationships between so-called Anglo-Saxon notation and contemporary notational forms, showing how the neume forms changed as different regional notations began to dominate the tradition.[75] By combining historiographical content with visual information gleaned from a palaeographic examination of the musical and literary texts, Rankin successfully merges traditional methods of examining notation with an approach that allows for Arlt's concept of fluidity to inhabit the page.

Though these 'modern' examples (now some thirty years old) show how the strength of palaeographic work intensifies when scholars combine culture and context into their studies of notation, music palaeography is still largely regarded as a process of visual identification and classification: recognising graphemes as specific note forms which are then translated into pitches, in order to interpret the music represented by the notation in the most 'accurate' way possible. The requisite visual component in the presentation of palaeographic work has not changed, nor has the function of palaeographic tables moved beyond the role of visual glossary which enables scholars to write using a general terminology that has been

---

[73] More recently, the use of erasures as a palaeographic tool was discussed in Haines, 'Erasures in Thirteenth-Century Music'.

[74] Susan Rankin, 'From Memory to Record: Musical Notations in Manuscripts from Exeter'; and 'Neumatic Notations in Anglo-Saxon England', *Musicologie Médiévale: Notations et Séquences, Actes de la Table Ronde du CNRS à l'IRHT 1982*, ed. Michel Huglo (Paris: Champion, 1987), 129-44.

[75] Rankin, 'From Memory to Record', 98.

applied to a range of different notations and time periods (which, as I have mentioned, is the reason such a table has been included in the introduction to this thesis).

The classification method of palaeographic study can be used for editing and transcription, as well as codicological elements of manuscript study such as identifying scribal hands or using notation to more accurately date a manuscript. The use of visual comparison is based on palaeographic methods used for the study of written language. Scholars implement a sort of musical morphology, identifying musical units made up of notes, to classify different styles of notation based around shared regional and temporal characteristics. This practice, combined with the study of ductus—focusing on characteristics of individual scribal hands—has typically made up the basic palaeographical methodology as it pertains to music notation. However, both textual and musical palaeographic study are also largely based around the perception of the individual carrying out the research process. Questions of comparison and classification are beholden to 'the eye'. Though this phrase is commonly found in palaeographic texts, it nevertheless remains a vague concept, attempting to cast an objective light on a necessarily subjective field. Albert Derolez opens his 2003 monograph on palaeography in Gothic manuscripts with a quotation from M.R. James, who, in discussing how researchers go about the process of dating manuscripts, admits that the process of dating may not even be teachable. James goes on to say:

> The study of facsimiles to begin with, and, later on, the constant
> handling of books themselves — these supply the only safe
> guidance to that condition of eye and mind which will enable the
> student to say unhesitatingly, "This is a twelfth century book
> and this is an early fifteenth; this was written in Italy and this in
> England".[76]

---

[76] R.W. Pfaff, 'M.R. James on the Cataloguing of Manuscripts: A Draft Essay of 1906', *Scriptorium* 31 (1977): 104; via Albert Derolez, *The Palaeography of Gothic Manuscript Books* (Cambridge and New York: Cambridge University Press, 2003), 1.

As noted earlier in this chapter, the current role of palaeography in musicological scholarship is largely behind the scenes. All scholars working with early manuscripts will have applied palaeography to their work, but very few will include a discussion of that process in the finished product. The palaeographic presence will be found in the critical commentary of editions (both facsimile and transcribed), and in examples from articles like Arlt's, thus making palaeographic historiography within the past thirty years much more difficult to trace; a description of notation in an introduction to an edition is not the same as a detailed discussion about a scholar's approach to notational interpretation. The nature of a critical edition is necessarily limited in scope; musicologists must present information pertinent to a reader's successful interaction with the music presented (whether in facsimile, modern notation, or both), while avoiding the inclusion of information which is unlikely to be of use or of interest to many of the users, especially performers. When palaeographic information is included in critical editions, it is almost always in reference to the author's interpretation of the notation: a justification of particular choices made, which require historical and cultural information for support.

Some musicologists, however, are including palaeographic material in their publications that offers insight into the research process. Susan Rankin's introduction to her 2007 edition of the Winchester Troper (*GB-Ccc* 473) presents an informative look not only at the notation contained within the manuscript, but also at Rankin's method of interpretation and analysis of the scribal hands. She divides her extensive introduction into three parts, the second of which is entirely dedicated to 'Scribes, Scripts and Musical Notations', with subsections for scribal hand, notation(s), and analyses of the work of individual scribes (and notators, as Rankin chooses to use these terms to distinguish between writers of music and of text). In her discussion of the notators, Rankin clearly addresses the different approaches to the notation that she took when studying this manuscript: she provides an examination of the

'main' notator's hand, alongside the two dozen other notators working on the manuscript at various stages of temporal distance from the main notator. Rankin also offers comparison with other associated sources and notational models, which allow her to develop a sense of the general notational influence and practice in Winchester during this time period, while still acknowledging the unique qualities of the main notator's interpretation of the musical text.

John Stevens also includes a discussion of notation in the introduction to his edition of the Later Cambridge Songs: *GB-Cu* Ff.i.17(I).[77] He begins with a discussion of general features of the handwriting, using the terms 'notation' and 'script' to distinguish between musical and textual written material. Stevens then moves on to an examination of unique or non-traditional notational vocabulary (including the 'wave note', which will be discussed at length in section 2.2.x of this thesis), a discussion of scribal hands, and the context of the notation (or, in this case, a perceived lack of source material to use for comparison). As is the case with Rankin's introductory material, it is the organisation of the information that offers more insight into the practice of musical palaeography than anything that the author explicitly writes. The material that each scholar has chosen to include is directly related to the palaeographic practice, and each of these introductions highlight the following areas in regard to notational palaeography:

1. General characteristics of the notation(s) present in the source;
2. Specific neume forms used (especially ones that might be unique to a source);
3. Number of notational hands found in a source and (if multiple hands are present) any major differences between the notations;
4. Sources with related notation (if any).

---

[77] John Stevens, ed., *The Later Cambridge Songs: An English Song Collection of the Twelfth Century* (Oxford: Oxford University Press, 2005), 9-22.

Alongside critical editions, scholars are still publishing important work on music notation, but the focus is much more narrow: more closely aligned with Treitler and Rankin than with previous works like the surveys of musical notation written by Apel and Parrish.[78] The most recently available survey of early notation is Thomas Forrest Kelly's *Capturing Music: The Story of Notation,* published in 2014, but unlike Parrish and Apel's works, Kelly's book has a decidedly non-specialist slant.[79] Kelly acknowledges this in the preface, stating, 'This is not a technical manual'; but while an introductory text on notation is long overdue and very welcome, the wide scope of *Capturing Music* means that the complexities and individual traits of the many sources Kelly presents are reduced into a much more regularised 'meta-system' so that they may be explained in non-specialist terms and fit into a chronological narrative. Because Kelly's overall focus is on a conceptualised system rather than on sources, there is no room for any real palaeographic examination in his text.

Digital techniques are being incorporated much more frequently into practices of musical palaeography. The availability of digital surrogates in databases such as the Digital Image Archive of Medieval Music (DIAMM) and Gallica, the digitisation project of the Bibliothèque nationale de France, has allowed individual scholars to work with early notations on a regular basis, and the integration of methods for creating digital surrogates has been invaluable for musicological scholars who value both accessibility and close work with

---

[78] Recent scholarship with a focus on palaeography and notation includes Sean Curran, 'Reading and Rhythm in the "La Clayette" Manuscript (Paris, Bibliothèque nationale de France, nouv. acq. fr. 13521)', *Plainsong and Medieval Music* 23, no. 2 (2014): 125-151; Helen Deeming, 'Observations on the Habits of Twelfth- and Thirteenth-Century Music Scribes', *Scriptorium* 60 (2006): 38-59; John Haines, 'Erasures in Thirteenth-Century Music', and 'From Point to Square: Graphic Change in Medieval Music Script'; Michel Huglo, 'Towards a Scientific Palaeography of Music', in *The Calligraphy of Medieval Music*, trans. and ed. by Haines (Turnhout: Brepols, 2011), 13-22; Susan Rankin, 'Calligraphy and the Study of Neumatic Notations' in *The Calligraphy of Medieval Music*, 47-62; and Giovanni Varelli, 'Two Newly Discovered Tenth-Century Organa', *Early Music History* 32 (2013): 277-315.

[79] Thomas Forrest Kelly, *Capturing Music: The Story of Notation* (New York: W. W. Norton & co., 2014).

manuscripts.[80] Neither database offers information on how to carry out palaeographic work (especially with music), although DIAMM does host Sources of British Song, a partner project to Deeming's *Songs in British Sources ca.1150-1300*, which offers further critical commentary to the songs in the *Musica Britannica* edition, especially in regard to the notation used.[81] Another DIAMM affiliate, the Tudor Partbooks Project, has produced conference papers discussing specific methods of palaeography to be used when examining English manuscripts from the sixteenth century, particularly miscellany manuscripts in which the notators seem to vary their writing styles without any evident reason.[82] This research aims to offer some kind of codified palaeographic approach which is applicable not only to music manuscripts, but to Early Modern sources in general.

Digital tools other than databases are becoming more common, as well. A number of tools are currently in development that can be considered musical parallels to the Text Encoding Initiative (TEI).[83] The Music Encoding Initiative (MEI) would allow digital editions to be searchable, like PDFs, and Optical Music Recognition (OMR) software, a relative of Optical Character Recognition (OCR), teaches computers to 'read' early notation, thereby allowing scholars to work with large amounts of musical data.[84] Projects like these

---

[80] Digital Image Archive of Medieval Music: http://www.diamm.ac.uk; Gallica: http://www.gallica.bnf.fr. Both accessed 15 March 2016.

[81] *MB* 95; http://www.diamm.ac.uk/resources/sbs. Accessed 15 March 2016.

[82] Julia Craig-McFeely and Katherine Butler, 'Identifying Scribal Hands: A Methodological Toolkit and an Elizabethan Case Study', paper given at the 2015 MedRen Conference, Université libre de Bruxelles, 6-9 July 2015.

[83] Text Encoding Initiative: http://www.tei-c.org/index.xml, accessed 14 March 2016.

[84] For further information on the current state of OMR and MEI research and resources, please see Donald Byrd et al., 'Towards a Standard Testbed for Optical Music Recognition: Definitions, Metrics, and Page Images', *Journal of New Music Research* 44, no. 3 (2015): 169-95; Ichiro Fujinaga, *Single Interface for Music Score Searching and Analysis*, McGill University, http://simssa.ca/, accessed 13 March 2016; Kate Helsen et al., 'Optical Music Recognition and Manuscript Chant Sources', *Early Music* 42, no. 4 (2014): 555-8; Ana Rebelo, et al., 'Optical Music Recognition: State-of-the-Art and Open Issues', *International Journal of Multimedia Information Retrieval* 1, no. 3 (2012): 173-90; Perry Roland et al., 'Early Music and the Music Encoding Initiative' *Early Music* 42, no. 4 (2014): 605-11; Eleanor Selfridge-Field, 'Search Engines for Digitally Encoded Scores', *Early Music* 42, no. 4 (2014): 591-98; John Stinson and Jason Stoessel, 'Encoding Medieval Music Notation for Research', *Early Music* 42, no. 4 (2014): 613-17.

can supplement the process of palaeography by offering images of other manuscripts for comparison, and eventually speed up the process of collecting quantitative data about manuscript sources (the use of which will be discussed in section 1.3.iv and applied in Chapter Two of this thesis). The majority of digital resources used in regard to notational palaeography are databases, providing manuscript images which allow scholars to conduct research easily and inexpensively.[85] In many ways these databases function as digital versions of notational tables discussed earlier in this chapter, but their usefulness is somewhat greater, because the digital format allows users to compare an exponentially larger number of examples of the same letter or note form.

Research on OMR has grown rapidly over the past decade, including projects that focus on early notation as well as modern. Programs are being created which will allow digital resources to determine specific forms, rather than requiring scholars to identify and encode forms individually. One such project is the Optical Neume Recognition project (ONR), which aims to aid in the investigation of adiastematic notation, featuring 'specialised noise reduction, binarisation, layout analysis, feature extraction and symbol recognition, word spotting and more', using the tenth-century liturgical Office book *CH-SGS* Cod. Sang. 390/391 as a case study for the resource.[86] The project description notes that this manuscript recently underwent a detailed palaeographic study, and one goal of the ONR project is to use a 'comparatively objective method to confirm or refute the conclusions of this study.'[87] The concept of a digital tool as an answer to palaeographic subjectivity raises some interesting

---

[85] A text-based example is the DigiPal Project, which allows users to highlight and annotate individual graphemes which can then be compared in a 'lightbox' format. *DigiPal: Digital Resources and Database of Manuscripts, Palaeography and Diplomatic* (London: 2011-14), available at http://www.digipal.eu/, accessed 17 March 2016.

[86] Optical Neume Recognition Project: https://www.cs.bham.ac.uk/~aps/research/projects/neumes/project-description.php, accessed 17 March 2016.

[87] Ibid., for palaeographic study please see Kees Pouderoijen and Ike de Loos, *Wer ist Hartker? Die Entstehung des Hartkerishen Antiphonars*, Beiträge zur Gregorianik 47 (2009).

questions in regard to the discussion above about the palaeographer's 'eye': how to most effectively combine personal skills and external resources when conducting palaeographic research, and where to draw the line (if at all) between professional experience and inherent subjectivity? Assuming objectivity in technological resources is dubious. A computer must be programmed to recognise what constitutes a form within certain visual parameters, and that standard is determined by the person writing the code.

Few digital tools have been created specifically for teaching students about musical notation (including palaeography). The practice is not widespread, likely because these resources have, for the most part, been developed independently of one another (for instance, single courses at individual institutions or research centres affiliated with larger institutions). The existing digital tools for teaching palaeography and notation will be discussed at length in section 4.2.ii of this thesis.

1.2: Music Writing and Other Writing Systems

In order to engage in palaeographic analysis, scholars must become familiar with the language or notation being used. Oftentimes palaeographic work can be used to expand existing knowledge about the writing system being studied. In order to effectively approach the music studied in this thesis as a writing system, this section will attempt to situate music notation within current scholarship on linguistic and non-linguistic writing systems, and consider how these analogous studies can be applied to the notation of medieval music.

1.2.i: Music Writing Within Studies of Language Writing: Uncertain Parallels

There is a broad spectrum of research about music as a language: studies have been published from various disciplines, including sociology, cognitive psychology, audition and perception, linguistics, music education, music theory, and philosophy.[88] Most of these studies touch on musical notation in regard to its role within a universal concept of music, just as writing would be present in any study on language. Yet notation is largely kept separate from heard music, or experiences of musical activity. It may be due to this multi-curricular approach that some scholars seem dissatisfied with the available studies, or consider most studies of music as language to have been unsuccessful; it can be difficult to engage in constructive peer critique when participants are approaching a similar topic from such varied backgrounds.[89]

Music's ability to exist as an oral tradition, independently of notation, can help to explain this distinction within studies of music as language. Trevor Wishart examines the

---

[88] Studies include Leonard Bernstein, *The Unanswered Question*, (Cambridge, MA: Harvard University Press, 1976); Deryck Cooke, *The Language of Music* (Oxford: Oxford University Press, 1959); Fred Lerdahl and Ray Jackendoff, *A Generative Theory of Tonal Music* (Cambridge, MA: MIT Press, 1983); Aniruddh D. Patel, *Music, Language, and the Brain* (Oxford: Oxford University Press, 2008); Diana Raffman, *Language, Music, and Mind* (Cambridge, MA: MIT Press, 1993); John Shepherd, et al., *Whose Music? A Sociology of Musical Languages* (New Brunswick, NJ; Transaction Books, 1980), esp. 125-153; John Sloboda, *The Musical Mind: The Cognitive Psychology of Music* (Oxford: Clarendon Press, 1985), esp. 11-67.

[89] Chris Philpott, 'Is Music a Language?', in *Issues in Music Teaching*, eds. Philpott and Charles Plummeridge, 32-46; 32.

historical relationship between music and notation, suggesting that music, 'as an alternative form of communication … has always threatened the hegemony of writing, and the resultant dominance of the scribehood's world-view'.[90] He goes on to note that both Plato and Confucius regarded this 'uncontrolled musical experience' as a threat, and mentions historically significant moments of humans using notation to 'control' music via writing, specifically, as he alleges, the church's 'codification' of chant under Pope Gregory. This framing of written music as something used to 'dominate' musical culture is not quite so straightforward[91]; the creation of written music hardly negated the existence of the 'uncontrolled musical experience' in the form of an oral tradition. This will be discussed further in section 1.2.iii.

Both Leonard Bernstein and John Sloboda have attempted to relate music and language using Noam Chomsky's theory of generative grammar, which suggests rules that can predict word combinations that form grammatical sentences. However, neither study engages with notation as anything more than a potential grammatical building block. Bernstein attempts a one-to-one relationship between music and language, first suggesting a musical note functioning as a word, and a scale as being relative to the alphabet, but he soon finds this to be inadequate. He makes several more attempts to carry this relationship through larger musical units (phrase = word, movement = sentence) but eventually admits defeat, finally noting that language and music are inherently incompatible because language has both a communicative and aesthetic function and music's function is purely aesthetic.[92] Sloboda does not make such broad claims about the nature of music or of language, but similarly

---

[90] Trevor Wishart, 'Musical Writing, Musical Speaking', in Shepherd et al., *Whose Music?*, 128.
[91] Indeed, Wishart's assertion of Gregory's involvement in the process of chant codification is an indication of how such assumptions can easily work their way into scholarly discouse, though there is no source material that indicates that Gregory had any part in the codification of chant. See Theodore Karp, *Aspects of Orality and Formularity in Gregorian Chant* (Evanston, IL: Northwestern University Press, 1998), 3.
[92] Bernstein, *The Unanswered Question*, 53-60; 78.

reaches a point beyond which he feels unable to move. He begins by comparing Chomsky to

Schenker, citing the parallels between the way they examine language and music,

respectively, specifically the way that both generative grammar and Schenkerian analysis

distinguish between 'deep' and 'surface' structures.[93] Sloboda ends up with a list of parallels

between music and language, but eventually admits that a generative grammar for music

'seems to be a less realizable goal than for language', though noting that this does not entirely

negate the analogy.[94]

1.2.ii: Music Writing Within Studies of Non-Linguistic Writing: Ideas of 'Notation'

Scholars have also engaged with musical notation as a writing system outside a specifically

language-based context, yet its consideration within this field is similarly limited. In *The*

Origin of Writing, Roy Harris discusses the difficulty of examining music notation without

framing the discourse upon studies of text-based language, noting that '[e]ven the earliest

surviving systems of musical notation we know are either based on or contaminated by pre-

existing forms of writing of a more general nature (as exemplified in the familiar adoption of

the names of letters of the alphabet to designate musical notes ...)'.[95] It is challenging to

imagine a system of musical notation that has no relation whatsoever to text-based writing

systems, and is especially difficult to do so given that the modern vocabulary available to us

requires discussions of notation to be framed around the language of text-based writing

systems in practical approaches as well as theoretical. The most glaring example, perhaps, is

the alphabetic naming of the notes in the musical scale. Even in scholarly fields, approaches

to musical writing are rooted in textual studies; much of the technical terminology used in

research on musical palaeography is borrowed from textual palaeography. Harris ruminates

---

[93] Sloboda, *The Musical Mind*, 11-17.
[94] Ibid., 65.
[95] Roy Harris, *The Origin of Writing* (London: Duckworth, 1986), 146.

on the existence of a musical notation un-beholden to these pre-existing written forms, using a hypothetical three-holed flute as an example. He considers how a simple notation might have been formed using visual examples showing which hole or combinations of holes to cover in order to produce different sounds—modern musicians might perceive it as a type of simple tablature—and how such signs might be interpreted as 'being in graphically isomorphic correspondence with a certain set of musical notes'.[96]

Harris' speculation is meant to make the point that, while the earliest forms of notation known to modern users were conceived of within a well-established culture of language-based writing, the possibility of the existence of earlier isomorphic forms of notation is not unreasonable. This raises questions about how certain signs might communicate information more effectively for some people than for others, depending on how much previous knowledge a person would have needed in order to successfully interpret specific signs. For example, Harris' choice of isomorphic representation presupposes a musical system which supports distinct pitches, which means users would still require familiarity with the concept of pitch to interpret Harris' flute notation, even if the notation is independent of pre-existing forms of writing. Harris refers to the necessity of previously held knowledge—which would have been assumed by the users of such communicative signs—as pragmatic preconditions.[97]

Harris has also examined notation as a non-glottic writing system. Glottic writing systems assume knowledge of a specific language; they are not universally understood, as might be the case with a pictorial writing system. Non-glottic writing systems can integrate activities unrelated to speech: along with music notation, Harris considers mathematical writing, knitting patterns, and dance notation to be non-glottic writing systems.[98] However,

---

[96] Ibid., 147.
[97] Ibid., 148.
[98] Harris, *Signs of Writing* (London and New York: Routledge, 1995), 134-55.

according to Harris' system of integrational linguistics, non-glottic texts cannot be read aloud because they are based on spatial display, which (according to Harris) cannot be translated to spoken form. Harris uses tablature and the musical staff as two different examples of the way notation utilises graphic space to separate things like pitch from elements of duration and succession. This type of integrationist approach assumes that spatial relations are essential for understanding of non-glottic texts, and any effort to translate these types of spatial display renders them meaningless.[99]

Some scholars have chosen to take linguistic approaches to the study of 'non-linguistic' systems. Twenty years prior to Harris, Nelson Goodman discussed musical notation in his book *Languages of Art: An Approach to a Theory of Symbols*. In it, Goodman specifically considers whether or not modern musical notation fits in with his created class of notation systems, developed using syntactic and semantic requirements.[100] Goodman's requirements for a language to be notational are as follows, with the first two rules qualifying as syntactic, and the final three as semantic:

1. Character-indifference: no mark may belong to more than one character, and all instances of one character must be replicas ('true copies') of one another (131).
2. Characters must be 'finitely differentiated' or 'articulate': 'For every two characters K and K' and every mark m that does not actually belong to both, determination either that m does not belong to K or that m does not belong to K' is theoretically possible' (135-6).
3. Systems must be unambiguous (148).
4. Compliance classes must be disjoint: by 'compliance class', Goodman means the objects being referred to by the symbols (149-151).
5. Semantic finite differentiation: the compliant must be different enough from another so that the relationship between symbol and object is unambiguous (152-3).[101]

---

[99] Harris, 'Speech and Writing', in *The Cambridge Handbook of Literacy*, ed. David R. Olson and Nancy Torrance (Cambridge: Cambridge University Press, 2009), 46-58; 56-7.

[100] Nelson Goodman, *Languages of Art: An Approach to a Theory of Symbols* (Indianapolis and Cambridge: Hackett Publishing Company, 1968), 179-92.

[101] Ibid., 131-53. For further analysis of Goodman's theory in relation to the work concept, see Lydia Goehr, *The Imaginary Museum of Musical Works: An Essay in the Philosophy of Music* (Oxford: Clarendon Press, 1992), 13-68.

Goodman created this system as a way to compare different art forms in terms of their potential to exist in written form; he wanted to see why some art forms can be notated (music generally succeeds) and why some cannot (painting is shown to be unsuccessful, and dance falls closer to music). If the requirements listed above are met, a notational system will produce identical scores and performances, thus allowing for unambiguous identification of the 'work'. Goodman believes that a score (his terminology is not specific to a musical score, but rather to the entity within his system that functions as such, depending on the art form being represented) has 'as a primary function the authoritative identification of a work from performance to performance'.[102]

Goodman is not the only scholar to consider the larger implications of notational systems. Harris revisits the concept of notation in *Signs of Writing* as well as in *Rethinking Writing*.[103] Harris' interpretation of the term 'notation' is non-musical: he sets up the concept of notation within a textual framework, as being distinct from a 'script'. In the vocabulary of music palaeography, notation and script are often used to distinguish musical notation from text, but in Harris' work the meanings are quite different. According to Harris, a script is based upon a notation, and one notation may be the basis for multiple scripts. For example, an alphabet can be a notation, as multiple languages can be based on the same alphabet. For Harris, the communicative elements of writing are contained within the script, rather than the notation, therefore the value of the notation as a written sign is directly related to the script in which it is being used. Harris uses the example of a medieval scribe who is familiar with the alphabet, but is not required to be able to distinguish between texts such as English and French, or to be able to interpret what these texts say.[104]

---

[102] Goodman, *Languages of Art*, 128.
[103] Harris, *Signs of Writing*, 102-5; and *Rethinking Writing* (Bloomington and Indianapolis: Indiana University Press, 2000), 91-7.
[104] Harris, *Rethinking Writing*, 91-2.

Scribal literacy is not an unfamiliar topic for manuscript scholars or musicologists; many scholars have explored ideas of scribal competence and error in regard to music notation, as well as the concept of literacy in regard to music's place within oral traditions. Sloboda frames a different approach to notation around orality in order to gain perspective on musical cognition.[105] Although much of his discussion is based around the cultural context of notation, rather than a language-based approach, his idea of 'selected' notational information is pertinent to this discussion. Sloboda suggests that the elements of a notation which are preserved in writing (in contrast to those elements which are left out) ultimately influence the spoken (or sung, or performed) forms of that language. He notes that this can have

> a profound influence on some forms of spoken language,
> legitimizing speech where the phonetic element carries more
> and more of the burden of the communication. In some contexts
> it may be implied that educated, literate speech is grammatically
> correct, phonetically well-articulated, decontextualised,
> unsupported by gesture, and smooth in pace and tone, compared
> to the speech of the oral or the child. The temptation is to make
> spoken language more and more like its written counterpart, so
> that the un-notated currency of speech, in all its richness of
> expression, becomes debased and devalued.[106]

Sloboda's approach is a reminder that scholarship on written cultures should not always be kept separate from research on oral traditions. This is applicable in the case of music notation, even if the writing is not based around a spoken language. Conversely, Goodman's theory leaves no room whatsoever for variation or individual interpretation in regard to a notational system, or any such transmission causing notational differentiation that would constitute deviation from his requirements. Sloboda continues his discussion

---

[105] Sloboda, *The Musical Mind*, 239-68.
[106] Ibid., 244-5.

specifically in regard to music, suggesting that notation has affected the forms of music being used within a culture, specifically that it allows for the construction of more complex forms, using many hundreds of notes, as well as devices such as inversion, retrogression, and counterpoint.[107]

Wishart touches on this idea of selective omission as well, suggesting that notation has become a filter, 'selecting some elements of sound, those which it notates, as of musical significance and others, those which it can notate only inadequately or not at all, as of only secondary importance for our perception of sound as *music*'.[108] Wishart believes that this focus on what he calls 'analytic notation' has had serious effects on the general perception of music: specifically, the emergence of the composer and the concept of 'interpretation' of a score.[109] Here, Wishart and Sloboda have broadened the scope of their notational studies; not only do they examine the writing systems, they are also studying the long-term cultural effects of using such systems.

1.2.iii: The Application of These Analogous Studies to Medieval Music Notation

Because most of these approaches were created specifically with modern musical notation in mind, there are certain elements of each theory that will be more applicable than others to insular song notation in the twelfth and thirteenth centuries. For example, rather than attempt to draw parallels between notational elements and grammar (as in the case with Bernstein and Sloboda), it might be more fruitful to think of a 'grammatical' approach which allows for the internal examination of notational elements, rather than requiring them to have an existing linguistic parallel. One such approach will be discussed in section 1.3.iii of this thesis.

---

[107] Ibid., 246.
[108] Wishart, 'Musical Writing, Musical Speaking', 135.
[109] Ibid., 136.

Goodman's requirement that every instance of a musical 'score' be identical is simply not applicable to music of the twelfth and thirteenth centuries, and (as subsequent chapters of this thesis will show) the notation being used does not fit many of his semantic and syntactic requirements, specifically those pertaining to ambiguity. While it is possible for certain medieval sources to be viewed in light of their 'authoritative' status (for example, Dominican and Franciscan attempts to codify chant practice though written exemplars),[110] Goodman's definition is far too prescriptive to be applied to medieval notation as a whole; this is certainly true of the specific case of insular song notation in the twelfth and thirteenth centuries.

Harris' concept of 'pragmatic preconditions' will not seem new to scholars of medieval music, as the question of historical and cultural context is applied regularly within the discipline. However, Harris' approach to notation as a non-glottic system, placing special consideration on forms of spatial display, may prove to be an interesting approach, if adapted slightly. Rather than assuming that without spatial relations a notation would be rendered useless, it might be more beneficial to consider more closely what information the spatial displays themselves have to offer: for example, the effect of stave and clef usage on a song's visual representation.[111]

---

[110] For further information, see Dominique Delande, *Vers la version authentique du graduel grégorien: Le graduel des prêcheurs, recherches sur les sources et la valeur de son texte musical* (Paris: Cerf, 1949); Michel Huglo, 'Règlement du XIIIe siècle pour la transcription des livres notés', in *Festschrift Bruno Stäblein zum 70. Geburtstag*, ed. Martin Ruhnke (Kassel: Bärenreiter, 1967), 121-33; Eleanor Giraud, 'The Dominican Scriptorium at St-Jacques and its Production of Liturgical Exemplars', in *Scriptorium: Wesen, Funktion, Eigenheiten*, eds. Andreas Nievergelt et al. (Munich: Bayerische Akademie der Wissenschaften, 2015), 247-258.

[111] Thomas Schmidt has related musical notation to this idea of spatial display, specifically noting that music (in contrast to verbal language) uses a multidimensional scheme of symbols that are reliant on both spatial and iconic aspects for their interpretation. Schmidt also uses the example of a stave, specifically in its ability to change the denotative meaning of a graphic sign (i.e. a note) depending on the sign's placement within the parameters on the staff. Thomas Schmidt, 'Making Polyphonic Books in the Late Fifteenth and Early Sixteenth Centuries', in *The Production and Reading of Music Sources: Mise-En-Page in Manuscripts and Printed Books Containing Polyphonic Music, 1480-1530*, ed. Thomas Schmidt and Christian Thomas Leitmeir (Turnhout: Brepols, in preparation). I thank Prof. Schmidt for sharing this chapter with me in advance of publication.

Sloboda and Wishart's considerations of music notation as being selectively omissive are certainly applicable to the study of medieval music: this will be applied directly in Chapters Two and Three of this thesis, where the palaeographic examination of specific forms will show instances where one scribe chose to indicate specific information, while another scribe felt it was unnecessary. Sloboda's questions of oral culture within writing systems will be useful as well, specifically as a reminder that medieval notation should not be approached as having insufficient information, but instead as being a reflection of a living culture with its own set of pragmatic preconditions.

Stave and clef usage will be discussed in greater detail in sections 2.3.i and 2.3.ii, and in the discussion of concordances throughout Chapter 3.

1.3: Music Writing and Semiotics

Semiotics refers to the study of symbols, or signs, and the way they are interpreted or used. The field of semiotics includes syntactics (the relationship among and between signs), semantics (the relationship between signs and the things to which they refer), and pragmatics (the way that certain signs derive meaning from their context). Semiotics is distinguished from linguistics in that it can be applied to non-language-based sign systems. Music semiotics questions 'whether there exist any common features in all human uses and practices of music, i.e., musical universals, categories of the human mind that form a basis for any and all musical activity'.[112] These 'common features' would reflect the ways that humans interpret music, much in the same manner that the semiotic field deals with interpretation of symbols. The field of music semiotics is relatively new, having only existed since the 1950s, but even in its early stages it was a diverse field, and remains so to this day. Jean-Jacques Nattiez, in his description of the field, noted that 'you have to speak of semiologies, or more precisely of possible semiological projects'.[113]

In this section I will be using the term 'semiotic', although several references will be made to 'semiology'. The distinction between the two terms is often blurred, with some scholars using the terms interchangeably, and some arguing for much more differentiation. In this thesis, my interpretation of the term 'semiotic' is more closely aligned with its use in the field of musicology: Leo Treitler, following Charles Sanders Peirce, uses the term 'semiotic' in his work, noting that it corresponds with the French *sémiologie*, first used in 1916 by Ferdinand de Saussure, with the publication of his *Cours de linguistique générale*. The

---

[112] Eero Tarasti, *A Theory of Musical Semiotics* (Bloomington and Indianapolis: Indiana University Press, 1994), 3.

[113] Jean-Jacques Nattiez, *Fondements d'une Sémiologie de la Musique* (Paris: Union Générale d'Editions, 1975), 19. For a fully realised history of the discipline, see Raymond Monelle, *Linguistics and Semiotics in Music* (London and New York: Routledge, 1992), 27-30; and Tarasti, *A Theory of Musical Semiotics*, 3-15.

theories of Saussure and Peirce make up the two major traditions in the field of semiotics. Saussure's approach to *sémiologie* was more closely aligned with linguistics, while Peirce's semiotic is related to the fields of logic and formal reasoning.

For Saussure, the basic structure of the linguistic unit is formed by associating two terms, the signifier and the signified, shown in Figure 5.
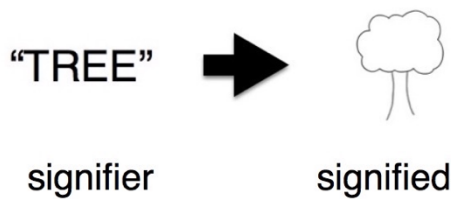
Figure 5: Visual representation of Saussure's concepts of signifier and signified.

For example, in Figure 5, the word 'tree' functions as the signifier, and the image that is formed in the mind when the word is used is what is being signified by the word 'tree' (in this case, a mental image of a tree). In Saussure's theory, the relationship between signifier and signified is entirely arbitrary.[114] Peirce's approach is triadic: the sign, or representamen, is then processed within the brain, and the resulting translation is the interpretant.[115] The object is the actual thing or idea to which the sign refers. Peirce's system can be seen in Figure 6.
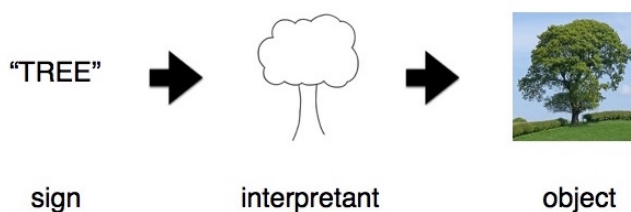
Figure 6: Visual representation of Peirce's concepts of sign, interpretant, and object.

---

[114] Ferdinand de Saussure, *Course in General Linguistics*, translated by Wade Baskin, ed. by Perry Meisel and Haun Saussy (New York: The Philosophical Library, Inc., 1959), 65-8.
[115] Charles Sanders Peirce, 'Sign', in *Dictionary of Philisophy and Psychology*, ed. James Mark Baldwin, 3 vols (New York: Macmillan, 1901-5), 2: 257.

Continuing with the 'tree' example, the word 'tree' is the sign or representamen, the mental image of a tree in the brain is the interpretant, while the actual tree being referred to is the object. Peirce is distinct from Saussure in that he is aware that the interpretation of a sign can never <u>be</u> the object to which it refers, only an individual conceptualisation of the object; the tree in the brain will never be the actual tree itself. The interpretant is Peirce's way of relating the representamen to the object, rather than allowing the relationship to be arbitrary, as in Saussure's system.

Treitler acknowledges that Peirce and Saussure had fundamental differences in their interpretation of the field, but in his interpretation of the semiotic terminology, Treitler says he has chosen to focus on their similarities, instead.[116] In the end, however, Treitler seems to align himself more closely with Peirce: his main utilisation of semiotics is in his application of Peirce's representational modes to early notation, which will be discussed further in section 1.3.ii.

In Treitler's explanation of his vocabulary, he writes that both terms (semiotic/semiology) refer 'to the discipline that concerns itself with the functional relationship between sign systems and what they signify, in the particular communication contexts in which they function'.[117] He notes especially that the concept of *sémiologie* as used by Dom J. Hourlier and Dom Cardine in their works from the mid-twentieth century is distinct from Saussure's use of *sémiologie* in its application as a method of differentiating interpretative analysis of notation from palaeographic study.[118] In this thesis, the key part of

---

[116] Treitler, 'The Early History of Music Writing in the West', 320.

[117] Ibid., 317-64; 320.

[118] Ibid. Treitler here refers to Jacques Hourlier, 'Sémiologie musicale', *EG* 6 (Solesmes: Abbaye Saint-Pierre de Solesmes, 1963), 153-7; and *EG* 11.

the definition of 'semiotic' is the focus on these 'communication contexts', for it is the communicative nature of music notation that I wish to further explore.

It is particularly important to specify that my intention is not to provide a semiotic interpretation of the <u>music</u> being represented in the notation studied in this thesis. The semiotic analysis of music has been demonstrated in the works of Eero Tarasti, Roland Barthes, Jean-Jacques Nattiez, Kofi Agawu, Robert S. Hatten, Raymond Monelle and others, based around the analysis and interpretation of such varying concepts as musical convention, topic, and gesture.[119] This thesis places no such focus on any one interpretation of what might be considered 'the music itself', but will instead explicitly target the musical notation present in the manuscript sources being studied, and its existence and function as a system of communication. The distinction between musical semiotics and the semiotics of musical notation is clearly defined, as even Tarasti has recently noted the lack of attention given to musical notation by scholars of musical semiotics.[120]

Rather than present the many complex approaches to the semiotic discipline in their entirety, I will instead present several subsections which I believe are important for the development of a semiotically-informed approach to musical notation: notation within studies of semiotics, and semiotic analysis being directly applied to musical notation. Following

---

[119] For further information, please see Kofi Agawu, *Playing With Signs: A Semiotic Interpretation of Classical Music* (Princeton: Princeton University Press, 1991); Roland Barthes, *Image-Music-Text* (London: Fontana, 1977); Robert S. Hatten, *Musical Meaning in Beethoven: Markedness, Correlation, and Interpretation* (Bloomington and Indianapolis: Indiana University Press, 1994); Monelle, *Linguistics and Semiotics in Music*, and *The Sense of Music: Semiotic Essays* (Princeton: Princeton University Press, 2000); Nattiez, *Music and Discourse: Towards a Semiology of Music*, trans. Carolyn Abbate (Princeton: Princeton University Press, 1990); Tarasti, *A Theory of Musical Semiotics*, and (ed.) *Musical Signification: Essays in the Semiotic Theory and Analysis of Music* (Berlin: Mouton de Gruyter, 1995).

[120] 'At first glance one would think musical notation to be the prime object of such a discipline as semiotics when the latter is applied to music. Yet, it is amazing how few semiotic scholars have addressed musical notation.' Tarasti, *Semiotics of Classical Music* (Berlin and New York, NY: Walter de Gruyter, 2012), 438.

these discussions of existing scholarship, I will outline my own framework for a semiotically-informed approach to the study of medieval music notation.

1.3.i: Musical Notation Within Studies of Semiotics

As noted above, there is a distinct lack of current scholarship from semioticians in regard to musical notation. Tarasti seems surprised by this neglect, and Nattiez has argued that the discipline depends on the existence of musical notation in order to carry out the multifaceted analyses required.[121] Thomas Schmidt notes that, while studies of images (as opposed to text) have received a greater amount of attention following the 'iconic turn' of the 1990s, music notation has not received the same amount of focus in regard to its visual (or 'iconic') aspect.[122] While musical notation has not been discussed at length in studies of music semiotics, there are brief mentions of notation which, when unpacked, can contribute to the development of a semiotically-informed approach to musical notation.

Tarasti, writing about music semiotics, discusses the relationship between 'expression' and 'content', which stem from Saussure's earlier concept of signifier and signified. He notes that these Saussurean concepts can exist in different modes: tactile, visual, physical, and phenomenal:

> The first "translation" occurs in the composer's mind, with the transformation of his or her musical idea into visual notation. Next, the performer translates the score into gestural language and body techniques. Then the listener translates sound phenomena into the "language" of inner experience. Finally, the most radical translation is made by those who set out to describe in words some of these modes of expression.[123]

---

[121] Nattiez, *Music and Discourse*, 72.
[122] Schmidt also notes that the concept of the 'iconic turn' has received the most attention in German-speaking scholarship. Schmidt, 'Making Polyphonic Books in the Late Fifteenth and Early Sixteenth Centuries'.
[123] Tarasti, *A Theory of Musical Semiotics*, 4.

In Tarasti's 1994 overview of the discipline's early years, he describes Charles Seeger's consideration of the existence of a dichotomy of musical knowledge.[124] In his article, respectively, Seeger writes about the conflict between inner knowledge, or the things felt by people engaging with music (both listening and receiving), and external knowledge, where the physical concept of 'external' applies to verbal knowledge or text-based discourse, which Seeger considers to be '"outside" the musical process'.[125] Tarasti sums up Seeger's view as musicology's basic, inherent problem, asking, 'How can musicology, which is verbal activity, bring knowledge of the inner logic of music?'[126] Perhaps the way to bridge the gap is to examine an individual perspective between these two communicative forms: to approach musical notation as an individual's representation of an 'inner knowledge of music'. Rather than dissecting notation as one would divide a textual language into an alphabet, the language-based approach could focus on the larger process of notated musical culture. This idea that notation stems from a process of translating sound into visual representation (and then back again, with subsequent performance) is a major theme of existing semiotic studies of musical notation.

1.3.ii: Semiotic Studies of Musical Notation

In order to fully realise the approach to notation that will be taken in this thesis, it is necessary to return to Treitler's 1982 *JAMS* article on the history of music writing in Western culture, specifically its subsequent editing and re-publication in 2003 in *With Voice and Pen*, which further explains Treitler's semiotic approach to notation. As discussed in the introduction to section 1.3, Treitler attempts to place elements of musical notation within

---

[124] Charles Seeger, 'On the Moods of a Music-Logic', *Journal of the American Musicological Society* 13 (1960), 224-61.
[125] Ibid., 225.
[126] Tarasti, *A Theory of Musical Semiotics*, 3.

Peirce's system of representational modes. This is not to be confused with Peirce's three-part system of sign - interpretant - object. According to Peirce, a sign can either be an icon, an index, or a symbol:

> An *icon* is a sign which would possess the character which renders it significant, even though its object had no existence; such as a lead-pencil streak as representing a geometrical line. An *index* is a sign which would, at once, lose the character which makes it a sign if its object were removed, but would not lose that character if there were no interpretant. Such, for instance, is a piece of mould with a bullet-hole in it as a sign of a shot; for without the shot there would have been no hole; but there is a hole there, whether anybody has the sense to attribute it to a shot or not. A *symbol* is a sign which would lose the character which renders it a sign if there were no interpretant. Such is any utterance of speech which signifies what it does only by virtue of its being understood to have that signification.[127]

Following this system of representation, Treitler offers several examples of how music notation might function within its boundaries. He argues that the visual analogue of the pitch spectrum represented by diastematy is a <u>symbolic</u> representational mode, due to the 'habitual association between the sign and its referent'.[128] There is no actual 'height' of a note in relation to pitch, but over time the relationship between a particular sound, and a note's placement on a staff has become inextricable for interpreters of Western music notation. Though representation of pitch is habitual, and our modern concepts of 'high' and 'low' pitch are now analogous to physical height on a page, there is actually no connection between the two beyond this culturally constructed relationship.

---

[127] Peirce, 'Sign', 257.
[128] Treitler, 'The Early History of Music Writing in the West', 330.

63

Treitler goes on to suggest that the shape of a diastematic melody (in regard to this relationship between height variation and pitch) is an <u>iconic</u> mode of representation, explaining that '[a] sign functions in the iconic mode when it represents, by virtue of a resemblance that it bears to the thing represented, an isomorphism of some sort between sign and referent'.[129] Treitler argues that it is the iconic aspect of a melodic line which facilitates the reading of musical notation: 'Rather than translating each sign back to its referent in the pitch spectrum, we follow the contour of the line as a whole and duplicate it in our performance'.[130] However, he fails to address the main problem with any argument for musical notation as an iconic mode of representation: a visual sign cannot ever truly represent sound. The 'iconic' nature of the relationship between notation and sound comes from a symbolic interpretation of pitch (physical height as having a direct relationship with pitch), thus rendering the iconic representation false. It is interesting to consider Treitler's examples within Harris' perception of music as a writing system. Certainly the association between physical distance and pitch variance would fall into Harris' category of 'pragmatic preconditions', rendering the isomorphic quality of diastematic notation useless for users who do not already possess such knowledge. Therefore, any labelling of diastematy as iconic would fail to be universal.

Arlt has also engaged in the semiotics of music notation, albeit somewhat indirectly, in his study of early sources of instrumental music. In his discussion of problems in the field of historical performance, Arlt focuses on notation, and the shifting academic mentality regarding the interpretation thereof: specifically, the passage in his own 'Aspekte der musikalischen Paläographie' (mentioned in the first section of this chapter) about palaeography moving from a 'simple decoding' to an interpretation which allows the notation

---

[129] Ibid., 331.
[130] Ibid.

to reflect style and performance practice. He approaches performance using two models, A

and B, which represent the modern concept of notational practice, and the modern

'confrontation' with unwritten practice, respectively:

A: Conventions   Conventions
        ∨   ∨
    Composers → Notated music   +   Performers → Resulting music
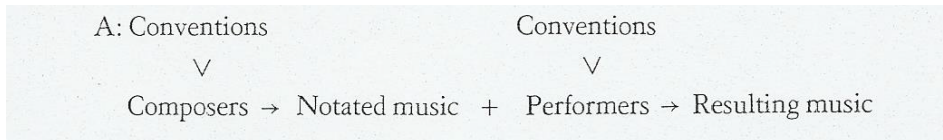
Figure 7: Flow chart representing the modern practice of engaging with notated music, as shown in Arlt's model A.[131]

B: Theory/Texts/   Notated music
    Pictures   ↘   ↓
                   [Conventions] > Performers → Resulting music
    Instruments/   ↗   ↑
    Instrumental
    techniques   Rules of communication
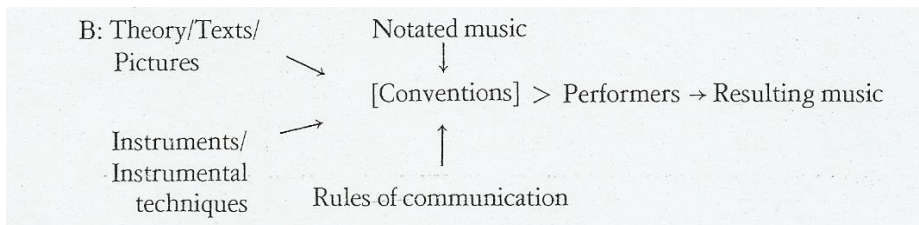
Figure 8: Flow chart representing modern engagement with unwritten musical practice, as shown in Arlt's model B.[132]

Arlt uses the term 'unwritten musical practice' here to include all unknown elements

of notated music, specifically in regard to the reconstruction of early music. His use of

'unwritten' can include rhythm, tempo, or even form and melody, depending on what is

available via the source. Though Arlt is not explicitly writing about semiotics, his models are

clearly drawing on semiotic approaches in regard to the flow charts he uses to represent

engagement. His approach allows for an engagement with written text that includes

individual perception as well as social interaction and cultural practice.

Arlt is not the only scholar to use the flow chart model to express the process of

engaging with musical notation. Musicologist Kari Kurkela has conducted a semantic

analysis of modern (or 'conventional', in Kurkela's terms) music notation, in an attempt to

---

[131] Arlt, 'The "Reconstruction" of Instrumental Music', 80.
[132] Ibid.

decipher the relationship between notation and sound.[133] By framing his study within

semantics, the subdivision of semiotics which concerns the way meaning is affected by

grammar, he is assuming a relationship between music and a language-based writing system,

as opposed to Harris' non-language-based approach. However, unlike Goodman's semantic

analysis, Kurkela's is based much more strongly in the tradition of formal reasoning. Kurkela

divides musical notation into basic and complex expressions. Basic expressions might

include individual note forms, but would also include 'qualifiers', or musical elements that do

not indicate pitch, but which affect the interpretation of pitch (such as dynamic symbols).

When these notes and qualifiers are combined, they form complex expressions.

Kurkela formulates these expressions using the language of set theory, and attempts to

identify formal relationships between them. I will return to the concept of these expressions

in Chapters Two and Three of this thesis, specifically in regard to how the note-forms being

discussed might fit be categorised as basic or complex. I include the majority of the forms in

the category of basic expressions, while compound forms function as complex expressions.

This use of 'basic' and 'complex' is slightly different to Kurkela's system, as his complex

expressions are basic expressions combined with 'qualifiers', which do not exist in the songs

being examined in this thesis.

In Kurkela's study, notation can be considered a process of coding and de-coding

without having an isomorphic, fixed relationship between a sound event and a notational

grapheme, an approach which is reminiscent of Arlt's 1983 statement about the changing

nature of palaeography, discussed above. Though Arlt is writing about musical palaeography

and Kurkela is engaging in semantic analysis, their approaches are strikingly similar: both

have used formulaic expression to represent the process of writing and performing music.

---

[133] Kari Kurkela, *Note and Tone: A Semantic Analysis of Conventional Music Notation,* Acta Musicologica Fennica 15 (Helsinki: Suomen Musiikkitieteellinen Seura Musikvetenskapliga Sällskapet i Finland, 1986).

According to Kurkela, music notation's meaning is derived from its representation of sound events, and, like Arlt, he uses formulaic expression to engage with the relationship between a notated score and the resulting sound. Figure 9 shows Kurkela's representation of how two sound events can be related to one another through notation. In the most basic form, a sound event, *s,* is translated (represented here as an arrow, —>) into notation via the score, *S*, which is then translated into another real sound event, s_1 (note that the two sound events are not the same):

$$s \longrightarrow S \longrightarrow s_1$$

Figure 9: Basic representation of translated sound. Adapted from Kurkela.[134]

In Figure 9, Kurkela assumes an initial sound event which is then translated into notation, and once again into a different sound event. The two sound events are related; these sound events could be called the same piece of music, even if the musical parameters surrounding the separate events vary (different performer, different instrumentation, slight melodic variance). Kurkela also notes that he does not consider pitch a parameter of a note symbol. Instead, he believes that a note gains pitch when placed on a staff, similar to Harris' assertion that removing notation from the context of its spatial display renders it meaningless.[135] The concept of pitch will be discussed further in the next section, but it is interesting how many scholars, approaching notation from a linguistic background, see pitch as contained within the staff. An assumption of pitch as a distinct entity, while seemingly straightforward when engaging with modern notation, cannot be applied to medieval notation in the same manner,

---

[134] Ibid., 19. The following expressions are based around Kurkela's process, but I am using modified variables based around my own interpretation of the representative process, as well as its relationship to the notation discussed in this thesis.

[135] Ibid., 101.

and so the next question must be how to represent questions of cultural perception in this type of representative method.

1.3.iii: A Semiotic Framework for the Study of Medieval Music Notation

I have chosen to use the flow chart method as the basis for my approach to music notation and semiotics. Although I will use Kurkela's framework, there are several adaptations that must be made in order to apply this method to song notation in the twelfth and thirteenth centuries. The first adaptations are to Kurkela's basic formula (as shown in Figure 9). A formula that begins with one sound event and ends with another (via engagement with notated music) is not an entirely sufficient representation of the musical process, as it does not include variables for human interpretation. Also, s as a representation of a 'sound event' assumes a physical sound; in my interpretation, s must represent silent sound as well as physical sound, to allow for internal thoughts (silent reading), and s_1 must also be able to represent the same type of sound event; internally 'heard' sound, without physical manifestation. Furthermore, it does not allow for the possibility of interaction with s without any type of sound, such as a medieval scribe copying from an exemplar.

Kurkela notes that the conceptualisation of sound goes through an internal process of understanding and interpretation (U) on both ends of the translation process. This is similar to Arlt's concept of 'Conventions', shown above in Figure 7, which he represents as an initial requirement for both composers and performers. The composer must undergo a process of understanding or interpretation in order to translate a musical idea (whether physical or mental) into notation, and the performer must then do the reverse on the opposite end of the flow chart. In this case, the resulting flow chart would look like this:
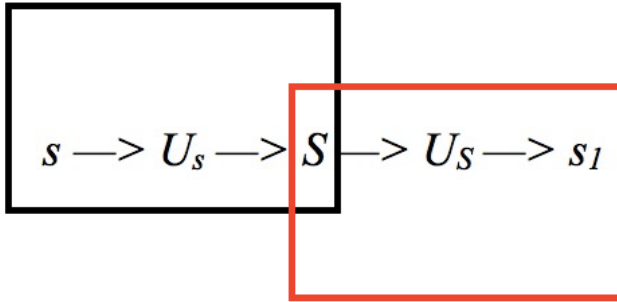
Figure 10: Basic representation of translated and interpreted sound.

In Figure 10, the black and red boxes (which I have added here, and are not present in Kurkela's work) represent individual instances of human interaction. The boxes do not always represent different humans; for example, a composer might go through the process represented within the black box, and twenty years later revisit a score and go through the process depicted in the red box. However, the flow chart does not assume any sort of temporal consistency or lack thereof; there is no temporal factor whatsoever at play in this stage. It is also inaccurate to portray the red box as a single entity. A better representation might be the one shown in Figure 11:
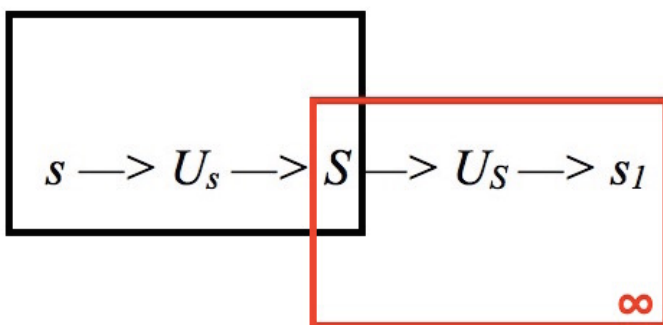
Figure 11: Basic representation of translated and interpreted sound, allowing for infinite variations.

In this case, the red box contains an infinity symbol, representing the infinite possible instances in which the process depicted within the red box may be carried out, and the infinite number of individuals carrying out the process.

Kurkela's flow chart can be adapted to allow for various interpretations depending on the outcome of a person's interaction with the score, S (for example, he includes a variable for analysis if the score is being used for musicological purposes), but it is intriguing to think of how Arlt's model B (Figure 8) might appear as one of Kurkela's flow charts, and how musicologists might go about their work without having any concrete knowledge of certain variables. For example, when working with medieval music, it is impossible to 'solve' for many of the variables Kurkela includes: there is rarely any existing proof of s (the initial sound event) beyond the existence of S (the written source), nor is there an abundance of existing accounts of what type of process U may have been for medieval composers and performers.

When attempting to represent medieval music using this type of flow chart, the process is rarely so straightforward as to fit into such a tidy formula. For a piece of music notated between 1150 and 1300, the conceiver of s may not be the creator of S; for example, the s in question may actually be the s_1 of another existing flow chart. Kurkela supposes that s will be the first sound event, or initial conception of the notated music, S. However, a representation of one song in medieval sources may actually look more like this:

$$s \longrightarrow U_S \longrightarrow S \longrightarrow U_S \longrightarrow s_1 \longrightarrow U_{s_1} \longrightarrow S_1$$
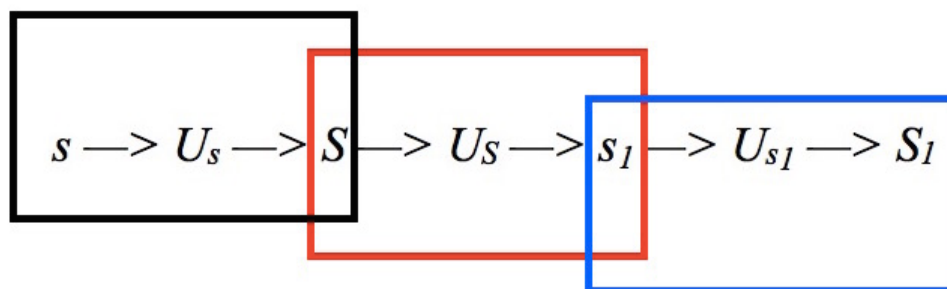
Figure 12: Representation of multiple translations of sound between notated and sonic mediums.

70

In Figure 12, the black box represents the act of going from initial sound event (s) to the first written representation (S); for example, a scribe notating a song in a manuscript. The red box shows how the process of translating the written representation back into another, unique sound event can be a separate action (as previous examples have also depicted); for example, a different musician singing or playing the notated song (although, as noted earlier, the actions within the black and red boxes can be carried out by a single person or multiple people). The blue box shows the possibility of the subsequent sound event (s_1), formerly the end point of the flow chart, functioning as the initial sound event (s) for another written source (S_1); for example, a different scribe hearing the sound event s_1 and notating it in a different manuscript. This flow chart is one possible way to represent relationships between manuscript witnesses, as it shows a relationship between sound events (the variable s) without suggesting that the two sound events are the same (hence the subscript numerals).

This version of the flow chart, however, still seems insufficient for a scenario in which s is unknowable. The linear state of the flow chart assumes a knowledge of an original sound event; in the case of medieval song, this information is rarely, if ever, available. In order to represent medieval song in a manner that accurately portrays:

1. The amount of knowledge that modern scholars and performers engaging this material can be expected to have,

2. The full range of possibilities in which the notated and sonic material might be inter- or intra-related, and

3. The full range of possible people interacting with these materials,

the flow chart cannot possess a specific 'start' or 'end' point. Thus, the version I believe to be most representative of the *basic* relationship between medieval notation and sound events is shown in Figure 13:
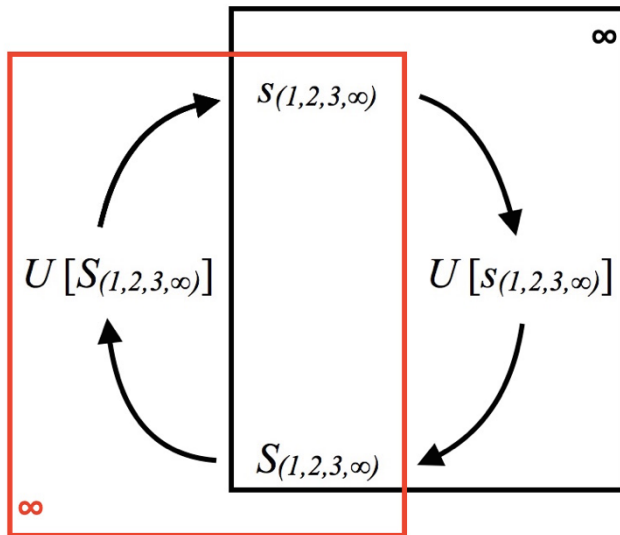
Figure 13: Flow chart representing the basic relationship between medieval notation and sound events.

In Figure 13, there are only two potential actions, but they can be carried out infinite times by infinite parties; the black box represents the translation of a sound event via individual understanding and/or interpretation into a written medium, in this case a manuscript source. Note the sound event may be either internal or external; the event does not necessitate an act of composition but does not reject the possibility, either. The red box represents the opposite path; the translation of written material (again, not necessarily composition but including this as a possibility) via understanding into a sound event which, like the black box, can be either internal or external.

Though the focus of this thesis is on music notation, it is important to add that, in regard to the material being studied in this thesis, there is no notational prerequisite for a sound event to occur. For example, Figure 14 shows the possibility of a sound event which was generated directly from another sound event, via understanding.

$$s \longrightarrow U_s \longrightarrow s_1$$

Figure 14: Generation of a basic sound event from another sound event.

Even when working specifically with notated sources, notation is but a single form of musical communication, and the Middle Ages saw many acts of musical communication taking place without any reference to written sources at all.

So far, the figures above have been representative of basic relationships, but the relationships between sound and visual expression can certainly become more complex, depending on a variety of other factors which may or may not come into play. They can also allow for varying outcomes: as stated above, Kurkela gives an example where an individual's interaction with S, the score, can result in a different end to the flow chart. Kurkela notes that not every interaction with notated music will necessarily produce a subsequent sound event, so in certain cases U_S can represent an analysis, and would not necessarily result in another sound event.[136] However, the outcome of analysis does not always negate the possibility of a simultaneous sound event occurring during the process (think of singing along while studying a piece of music), which leads the discussion again to concepts introduced in Arlt's model B (Figure 8). Beyond the notation, Arlt's model included 'Theory/Texts/Pictures', 'Instruments/Instrumental techniques', and 'Rules of communication', all of which were combined to form 'Conventions', which then fed into 'Performers' and ended with 'Resulting music'. The main difference between Arlt and Kurkela's relationships between notation and sound event is that Kurkela places notation a step further away from these 'Conventions'

---

[136] Ibid., 20.

(which are similar to Kurkela's process of understanding/interpretation), whereas Arlt includes notation along with the other 'Conventions' such as technique and theoretical knowledge.

Although there is a disparity between the types of research Arlt and Kurkela are carrying out, as well as between the styles of music notation being examined in each study, the two scholars are essentially both attempting to create and visualise a formulaic representation of the relationship between music notation and performance, allowing music notation to have a set place and an important role in the various paths of music from conception to sound event. It is possible to then use these flow charts, and the information contained within, as a semiotic framework to examine song notation in the twelfth and thirteenth centuries.[137]

1.3.iv: Quantitative Methodologies and 'Macro-Palaeography'

Though the approach used in this thesis to examine the relationships between humans, sound, and visual representation is theoretical, the method used to analyse the notational forms being studied will be quantitative. Albert Derolez has examined quantitative methods in the field of textual palaeography, noting that this method allows palaeographers to communicate information in a way that 'is as clear and convincing to its reader as it is to its author'.[138] Peter Stokes has noted that the problem remains of 'how to articulate palaeographical arguments in objective ways', arguing that the problem partially involves the necessary subjectivity of palaeography as a discipline, and that such impressions 'are inherently

---

[137] This type of analysis can also be used in regard to modern interaction with this same notation, and will be discussed in greater detail in Chapter Four of this thesis.

[138] Derolez, *The Palaeography of Gothic Manuscript Books*, 7.

difficult to communicate and cannot be engaged with effectively'.[139] For music

palaeographers, this discipline-wide subjectivity is even more rampant, given the lack of

available methodological texts. Some scholars argue that a true quantitative study of

palaeography is not even possible, because it is inherently fluid, but Stokes notes that there

are studies of modern handwriting which suggest it can be quantified 'with some significant

success', and therefore it is certainly worthwhile to ask the same of medieval handwriting.[140]

Derolez notes that there are two tested quantitative methods of palaeography. The

first, exemplified by Léon Gilissen in 1973, involves taking detailed measurements of

multiple examples of a given script and then creating a 'typical' alphabet based on the results,

akin to finding an average way that a form is typically written in a given script, though

Derolez warns that Gilissen takes this method 'to extremes' in his work.[141] The second

method, which Derolez argues is preferable to the first, is statistical, consisting of counting

and measuring data about 'significant features' of handwriting, then charting the results. He

uses a method proposed by Anscari Mundó as an example, in which Mundó uses this

statistical data to create a table which includes the specific features of an undated manuscript,

that is then compared to dated manuscripts.[142] Derolez also mentions the work of Ezio Ornato

---

[139] Peter A. Stokes, 'Computer-Aided Palaeography, Present and Future', in *Codicology and Palaeography in the Digital Age*, ed. Malte Rehbein et al. (München: Professur für Historiche Grundwissenschaften und Historiche Medienkunde, Ludwig-Maximilians-Universität München in Zusammenarbeit mit dem Institut für Dokumentologie und Editorik, 2009), 309-38; esp. section 3.2 for discussion of forensic examinations of modern handwriting and the possibility of objective handwriting identification.
[140] Ibid., 312.
[141] Léon Gilissen, *L'Expertise des écritures médiévales* (Ghent: Story-Scientia, 1973).
[142] Derolez, *The Palaeography of Gothic Manuscripts*, 8. Derolez also offers references for further examination of quantitative methods.

and Carla Bozzolo, who outlined the principles of a statistical quantitative approach in 1997, with *La face cachée du livre médiéval*.[143]

      In Chapters Two and Three of this thesis I will present a quantitative analysis of 111 songs written in Britain over a period of 150 years, notated by at least 58 different scribes. As in Mundó's method, outlined by Derolez, I have counted and measured data about the significant features of the forms being used to notate song, and hope to use this quantitative data to present my results in a clear and convincing manner. I am referring to this process as 'macro-palaeography', because the up-close process of palaeography will be applied to a very large number of songs, sources, and scribal hands: indeed, over 25,000 note-forms will be examined. It is my hope that the resulting data will be able to function as a building block for further studies of insular notation in general, as well as song notation in the twelfth and thirteenth centuries.

---

[143] Ezio Ornato, ed., *La face cachée du livre médiéval: L'histoire du livre vue par Ezio Ornato, ses amis et ses collègues* (Viella: Roma, 1997), esp. 33-40 (Carla Bozzolo and Ezio Ornato, 'L'étude quantitative du manuscrit médiéval: aspects méthodologiques et perspectives de recherche'), 41-66 (Ornato, 'La codicologie quantitative, outil privilégié de l'histoire du livre médiéval'), and 607-679 (Ornato, 'L'histoire du livre et les méthodes quantitatives: bilan de vingt ans de recherches').

Chapter Two: Palaeography and the Notation of Songs in British Miscellanies, 1150-1300

Introduction: Building A Notational Vocabulary

As shown in the Introduction to this thesis, the neume forms used to notate this group of songs vary both in their visual and functional characteristics. This chapter will offer detailed palaeographic data for all the songs studied, focusing on how certain forms are being used according to the theoretic basis for analysis developed and discussed in the previous chapter: specifically in relation to Kurkela's models for semantic analysis, examining the relationship between notation and sound.[144] I will first explain the process of data collection and organisation used to carry out this palaeographic research, including the criteria for form identification and specific information being included in the study. In the second section I will present data on individual neume forms and the ways in which the specific forms are being used to represent sound. In the third and final section I will examine any larger associations between notational use and non-notational visual data, including both what I will refer to as 'general song data' and 'non-specific' palaeographic data.

In this chapter, I will refer to some palaeographic terminology that may not be immediately known to all readers. As previously stated, it is difficult to provide specific definitions for many of these terms, as they have been co-opted from earlier traditions and their use in regard to the material studied in this thesis does not always remain true to their origin of use. The names of specific note forms (and their historical use in chant manuscripts) have been defined in the Introduction to this thesis, and other palaeography-specific content will be defined in relation to its usage in the context of the material being examined. Within

---

[144] See above, Chapter One, section 1.3.ii.

each type of note-form, there are visual differences that are dependent on the scribe. These differences will be referred to as 'adaptations', to avoid implication of a standard way of writing each form.

2.1: Data Collection and Criteria for Identification

The categories of data gathered about this group of songs can be broken down into four groups, which are presented in Table 14: general information about manuscript sources, general information about specific songs, non-specific palaeographic data (referring mainly to extra-notational material on the page), and specific palaeographic data (referring mostly to specific forms used).

General Source Data	General Song Data	Non-Specific Palaeographic Data	Specific Palaeographic Data (Frequency and Use)
Date of source / Date music added (if different)	Song type / Designation	Presence of erasures (both text and music)	Virga
Size of source (mm)	Existence of concordances / contrafacta	Presence of errors (both text and music)	Punctum
Number of music scribes	Voice Parts	Use of colour	Pes
	Language(s)	Treatment of initials / punctuation	Clivis
		Presence / use of vertical indicator lines	Climacus
		Clefs used	English conjunctura
		Clef changes	Extended clivis
		Lines in staff	Scandicus
		Marginalia	Torculus
		Unique elements[145]	Porrectus
			Cephalicus
			Epiphonus
			Wave note
			Compound / other forms
			Unique elements

Table 14: Categories of palaeographic data gathered.

---

[145] This category is used within both Non-Specific and Specific Palaeographic Data because it can refer to both notation and the extra-notational elements of a song.

As seen in Table 14, there is data present about specific note forms, but also about more general topics such as genre and dating. The purpose of including this data is to examine whether there exists any type of correlation between specific data sets. This opens up possibilities for comparison of usage across manuscripts of different dates and provenances, or across songs of different languages or genres; and potentially to trace patterns in notational behaviour that might relate to chronology, geography, generic or linguistic norms or expectations.

The data gathered on specific note forms is representative of each form's visual presence in a song as well as the way in which the form is being used. Criteria for the visual presence is limited, however. For example, if a pes is used within a compound neume form, it is not counted in the 'Pes' category, but instead included in the 'Compound / other forms' category. As noted in section 1.3.ii, to place this distinction within Kurkela's system of semantic analysis, this would constitute the difference between using a pes as a basic expression and as a complex expression. The purpose of this separation is to make sure that the notational data is not only quantitative, but also communicates information about use; the use of the pes form in a 'traditional' or basic sense can then be studied in contrast to its use in longer, more complex expressions of sound.

This is not a statistical project; the quantitative data here is not the product of any existing quantitative method for carrying out research on musical palaeography. As noted in Chapter One of this thesis, I am following a quantitative method similar to the one Albert Derolez utilised in his 2003 study of palaeography in Gothic manuscript books. I agree with his assertion that statistical research, when applied to quantifiable data, can prove enormously helpful to the field. While this thesis is not a statistical examination as such, it can only offer what I hope will be a starting point for continued methods of quantitative palaeographic study of musical notations.

While the songs examined in this thesis are also found in *MB* 95, it should be noted that several songs found in Deeming's edition were not included in the quantitative study due to the fragmentary nature of their source material. The four songs found in *GB-DOr* PE/NBY/MI 1 are preserved in the fragments of two folios; while Deeming has supplied the missing sections in *MB* 95 (by inference, or from other manuscript witnesses), the lack of existing evidence about individual note forms and how they may have been used places the songs outside the scope of palaeographic study.[146] The data available in Ian Bent's 1970 study of the Dorchester fragments can be used to examine larger trends about that manuscript's page layout, structure of staves, and presence of certain note forms,[147] but unfortunately data on frequency of use in regard to notational forms is simply not available for this particular source.[148]

The division of songs by notator is a key element to this study. There are at least 58 different scribes notating these 111 songs. 81 of the 111 songs are found in manuscripts alongside at least one other song, sometimes in the same hand but just as often not. The majority of the songs examined are written by a single scribe, without other songs for comparison.[149] For the purposes of this chapter, hands will be referenced when necessary for context, but generally the data presented will be in relation to all of the songs overall, rather than divided by scribe.

---

[146] *MB* 95, 43-7; 178-9. One of the Dorchester songs, *Salve mater salvatorum vas electum*, has a concordance within the original group of songs, and will be discussed in section 3.1.ii of this thesis, albeit in less detail than the fully notated examples.

[147] Including, as Deeming notes, the presence of the wave note, which will be discussed further in section 2.2.x.

[148] Ian Bent, 'A New Polyphonic "Verbum Bonum et Suave"', *Music and Letters* 51 (1970): 227-41, 227-8; *MB* 95, 178.

[149] This is not to suggest that the scribes in question did not provide notation for other sources, but merely that no other notated examples are available within the scope of the material examined in this thesis.

2.2: Palaeographic Data by Neume Form

As discussed in Chapter One, within Kurkela's semantic analysis, written expressions of music are sorted into two categories: basic and complex. Accordingly, in this examination of data I will consider individual neume forms to be basic expressions, while compound neume forms make up the category of complex expressions (as stated in section 1.3.ii, and 2.i). As I stated in the Introduction to this thesis, compound neume forms indicate the various ways scribes combined existing forms to create new ways of representing longer patterns of sound used on a single syllable of text. These compounds are frequently ad-hoc combinations of familiar forms, but the scribes often make compounds by linking together a series of square notes resembling the note-heads of virgae. These different types of compounds will be discussed later in this chapter.[150]

Though the overall notation has been identified as having its basis in the Norman neume tradition, that does not necessarily confine these scribes to a strict orthography. John Stevens has noted the existence of varying subspecies of 'Cis-Norman French' notation; while acknowledging its influence on the notation of the songs in *GB-Cu* Ff.1.17(1), he writes that, in the context of insular song notation, it 'manifests itself … in a highly individual version'.[151] Because the amount of research that has been done on these 111 songs is limited, certain palaeographic terminology will be used that may be unfamiliar to readers from a musicology background. As noted in the introduction to this chapter, I have at times been required to create my own terminology, as well as borrow terms from other types of palaeographic research due to lack of available vocabulary. If a term is unique to this thesis, I will define it and mention any existing terminology that is related. If borrowed, I will note its origin and explain the reasons I feel it should be applied in a particular situation.

---

[150] See section 2.2.xi.
[151] Stevens, *The Later Cambridge Songs*, 12-13.

The structure of information presented in this section will follow a simple form: for each basic expression included in the table of palaeographic data, I will examine recurring elements of scribal interpretation of the form, how these visual differences are distributed throughout this miscellany song repertoire, and what these characteristics may offer in the way of understanding scribal practice and musical notation between 1150 and 1300. There are 26,760 note forms making up the 111 songs examined in this thesis. These forms can be broken down into nine categories by type, which function as the subsections for section 2.2. For each form, I will provide a data table that lists the total number of songs using the form, and the total number of forms written. I will also include data for any recurring scribal adaptations of the form, and the number of songs in which these adaptations are found.

2.2.i: The Virga

		%
Total songs using the virga (out of 111)	111	100
Total virga forms written (out of 26,760 total forms)	16,964	63
Number of songs using only virgae (no puncta)	23	21
Number of songs using only virgae with hairline ascenders	45	41
Number of songs using virgae both with and without hairline ascenders	7	6
Total number of virgae written with hairline ascenders (out of total virgae)	7,102	42

Table 15: Quantitative data on virga use in the songs of *MB* 95.

The virga is the most frequently used neume form in this group of songs. As shown in Table 15, all of the songs in this study use the virga form. When puncta are also present in a song, the majority of the scribes favour the use of the virga over the punctum to express a single

pitch; out of 111 notated songs, only four feature the punctum more frequently than the virga.[152]

The formation of the virga is relatively standardised, consisting of a note-head which is generally square-shaped, and a descender on its right-hand side. However, because of its ubiquity throughout the songs examined in this thesis, it is advantageous to examine the scribal adaptations of this form. The adaptations of the virga form that I will examine are: hairline ascenders above the head of the note, and slanted descenders (often toward the left). I will return to the virga form at the end of the section about the punctum (2.2.ii), for a discussion about distinction between the single-note forms.

The Hairline Ascender

In relation to modern notational vocabulary, a hairline ascender would be an example of a note where a descending stem continues up over the top of the note-head.[153] Without the presence of such ascenders, it is possible to conceive of the virga being formed without lifting pen from parchment: one horizontal stroke with the wide edge of the pen nib, followed immediately by a vertical stroke with the thin edge of the nib. Yet it is possible that a scribe may have picked up the pen between each individual stroke; a practice that can be visually confirmed by the presence of hairline ascenders.

As shown in Table 15, I have counted the specific number of songs which contain virgae written with hairline extenders. My inclusion of hairline ascenders in the qualitative data for the virga form was dependent upon the scribal preference for that specific form within a particular song; if the majority of virgae had the hairline ascenders present, this

---

[152] The sum of 111 notated songs is less than the total number of song titles examined in *MB* 95; contrafacta are not counted as individual songs unless they have their own notation. This number also excludes the previously mentioned songs not included in this study due to their lack of available visual data.

[153] I would like to thank Dr. Eleanor Giraud for introducing me to the term 'hairline ascender'.

general trend was noted. I also counted each form independently. The scribal trend was typically toward all or none of the virgae being written with hairline ascenders; only seven songs featured virgae with hairline ascenders alongside virgae without these ascenders. Out of those seven songs, only four used more virgae with hairline ascenders than without. Table 16 shows those seven songs which regularly use virgae both with and without hairline ascenders.

Song Title / *MB* No.	Manuscript and folio number	Total Virgae Used	Virgae With Hairline Ascenders	Other Songs By This Scribe?
El tens d'iver / 2	*GB-Cpc* 113, ff.35v-36r	44	11	No
Sancte Marie virgine (Godric of Finchale) / 3	*GB-Cu* Mm.iv.28, f.149r	30	16	No
Quid tu vides, Jeremia? / 5	*GB-Lbl* Harley 5393, f.80v	142: 45 upper voice; 49 middle voice; 55 lower voice	39: 12 upper voice; 13 middle voice; 14 lower voice	No
Planctus ante nescia / 22	*F-EV* 2, ff.3v-4v	221	135: 4v has no hairline ascenders, but this folio is a different scribe than 3v and 4r	Yes, scribe of 3v and 4r has 2 other songs in this MS; all virgae have hairline ascenders. Scribe of 4v has 1 other song in this MS, no hairline ascenders.
Verbo celum quo firmatur / 38	*GB-Lbl* Sloane 1580, ff. 156v-157v	275: 130 upper voice; 145 lower voice	170: 78 upper voice; 92 lower voice	No. 3 other songs in this MS, but by a different scribe (who forms all virgae with hairline ascenders).
Omnis caro peccaverat / 65	*GB-Cgc* 240/126, pp.12-13	45	32	No. 5 other songs in this MS, but by a different scribe (who forms all virgae with hairline ascenders).
Seinte Marie (Godric of Finchale) / 78	*GB-Lbl* Harley 322, f.74v	32	8	No

Table 16: Songs containing both virgae with and without hairline ascenders.

Table 16 presents data from these seven songs, including whether the scribe notated any other songs within that particular source. Only one example, *Planctus ante nescia*, from *F-EV* 2, is in a manuscript which contains other examples of notation by the same scribe. The songs of *F-EV* 2 are written by three different notators. The first hand in the manuscript (Hand A), found on f.2v, does not use the hairline ascender. The second hand (Hand B) begins on 3r. This scribe has notated three songs, all of which contain virgae with hairline ascenders: *Ego mundi timens naufragium*, *Ave virgo Maria*, and *Planctus ante nescia*, mentioned above. *Planctus* is written over three folios: 3v, 4r and 4v. The notation on 3v and 4r is in Hand B. The notation on 4v, however, is a third hand (Hand C), also without hairline ascenders, responsible for the very end of *Planctus* as well as the following two songs in the manuscript, *Licet eger cum egrotis* and *Est tonus sic*.[154] Figure 15 shows the virgae as notated by Hand A. Figure 16 is an example of the virgae with hairline ascenders, written by Hand B, while Figure 17 again shows virgae without hairline ascenders, but this time written by Hand C.

---

[154] *Est tonus sic* is a didactic piece, and is not included in *MB* 95 as it is not considered a 'song' in the same sense as the others. *MB* 95, 176.
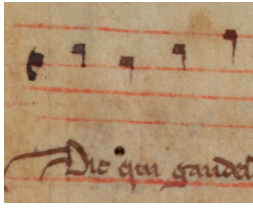
Figure 15: Hand A virgae, in *Dic qui gaudes prosperis*, from *F-EV* 2, f.2v.
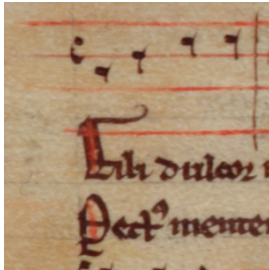
Figure 16: Hand B virgae, in *Planctus ante nescia*, from *F-EV* 2, f.3v.
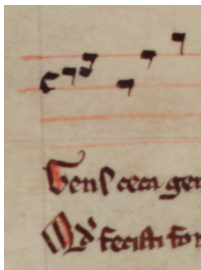
Figure 17: Hand C virgae, in *Planctus ante nescia*, from *F-EV* 2, f.4v.

Because the virga is found so frequently within this group of songs, the distinction between scribes who use the hairline ascender and scribes who do not is a very effective starting point for the identification of individual hands. Neither Hand A nor C forms virgae with hairline ascenders, so different criteria (such as the generally slanted aspect of Hand C and a slightly darker colour of ink) needed to be applied in order to continue the process of identification. However, noting the presence or absence of the ascender is an efficient way to make initial distinctions between hands.

Figures 18 and 19 are two examples of scribes whose virgae contain hairline ascenders. As is the case with most hairline ascenders, the hairline ascenders in *GB-Ob* Bodley 937 are found in the upper right corner of each note-head, and can be interpreted as a result of the misaligned joining of the pen-strokes that form the note-head and the descender.

However, *GB-Ob* Bodley 79 includes two hairline ascenders in both corners of the top of the note-head, as well as descenders on the bottom left-hand corner:

Figure 18: Hairline ascenders in *Qui passus est pridie*, from *GB-Ob* Bodley 937, f.446v.

Figure 19: Hairline ascenders in *Dolorum solatium*, from *GB-Ob* Bodley 79, f.53v.

The frequency at which the scribe of *GB-Ob* Bodley 79 deploys the hairline extension seems to imply its inclusion as an aesthetic choice, akin to a serif.[155] Beyond the frequency, it is also important to note that the process of making the virga with the hairline ascender requires slightly more labour: the hairline ascender requires the scribe to make two separate strokes, lifting pen from paper in between, while the virga sans ascender can be formed in the same two strokes, but without lifting the pen. It is interesting that these hairline extensions can be both indicative of a 'messy' scribe (due to misalignment of pen-strokes, as noted above), or of a scribe's extra attention to detail, as is the case with Bodley 79. However, it is important to note that Bodley 79 qualifies as a special case in regard to its notation: it is included in this discussion as an indication of the varying degrees at which the hairline

---

[155] *MB* 95, 214; Deeming refers to these pen-strokes as 'serifs', though when found on the lower right side of a note she calls them descenders for the purpose of distinguishing these strokes from liquescences.

extensions can be applied (intentionally or unintentionally), but the notation of Bodley 79 should not be interpreted as being indicative of a notational standard.

This type of aesthetic adaptation is certainly not uncommon among scribes of the twelfth and thirteenth centuries; Derolez notes the great amount of individual scribal adaptation that exists even within standard scripts and subtypes, specifically in periods of transition.[156] Rather than allowing this type of adaptation to disqualify a hand from any sort of visual relationship with other, similar writing styles from a certain period of time, Derolez's process involves cataloguing and noting this type of 'distinctive' characteristic and allowing for the existence of individual aesthetic preference within a categorised 'type' of writing.

While the presence of individual aesthetic preference is important in building a larger understanding of written music during this time period, the possibility of an adaptation as being 'intentional' or 'unintentional' is still a grey area. The scribes of both Bodley 937 and Bodley 79 regularly include hairline extensions, but an instinctual reaction to the hairline ascenders in the Bodley 937 example (shown in Figure 18) is to assume they are unintentional. I believe this is the result of two things: the perceived casual nature of the scribal hand, and the habitual relationship interpreters of medieval music notation have with printed music notation. We are accustomed to seeing single note-forms which do not possess an ascending stem as well as a descending one (obviously allowing for what we know to be intentionally ascending stems). A quantitative palaeographical approach, however, offers a tangible corrective to our initial perceptions: out of 16,964 notated virgae, 7,102 have hairline ascenders. While it is not the majority, this amount is large enough that the hairline ascender cannot simply be written off as a mistake—the relatively low number of songs where a scribe uses virgae both with and without also supports this assertion—but, with the exception of

---

[156] Derolez, *The Palaeography of Gothic Manuscript Books*, esp. 10-11; 56-9; 68-70; 72-84.

Bodley 79, the ascenders are not uniform enough within each song for one to willingly assume they are an intentional addition to the form. Therefore, the hairline ascenders must remain in the category of 'scribal adaptation'; perhaps a scribe did not consciously choose to include them when writing virgae, but their consistent use makes them a defining characteristic of specific notational hands. For the scribe of Bodley 79, the key to identifying use of hairline extensions as 'aesthetic' is due to their presence on notes other than virgae: the scribe includes these extensions on every note with a square shape.

Slanted Descenders

The slanted descender is another frequent scribal variation on the formation of the virga within this group of songs, but, though common, it is certainly not specific to the virga form. Unlike a text scribe using exaggerated diagonals to form ascenders or descenders on specific letters only (which can be seen in the ascender of the letter 'd' in Figure 20), music scribes using a curved or slanted descender tend to have a more slanted aspect to their overall notation, as evidenced by the scribal hand in Figure 20, in the song *Sancte Marie virgine*.
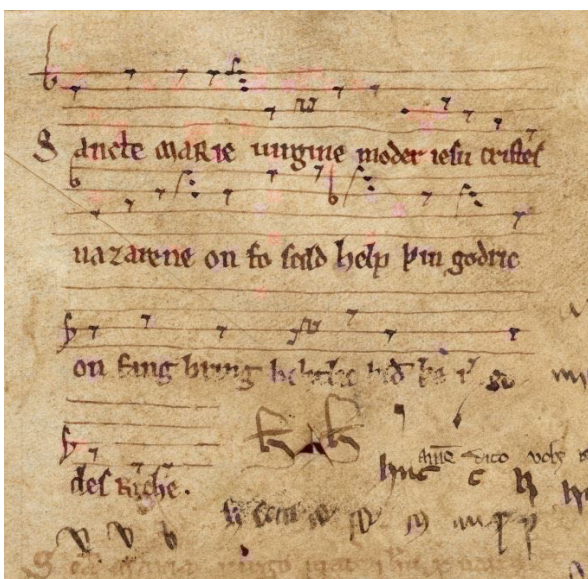
Figure 20: *Sancte Marie virgine*, from *GB-Cu* Mm.iv.28, f.149r.

The virgae in Figure 20 are formed with slanted descenders, but the other note forms also show an overall slanted aspect; the initial stroke of the English conjunctura form is slanted in the same direction as the virgae descenders, and at approximately the same degree, as are the pes and clivis forms. The slanted aspect is particularly easy to identify in the virga, as that form already possesses a descender which is typically vertical, unlike the descender of the English conjunctura, which is often slanted to the left, at the same degree as the initial note-head. This could be a result of an informal hand, or the result of rapid execution, but an examination of the initial note-heads on the virgae shows that the left-hand edge of the note-heads is also at that same angle; this leads me to believe that this particular scribe's slanted aspect may have been the result of a pen-grip. It is certainly possible that such a pen-grip may have been combined with a lack of formality or rapid execution, but it seems unlikely either of the latter reasons would result in the initial placement of the stroke being at such an angle (and then remaining as such for the whole of the song).

Stylistic traits such as slanted aspect allow basic expressions to remain individually identifiable within the scribe's personal cache of note-forms (i.e. a virga still resembles a virga), but when scribes include multiple individual adaptations to musical notation, that same process of identification can become more complex. Figure 21 is an excerpt from *Salve sanctarum sanctissima*, found in *GB-Ob* Bodley 343. This scribe's particularly unique style results in neume forms containing extensions as well as an overall slanted aspect, causing the virgae to resemble the modern letter 'y'.
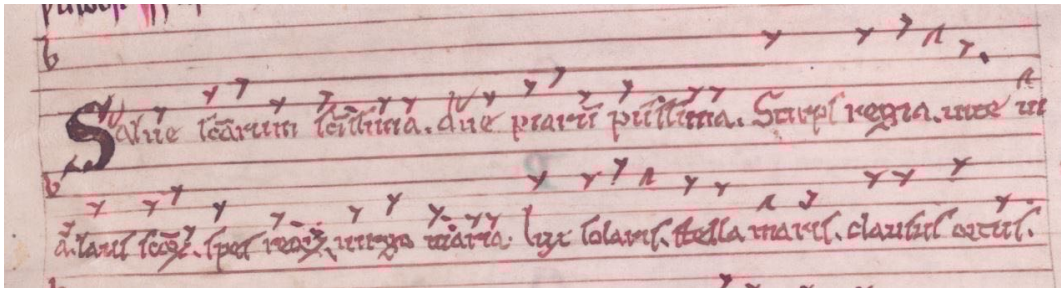
Figure 21: Unique virgae in *Salve sanctarum sanctissima*, from *GB-Ob* Bodley 343, f.xr.

The notation here is also interesting in that the descenders appear to be no less thick than the note-heads, which may have been related to an issue with the scribe's pen. The hand of the text seems to have a similar lack of clear distinction between wide- and narrow-edge strokes. In this case, the equally-thick ascenders would not qualify as 'hairline' at all. As was the case with Bodley 79 above, this notation is a unique case; its inclusion is meant to show the range of interpretations of the virga form, based on general scribal hand as well as on specific adaptations to the virga form.

2.2.ii: The Punctum

		%
Total songs using puncta (out of 111)	82	74
Total puncta written (out of 26,760 total forms)	5,009	19
Number of oblique puncta (out of total puncta)	2,389	48
Number of square puncta	924	18
Number of winged puncta	563	11
Number of casual puncta	1,133	23
Total songs using only puncta (no virgae)	0	0

Table 17: Quantitative data on punctum use in the songs of *MB* 95.

Though much less frequently used than the virga, the punctum is still present in the majority of the songs examined in this thesis; out of 111 songs, only 29 do not contain the punctum.

As noted in the Introduction to this thesis, the punctum can be square or oblique-shaped, as well as in the shape of a small circle, much closer to the 'point' implied by its name. Four different general 'styles' of puncta can be seen below, in Figure 22.

Figure 22: Square, oblique, casual, and 'winged' puncta: *IRL-Dtc* 432, f.6r; *GB-Lbl* Burney 357, f.15v; *GB-Otc* 34, f.153r; *GB-Cgc* 240/126, p.12.

It can be difficult to distinguish between oblique and square puncta, given that each is relatively 'squared' in nature, albeit the former does not rest flat on one side. The examples of oblique and square puncta in Figure 22 show one of the main differences between the two forms: the oblique puncta descend to the right as they are written, whereas square puncta will often have a slight lift to the right. The puncta that cannot be classified as square or oblique-shaped will be called 'casual' for the purposes of this thesis, as will the small, round style of puncta, due to the imprecise nature of their formation and visual appearance. All four styles indicated in Figure 22 will receive greater attention later in this section.

Out of 5,009 puncta found in this study, 48% (2,389) are oblique-shaped. Of the remaining puncta, 1,133 are casual (23%), 924 are square (18%), and 563 are 'winged' (11%). This section will only examine how puncta are formed when used as a single-note form; neume forms such as the climacus and English conjunctura, which contain puncta as part of their individual structure, are discussed separately within this chapter, and the 'puncta' which help to make up those forms are not counted toward the overall numbers of puncta.

As discussed in the Introduction to this thesis, though both the virga and the punctum were previously used to indicate high and low pitches, respectively, this function is only rarely seen to be used consistently by scribes throughout a song. Additionally, while these forms were later adopted to represent longa and brevis forms, there are only a few songs in

MB 95 which could potentially be interpreted as having rhythm.[157] Though several of the songs examined in this thesis have been edited as if rhythmically notated (by Helen Deeming as well as others), the choice to do so within *MB* 95 was made on a song-to-song basis, rather than as a result of examining the notation of the repertoire as a whole.

The 'Winged' Punctum

Of the various forms of puncta, the most puzzling to scholars is the 'winged punctum', so named for the short, often slightly curved pen-strokes found on either side of the form. There are two main ways of writing the form. The first resembles a square punctum with two thin strokes coming out of each side, as shown in Figure 23.
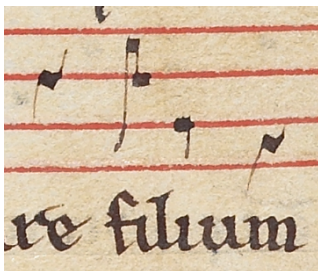
Figure 23: 'Winged' puncta in *Ave mundi spes Maria,* from *GB-Otc* 34, f.153r.

In the case of Figure 23, the scribe seems to have written the note-head and the right-hand ascending 'wing' in a two-stroke motion, without lifting the pen. This is evident from the way that the ascending wings start off looking much thicker, and gradually become thinner as they gain distance from the note-head. The left-hand descending wings have a similar direction-based thickness; that is, they become thinner the further they get from the note head, indicating that they were written with a downward stroke, rather than an upward stroke (which are rarely seen during this time period, both in liturgical and non-liturgical

---

[157] For a discussion of rhythmic interpretation, see *MB* 95, lii-liii.

notation).[158] However, it is difficult to tell whether the descending wing was made before or after the scribe wrote the note-head; I am inclined to believe that making the descending wing after the note-head and ascending wing would result in a cleaner form, and would be much easier to write than switching between thin (pen-edge, typically vertical) strokes and thick (the flat of the nib, typically horizontal or diagonal) strokes.

The second way of writing this form, shown in Figure 24, resembles a slight wave and is easily confused with the similar-looking wave note (though the wave note is typically longer, with multiple and more pronounced 'waves').

Figure 24: 'Winged' puncta in *Flos excellens flos beatus*, from *GB-Ob* Rawlinson D 1225, f.128r.

In the example above from *GB-Ob* Rawl. D 1225, it seems that the form was made without lifting pen from parchment (left wing, note head, right wing). This would explain the left wing's lack of substance compared to the right (and compared to the left-hand descending wings of the first example). It is also possible that the scribe simply chose to forego the left wings for the sake of speed.

While the slight, faded left-hand wings of Figure 24 result in the form looking as if it only has one wing (on the right side), *GB-Otc* 34 often contains single-winged puncta (again, right wing only, shown below in Figure 25). It is difficult to tell if this is the result of too light a hand on the left wing pen-stroke, or if the scribe did this intentionally. When initially examining the notation, it is easy to confuse this form with the epiphonus (a form rarely found within the material examined in this thesis, and which will be discussed at length in

---

[158] See Droste, 'The Musical Notation and Transmission of the Sarum Use, 1225-1500', xx.

Section 2.2.ix), but comparison with other forms of liquescence in the manuscript, combined with an examination of the winged puncta, leads me to believe it is highly unlikely that these are meant to be ascending liquescent forms.

There are also cases in which the single-wing puncta resemble oblique puncta which have had wings added on. 25 shows three different puncta (aVE, visceRA, conTRA), two with one 'wing' and one with the two wings typically associated with the form.
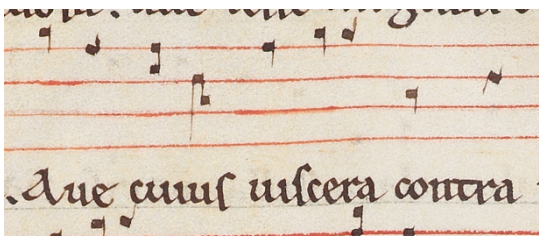
Figure 25: Single-winged puncta in *Ave mundi spes Maria*, from *GB-Otc* 34, f.153r.

A two-stroke formation would explain the amount of one-winged puncta which are present in *GB-Otc* 34: the scribe could have simply forgotten to make the second wing. But in most of the cases of one-winged puncta from *GB-Otc* 34, the right-hand wing seems to have been added with another pen-stroke. This is evident from the messy wing in the first example (over aVE), and a slight hairline descender on the second example (visceRA). The single-winged puncta in Figure 25 are another example of these 'afterthought' wings. It is certainly possible that the scribe of *GB-Otc* 34 changed some of the oblique puncta to winged puncta; the songs in this manuscript have been heavily erased and edited by the same hand (as far as it is possible to tell). At this point, it is difficult to tell exactly why the notator of *GB-Otc* 34 would have added wings to certain puncta, but further examination of winged puncta usage during this time period may offer some insight.

Of the 111 songs in this study, only 11 contain the winged punctum form. These 11 songs are only found in three manuscripts: two songs are from *GB-Occc* 59, three songs are found in *GB-Ob* Rawlinson D 1225, and six are in *GB-Otc* 34. Of those 11 songs, five do not

use any other type of punctum form, which indicates that, in the case of these five songs, the winged form was not likely to be functioning as an addition to the 'standard' punctum form, or as any special kind of punctum; the scribe simply chose to make the punctum form in this manner. This practice was not uncommon in certain types of chant notation; Droste lists the winged punctum alongside more standard versions of the form (such as square or oblique), and considers it a variant of the oblique version, rather than an entirely different note-form.[159] Six of the songs containing winged puncta <u>do</u> feature other scribal adaptations of the punctum form. Table 18 shows exactly how the winged form was used in the songs which also contained 'other' puncta.

---

[159] Droste, 'The Musical Notation and Transmission of the Sarum Use, 1225-1500', 16-17.

Song Name / *MB* no.	Manuscript Info	Puncta (Number & Type)	Winged Puncta Use	Final
Psallat celum plaudit tellus / 10	*GB-Ob* Rawl. D 1225, f.9	19; 15 winged, 4 casual	Difference may be unintentional, winged use possibly aesthetic?	C
Missus Gabriel de celis / 13	*GB-Otc* 34, f.151v	28; 21 winged, 7 oblique	Primarily A, D, G; also E, F	D
Salve mater salvatoris vas electum / 14	*GB-Otc* 34, ff.151v-152v	54; 20 winged, 34 oblique	Primarily G; also A, B♭, C, D	G
Ave mundi spes Maria / 15	*GB-Otc* 34, ff.152v-153v	64; 53 winged, 11 oblique	Primarily G, D, E; also A, B, C, F	G
Salve sancta Dei parens / 16	*GB-Otc* 34, ff.153v-154r	36; 28 winged, 8 oblique	Primarily D, B, C; also F, A, E, G	G
Orbis honor celi scema / 113	*GB-Occc* 59, ff.113v-114r	57; 19 winged, 38 square	All on E	C

Table 18: Winged puncta use in songs containing multiple punctum forms.

As shown above, the distinction between forms in *Psallat celum plaudit tellus* may be unintentional. Figure 26 shows an example of the two styles of puncta written within that single song.
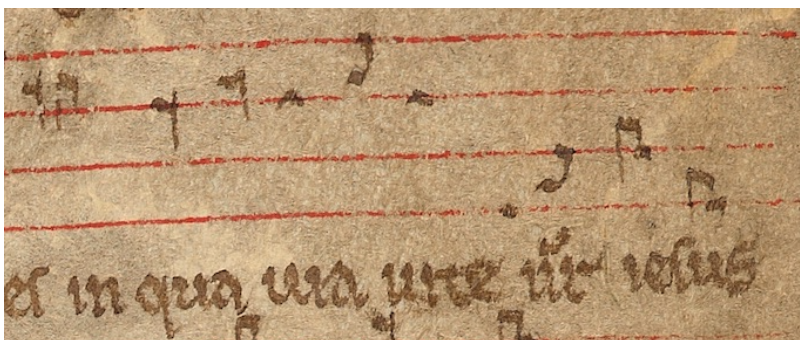
Figure 26: Two styles of puncta in *Psallat celum plaudit tellus,* from *GB-Ob* Rawlinson D 1225, f.9.

There are three puncta in the phrase shown above: 'in qua via vite noster Jesus'. The puncta found on VIa and viTE are winged, while the punctum on NOSter would be classified as casual within this thesis. It is one of four casual puncta in the entire song, two of which are written on shared syllables, such as the example shown below, in Figure 27.
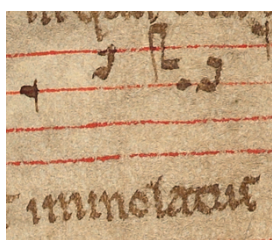
Figure 27: Casual punctum in *Psallat celum plaudit tellus*, from *GB-Ob* Rawlinson D 1225, f.9.

In the figure above, the casual punctum is written on immolaTUS, sharing that syllable with the following pes. The same figure (including the casual punctum) is found over caro deI in verse four. If not for the example in Figure 26, it would have seemed likely that the casual punctum use was related to the available space in the manuscript, and the puncta were simplified in order to leave room for the other forms.

Within the manuscript *GB-Ob* Rawl. D 1225 there are multiple music-hands; the first three songs (which include *Psallat celum*) are all written in unique music-hands, likely sometime at the end of the twelfth century. All three of the hands, however, use winged puncta; the other two songs from this earlier section of the manuscript use the winged punctum exclusively. Based on the low frequency of the casual punctum's use, alongside the fact that the contemporaneous songs from the manuscript use this aesthetic wing, it seems very likely that the casual puncta in *Psallat celum* were not intended to be distinguished from the other puncta in the song.

The four songs from *GB-Otc* 34 which use winged puncta do not seem to have any regulation in regard to their use. The winged puncta are found both more and less frequently than the oblique puncta, and are found on almost all the notes of the scale. Even when

examined in regard to the final of each song there is no indication that the form is being used to highlight certain pitches due to their tonal function. The winged puncta use in the final song in Table 18, *Orbis honor celi scema*, does seem to be related to the tonal function of that particular pitch, and will be discussed further in regard to the neume's historical use.

Researching the winged punctum's historical presence does not offer much information about its general use in twelfth- and thirteenth-century song, but is slightly helpful regarding the form's specific use in *Orbis honor celi scema*. This sign, which Hartzell calls the 'Messine punctum',[160] was first identified by Solange Corbin in *Die Neumen*; her discussion of the neume in the context of twelfth-century manuscripts from Fécamp prompted David Hiley to refer to it as the 'Fécamp mi-neume', also referring to the neume's tonal function implied through its common presence on E, G and A (below B flat), depending on the final.[161] In the case of *Orbis honor*, which has a final of G, the winged punctum's restriction to E is indicative of its function as one such 'mi-neume'. Figure 28 shows the opening line of *Orbis honor cell scema*, with two winged puncta (O maRIa), both on E.
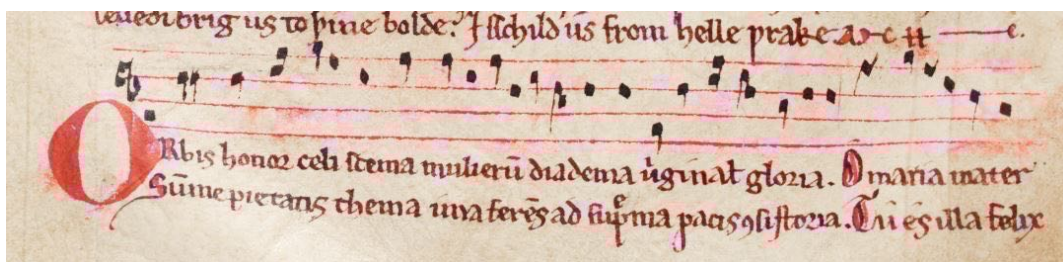
Figure 28: Opening of *Orbis honor celi scema*, from *GB-Occc* 59, f.113v.

It is interesting, however, that there are note-forms written on E in the first stanza of the example shown above which do not feature the winged punctum. The winged punctum is found in a variety of positions (initial, medial, and final syllables of words) in regard to the

---

[160] K.D. Hartzell, *Catalogue of Manuscripts Written or Owned in England up to 1200 Containing Music* (Boydell Press, PMMS: 2006), 519-20.
[161] Corbin, *Die Neumen*, 107-9; David Hiley, 'The Norman Chant Traditions—Normandy, Britain, Sicily', *Proceedings of the Royal Musical Association* 107 (1980-81), 1-33; 18.

song's text, but nothing about its presence is consistent, other than its only ever being written on E. Furthermore, the previous song in the manuscript, *Edi beo þu*, does not utilise the winged punctum at all, even though the song is notated by the same scribe. In the ten instances that E is used in *Edi beo þu*, the form is written as a virga and a cephalicus as well as an oblique punctum, but the winged punctum is not found in the entirety of the song. The example in Figure 28 shows the winged E's directly next to F, raising the possibility that they could have been a visual indicator of 'Fa'; however, there are subsequent E notes in the song that function as 'Mi', but are not winged, and E notes that <u>are</u> winged forms which are not next to F. While many of the winged forms do move directly to F, the scribe does not consistently use the form in this manner.

Hiley has explored the neume's general presence in eleventh- and twelfth-century chant sources, and Thomas Kozachek has posited that a type of 'tonal' punctum (that is, a punctum with a specific pitch-meaning) had already existed in the previous century. Kozachek places its origin in Canterbury, supporting this assertion with examples from tenth-, eleventh-, and twelfth-century pontificals.[162] This neume form's presence in an era before the common adoption of staff notation is unsurprising because, as Hiley points out, the use of a tonal punctum in music with staff notation is redundant; within the context of the repertoire examined in this thesis, it remains as such.

Returning to the songs of *GB-Otc* 34, the winged punctum is present in *Missus Gabriel de celis* on E, G and A (although a B flat is not present). Hartzell notes that the

---

[162] 'In a number of eleventh- and twelfth-century French and English sources the punctum occurring on the lower note of the semitone step was given a special shape, usually rather like the uncinus of Laon notation. It is found in the staffless notation of some north French (mostly Norman) sources of the eleventh century, and in books with staff-notation (where it was, strictly speaking, redundant) in Norman and English books of the twelfth century. It is also to be found in eleventh- to twelfth-century Aquitanian manuscripts, and passed thence into Spain and Portugal, where it survived until the end of the Middle Ages': Hiley, *Western Plainchant: A Handbook*, 388; Thomas Kozachek, 'Tonal Neumes in Anglo-Saxon and Anglo-Norman Pontificals', *Plainsong and Medieval Music* 6, no. 2 (1997): 119-41.

'Messine punctum [is] written on a second syllable in ascending motion, or on the second and third of three syllables in ascending motion'; while the punctum does occur in all three of these contexts in *Missus Gabriel*, it is also found alone, or on a first syllable.[163] Throughout the songs examined from *GB-Otc* 34, this form is not regularly used to represent a specific pitch, or set of pitches. It is found on the first, middle and final syllables of words, both in stressed and unstressed positions. It is preceded and followed by both higher and lower pitches. That is not to say that it never possesses traits similar to those offered in Hiley and Kozachek's discussions of the form, but their analyses cannot account for all instances of its use in these manuscripts.

The variation of the winged punctum's use within this group of songs leaves many questions unanswered. Yet the introduction of the songs in *MB* 95 to the larger examination of notational practice in regard to medieval song will hopefully cast a spotlight on this curious and much-neglected form.

Distinction Between Single-Note Forms

During the process of collecting notational data for this thesis, it was often challenging to distinguish between the single-note forms. The main difference between the forms (other than differently-shaped note-heads, which, as shown above, is not always consistent) is that the virga possesses a stem, and the punctum does not. When a scribe writes particularly short stems, or thin stems (prone to fading), the two forms become substantially more difficult to tell apart. Figure 29 is an example of virgae with particularly short descenders from *Flos pudicitie* (including its underlaid French contrafactum *Flur de virginité*), one of eleven songs

---

[163] Hartzell, *Catalogue of Manuscripts Written or Owned in England up to 1200 Containing Music*, xxiii-xxiv.

found in *GB-Lbl* Arundel 248. The example in Figure 29 shows square-headed virgae alongside rhomb-shaped puncta.
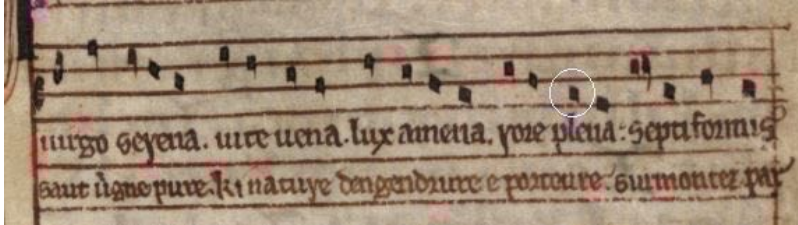
Figure 29: Virgae and puncta in *Flos pudicitie/Flur de virginité*, from *GB-Lbl* Arundel 248, f.153v.

For most of the single notes, the shape of the note-head is enough to tell the two forms apart, but in instances like the first syllable of 'plena' (circled in Figure 29), the form could be interpreted as either a virga or punctum. Because these songs are not rhythmically notated, the distinction between the two forms does not necessarily affect performance, but this unfortunately means that palaeographic interpretation cannot be backed up by rhythmic expectation and must remain an educated guess. I would interpret the circled form as a virga with a particularly short tail, due to the width of the head and the presence of a slight curve on the underside of the form (compare to the virga at 'lux'), indicating downward motion of the pen at the right side of the note-head. Yet comparisons to similar passages do not always offer clarity; the three previous iterations of four descending notes (the third note of which makes up the form under consideration) hardly match one another; Table 19 shows the structure of this passage's notation compared with the textual underlay (with | representing a break between words):

Text	Notation
[vir]go serena	[pes] - virga | virga - punctum - punctum
vite vena	virga - virga | virga - virga
lux amena	virga | virga - punctum - punctum
rore plena	virga - punctum | virga - punctum

Table 19: Comparison of text and notation in four-syllable descending passages in Figure 29.

Though both instances in which the second word contains three syllables ('virgo serena' and 'lux amena') are notated with the 'virga-punctum-punctum' pattern, this is coincidental rather than structural, as the scribe does not give such treatment to the other two four-syllable descending passages, though both contain two words with two syllables each. This pattern of single-note neume arrangement does not appear elsewhere in the song, either. For example, the following line of music, shown in Figure 30, contains a similar repetitive pattern, but this time including liquescence and with each repetition beginning on the same pitch, rather than moving downwards by step.

Figure 30: Repetitive descending patterns in *Flos pudicitie*/*Flur de virginité*, from *GB-Lbl* Arundel 248, f.253v.

This pattern is repeated over a series of words: 'Virtutibus ornantibus, ac moribus vernantibus'. The second, third and fourth iteration of the pattern are written as follows: virga-virga-virga/cephalicus-virga. The first word is written virga-**punctum**-virga/cephalicus-virga. There is no reason why the second syllable of 'virtutibus' merits the use of a punctum, and these examples, frustratingly, do not lead to any conclusive proof that there was (or was not) any significance for this scribe to the distinction between the single-

106

note forms. However, the way that scribes use these forms in relation to one another will nonetheless be a recurring topic throughout this thesis.

2.2.iii: The Pes

		%
Total songs using the pes (out of 111)	101	91
Total pes forms written (out of 26,760 total forms)	1,136	4
Number of pedes that span a 3rd (out of total pedes)	22	2

Table 20: Quantitative data on pes use in the songs of *MB* 95.

Following the single-note neume forms, the two-note forms are the next most commonly found in the songs examined in this thesis. All but ten of the songs examined use the pes form. The pes is used in a variety of placements in regard to word use; it is found on beginning, middle, and final syllables, as well as on single-syllable words. The style of the pes is relatively standard throughout the songs examined: a single, vertical pen-stroke connected perpendicularly to two wider, horizontal strokes (or 'feet', with a nod to the word's origin) on the upper and lower left-hand sides. The multi-stroke construction is evident from the hairline ascenders and descenders sometimes occurring within this form—though not as commonly as in the virga—and can be seen on the lower foot of the first form in Figure 31. Though hairline extensions are common within the pes form, they are less of a distinguishing factor, which is why there is no hairline data in Table 20. The pes form has its own set of scribal adaptations: 'feet' that meet the vertical pen-stroke at an angle rather than perpendicularly, a distance of a third between the two pitches (rather than the typical distance of a tone or semitone), and/or an extended lower foot of the pes, all of which are shown in Figure 31.

107

Figure 31: Three types of pes form, all from *GB-Lbl* Arundel 248, f.153r.

Though diagonal aspect and an elongated lower foot are named above as regularly found scribal adaptations for the pes form, they do not feature in Table 20. This is because, unlike the adaptations found for the virga form, these adaptations are not always used regularly (even in the case of a single scribe). The bottom foot of a pes may technically be longer than the top, but only just barely, and the diagonal aspect of a pes form often has more to do with a scribe's penmanship than actually relating specifically to the construction of the pes form (similar to the case of the hairlines). Diagonal aspect, as noted in section 2.2.i, may result from a scribe's pen grip. While diagonal aspect in regard to the virga was typically most obvious in the stem of the note, it is most notable in the feet of the pes, though it is not always seen in both feet.

Horizontal elongation is another trait that is not unique to the pes form. I have not included specific data for this adaptation because there are distinct elements to its use which make its presence difficult to evaluate and present in a manner that results in useful data. Some instances of horizontal elongation are the result of a scribe's particular way of forming the pes, and are present throughout a song. Sometimes the elongation will be inconsistent, and the lower feet of a pes will vary in their relative length to the upper foot, as shown above in Figure 31. All of the examples in that figure are from the same song, *O labilis, o flebilis*, but the lower foot length of the pes forms is never quite the same; at times, it is even shorter than the upper foot, as shown in Figure 32 (specifically, the second pes in the lower voice, over reGEM).

Figure 32: Varying lengths of lower pes feet in *O labilis, O flebilis*, from *GB-Lbl* Arundel 248, f.153r.

The varying foot-length shown above is an example of what I will call casual elongation. Horizontal elongation in the lower foot of the pes is also found in a much more obviously intentional format, but only at the ends of songs, possibly to give the reader a visual signal that the song is coming to an end. This conscious elongation is not related to penmanship, but is instead an aesthetic choice. Of the 101 songs examined that contain the pes form, only ten feature consciously elongated pes forms at the end of the song:

Song Title / *MB* no.	Manuscript	Voice Parts	Forms Elongated?	Text?
Stillat in stellam radium / 58	*F-Pn* fr. 25408, ff.118r-119r	2	Pes (LV); Clivis (UV)	aMEN
O labilis, O flebilis / 67	*GB-Lbl* Arundel 248, f.153r	2	Pes (LV); Clivis (UV)	perpetuUM
Þe milde Lomb / 71	*GB-Lbl* Arundel 248, f.154r	1	Pes w/wave note as L foot	NOUT/iBROUT/ gelteLES/CHES
Worldes blis ne last no throwe / 72	*GB-Lbl* Arundel 248, f.154r	1	Pes w/wave note as L foot	MON/HEP/biTA UT/CAST/WUD/ NOUT
Spei vena, melle plena / 73	*GB-Lbl* Arundel 248, f.154v	1	Pes	aMEN
Jesu Cristes milde moder / 74	*GB-Lbl* Arundel 248, ff.154v-155r	2	Pes (LV); Clivis (UV)	aMEN
Salve virgo virginum / 75a	*GB-Lbl* Arundel 248, f.155r	3	Pes (UV, MV); Clivis (LV)	TE
Veine pleine de duçur / 75b	*GB-Lbl* Arundel 248, f.155r	3	Pes (UV, MV); Clivis (LV)	mariA
Risum fecit sare / 77	*GB-Lbl* Arundel 248, f.201v	2	Pes w/wave note as L foot (UV); Clivis (LV)	aMEN
Ave Maria preciosa gemma / 107	*GB-Ob* Rawl. D 1225, f.133r	1	Pes	aMEN

Table 21: Songs in *MB* 95 which feature conscious horizontal elongation of the pes form in the final syllable.

Of these ten notated songs, eight are found in *GB-Lbl* Arundel 248 (two of these, *Salve virgo virginum* and *Veine pleine de duçur*, are contrafacta, but are notated individually within the manuscript). Only four of the ten are monophonic, while another four are written for two

voices, and the remaining two (the aforementioned contrafacta) are for three voice parts. If these were the only songs to use conscious elongation, it would be tempting to say that the elongation is a polyphonic aid for a clean finish to a song, offering clearer alignment or synchronisation of voices at the final cadence. However, these are only the songs which feature the pes form in the final, elongated position. Horizontal elongation is not particularly widespread outside of Arundel 248. A more convincing argument in this case would be for scribal preference, because all but one of the songs in that manuscript feature conscious horizontal elongation at the end of the song (the only exception being *Bien deust chanter*).[164] The potential aesthetic and practical functions of the form are not mutually exclusive, however; a scribe choosing to highlight the final syllables of a piece does not prohibit users from being alerted to the song's impending end. There are nine songs further to the ones listed in the table above that end on a pes form, meaning that just over half of the songs in *MB* 95 that feature a pes form on their final syllable use conscious horizontal elongation.[165]

The songs in Arundel 248 also feature varying degrees of conscious horizontal elongation. Figure 33 shows several examples of horizontal elongation from *Jesu Cristes milde moder*.

---

[164] Discussed at length in section 3.4.i, alongside the song's Continental concordances. The reason for including the discussion of conscious elongation in this particular section of the thesis is because the majority of times that it is used is with either the pes or clivis forms (or both, as shown in Table 21). The discussion of elongation will continue in the following section of this thesis with a focus on the clivis.

[165] The songs which end in pes forms without conscious horizontal elongation are: *Amor patris et filii* (*GB-Lbl* Burney 357); *Ave Maria gratia plena* (*GB-Lbl* Royal 8 A xix); *Missus Gabriel de celis* (*GB-Otc* 34); *Salve virgo singularis* (*GB-Lbl* Cotton Titus A xxi); *Salve virgo vere* (*F-EV* 17); *Spe mercedis et corone* (*F-EV* 17); *Worldes blis ne last no Þrowe* (*GB-Ob* Rawl. G 18); *Mellis stilla, maris stella* (*GB-Ob* Rawl. G 18); and *[...] stod ho pere neh* (*GB-Ob* Tanner 169*).

Figure 33: Conscious horizontal elongation in *Jesu Cristes milde moder*, from *GB-Lbl* Arundel 248, f.155r.

The first elongated pes and clivis, written over the word 'gud', are at the end of the verse structure, before the final 'Amen' of the song. The second set of elongations, which are much more exaggerated, are the final neume forms in each voice part, at the end of the melismatic 'Amen'. It would seem here that length is associated with finality, the more elongated forms being the end of the song, rather than the end of a verse.

While, as discussed above, the form typically takes three strokes to form (one vertical stroke and two horizontal strokes), the scribe of *GB-Ob* Bodley 343 eschews this written formation and instead forms a kind of 'cursive' pes, with the top foot and vertical connector made without lifting pen from paper, and the bottom foot added with a separate stroke. This cursive pes is shown in Figure 34.
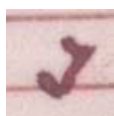
Figure 34: Cursive pes in *Salve sanctarum sanctissima*, from *GB-Ob* Bodley 343, f.xr.

The cursive pes shown above is the only type of pes formed in this style within this group of songs. As mentioned in the discussion of the virga form earlier in this chapter, the scribe of *Salve sanctarum sanctissima*, the song from which Figure 34 is taken, has quite a casual hand, combining unique methods of note formation with a very slanted aspect.

2.2.iv: The Clivis

		%
Total songs using the clivis (out of 111)	102	92
Total clivis forms written (out of 26,760 total forms)	1,267	5
Number of clives that span a 3rd (out of total clives)	130	10

Table 22: Quantitative data on clivis use in the songs of *MB* 95.

Like the pes, the clivis is found in almost all of the songs studied in this thesis; only nine of the songs studied do not use the clivis form. It is used only slightly more often than the pes form (5% of all forms are clives, while 4% are pes), meaning that the songs examined contain descending note-pairs more often than ascending, but the difference is quite small in proportion to the overall number of forms used.

The clivis is typically written as two square note-heads, attached by a vertical line, with a left-hand descender from the upper note. Figure 35 shows a typical clivis form.

Figure 35: Clivis, in *Salve mater salvatoris vas electum*, from *GB-Otc* 34, f.151v.

The song *Salve mater salvatoris vas electum* uses 92 total clives, the highest number of any song studied in this thesis. The scribe seems to have written the first note-head in the typical right to left fashion, then pulled the stroke downward to fashion the connecting vertical line, and to the right again for the second note-head. The lighter colouring of the left-hand stem suggests that it was likely added as a separate stroke, possibly without re-dipping the pen into ink.

Like the pes, the clivis can represent the space of a third (albeit descending rather than ascending). Figure 36 shows a clivis written over the space of a third.

Figure 36: Clivis spanning the interval of a third, in *Interni festi gaudia*, from *GB-Ccc* 253, f.140v.

The scribe of *GB-Ccc* 253 uses the clivis form 35 times in *Interni festi gaudia*. Of those 35 clives, five represent the distance of a third. Out of 1,267 total clives, 130 are written as descending thirds, or about 10%. The example above is constructed in the same manner as Figure 35, with the pen being lifted to make the connecting vertical and the second note-head. The scribe of *GB-Lbl* Burney 357 writes a clivis that descends by a fourth, and is constructed in a slightly different manner, shown in Figure 37.

Figure 37: Clivis covering a fourth in *Amor patris et filii*, from *GB-Lbl* Burney 357, f.15v.

As shown above, the scribe has written the left-hand stem first, then the first note-head (the formation using multiple strokes is indicated by the slight cross formed by the meeting of the vertical line and the unusually thin note-head). The first note-head carries into the second vertical line (the longer of the two) without lifting, but with a slight curve back to the left as the motion of the pen changes. Finally, the bottom note-head is written, again without lifting pen from parchment.

A common adaptation of the typical clivis form is for scribes to include slight right-hand descenders on the lower note of the form, as if the scribe was planning to write more notes in the clivis form, but stopped before writing the third note-head. Figure 38 shows a clivis with a right-hand descender.

Figure 38: Clivis with right-hand descender in *S'onques nuls hoem*, from *GB-Lbl* Harley 3775, f.14r.

The scribe of *GB-Lbl* Harley 3775 not only includes this right-hand descender on the clivis form, he uses it on all forms which typically end with a square note-head. Compounds, extended clivis forms, and even the ascending clivis (discussed below) feature this short, right-hand descender. In this song, the scribe has obviously included it purposefully, since it features so heavily in the notation. By contrast, Figure 39 shows an example of a scribe who includes the right-hand descender for some clives, but not others.

Figure 39: Clives with and without right-hand descenders in *Quid tu vides, Jeremia*, from *GB-Lbl* Harley 5393, f.80v.

In *Quid tu vides, Jeremia*, the scribe includes right-hand descenders on 17 of the 20 clives used in the song. There are also right-hand descenders on two of the four extended clives. In Figure 39, it is not clear whether the bodies of these two forms (the square 'note-heads') were written in the same manner. The first clivis (without the right-hand descender) seems to have

115

been formed without lifting the pen, hence the tapering of the connecting vertical line between the square forms. The clivis with the extra descender seems to have a slight hairline ascender at the right-hand edge of the first square note, as if the vertical line connecting the two forms had been made after lifting the pen. Particular scribes feature the right-hand descender more than others, such as the scribe of *Spe mercedis et corone*, found in *F-EV* 17, who uses it on every form ending with a square note-head.[166]

The clivis is commonly adapted for uses which fall outside its traditional role of representing two descending notes: the clivis is often extended (adding more pitches to the descending series[167]) and is used both in ascending motion (in groups of two and more) and as the basis for square compounds using upward and downward motion. However, due to the clivis' visual similarity to the basic elements of square notation, it is difficult to tell whether any existing scribal preference for this form affected the ways in which ad-hoc compounds were being formed, or if scribes' exposure to early forms of square notation affected the use of square-based ad-hoc forms.[168] One example of an 'ascending' clivis is shown in Figure 40.

Figure 40: 'Ascending' clivis form in *Stella maris singularis*, from *GB-Cgc* 240/126, p.4.

In this example, the scribe has created an ad-hoc 'ascending' form of the clivis, most likely as the result of a mistake—note the left ascending stem present on the preceding virga—but the method chosen to edit this error implies a growing familiarity with the idea of the square note-head as a basic unit of musical expression.[169] The first two notes are divided by a

---

[166] Right-hand descenders on the extended clivis form will be discussed further in section 2.2.v.
[167] To be discussed further in section 2.2.v.
[168] The construction of compound neume forms will be discussed in greater detail in section 2.2.xi.
[169] *MB* 95, 194; see also M.R. James, *A Descriptive Catalogue of the Manuscripts in the Library of Gonville and Caius College, Cambridge*, 3 vols (Cambridge, 1907-14), i, 289-92.

vertical line, allowing for the middle two notes to function as one form within the final three syllables of testimoNIi. Though the 'ascending clivis' was not a standard form, the familiarity of two squared notes linked together allows this ad-hoc form to behave in the same way as the clivis. Instead of relying on individual neume forms to function as the only basic expressions available, scribes were beginning to break these forms down—independently of one another and with their own relative pitch functions—and create basic units of expression that could be combined in myriad ways and used to re-visualise aural delivery.[170]

2.2.v: Three-Note Descending Forms

		%
Total songs using three-note descending forms (out of 111)	96	86.5
Total three-note descending forms written (out of 26,760 total forms)	577	2
Number of climacus forms	97	17 (of three-note descending forms)
Number of extended clives	249	43
Number of English conjuncturae	233	40.4
Number of songs using the climacus and extended clivis (out of 111)	14	12.6
Number of songs using the climacus and English conjunctura	4	3.6
Number of songs using the extended clivis and English conjunctura	8	7
Number of songs using all three forms	11	10

Table 23: Quantitative data on three-note descending form use in the songs of *MB* 95.

The neume form consisting of three separate pitches in descending order is most often known as the climacus. As noted in the Introduction to this thesis, the scribes of this song repertoire often use three distinct visual forms to represent three descending notes—the climacus, the

---

[170] The concept of the square note as 'units' or 'building blocks' will be revisited later in this chapter, in section 2.2.xi.

extended clivis and the English conjunctura—and each will be referred to specifically, though the sound produced by each form ostensibly remains the same.[171] This type of form, traditionally used to represent three notes descending, is found 577 times within the songs studied. Only 15 of the 111 songs studied do not use any type of three-note descending figure. However, the use of such forms can be adapted by individual scribes, and these descending forms can also be extended to include four or even five notes. As noted in Table 23, scribes sometimes used multiple three-note descending forms within the same song; 10% of the songs studied in this thesis use all three forms.

The Climacus

		%
Total songs using the climacus (out of 111)	51	46
Total number of climacus forms written (out of 26,760 total forms)	97	0.3
Number of climacus forms using 4 notes	42	43
Number of climacus forms using 5 notes	1	1
Number of climacus forms moving in non-stepwise motion	1	1

Table 24: Quantitative data on climacus use in the songs of *MB* 95.

The climacus is used less frequently within this group of songs than the other two scribal adaptations of the three-note descending form. It is only found 97 times within this group of songs, making up only 17% of the total number of three-note descending forms written overall. Within that group of 97 climacus forms, only 54 are written as representing three descending pitches; 42 are made up of four notes, and one is made up of five.

The form consists of a virga followed by two puncta. Figure 41 shows an example of the climacus from *Dolorum solatium*, the song in which it is most frequently found.

---

[171] General references will be to the 'three-note descending form', as in the title of this section.
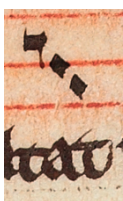
Figure 41: A climacus form in *Dolorum solatium*, from *GB-Ob* Bodley 79, f.53v.

The scribe of *GB-Ob* Bodley 79 uses the climacus form 34 times within this song. As discussed in section 2.2.i, this scribe has a very distinct hand, which includes the aesthetic addition of hairline extensions on all of the figures which include squared note-heads. This should not be interpreted as a typical part of the climacus form; this example was included because of the volume and regularity of the form's use. The climacus forms used in this song alone make up 63 percent of all the three-note climacus forms found within the entire group of songs. The puncta included within the climacus form are frequently oblique, but this is likely related to the high volume of oblique puncta used in these songs (48% of single-note puncta are oblique). Scribes tend to use one style of puncta per song, rather than changing styles between a single punctum and the puncta used within the climacus form. One example of non-oblique puncta used to write the climacus form is *Dulcis Jesu memoria*, the scribe of which writes the puncta found in climacus forms as square notes, shown below in Figure 42.
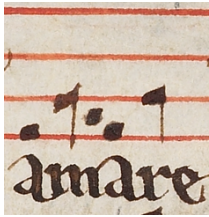
Figure 42: Comparison of single punctum and climacus puncta in *Dulcis Jesu memoria*, from *GB-Ob* Laud misc. 668, f.103r.

As shown above, the scribe makes the climacus puncta in the same manner as the rest of the puncta in the song, even when used outside the context of the three-note descending form (as seen in the single punctum of Amare). In a similar manner, the scribe of *GB-Otc* 34 mimics the climacus construction to write descending passages with multiple syllables (one virga, followed by several puncta). This is shown in Figure 43.
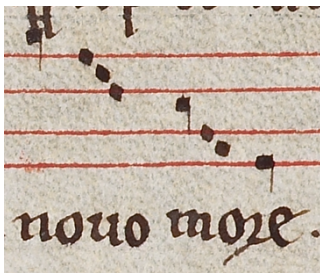
Figure 43: Climacus mimicry in *Missus Gabriel de celis*, from *GB-Otc* 34, f.151v.

This example shows the scribe using a climacus-type construction to write the descending passage of a virga followed by three puncta over the word 'novo', followed by an actual climacus and a virga on 'more'. It is striking that the scribe used a series of three puncta over the second syllable of noVO, rather than writing the second syllable as a climacus form. The Trinity College scribe has a tendency to adapt the climacus form, however. Figure 44 shows another adaptation of the climacus form from the same song.
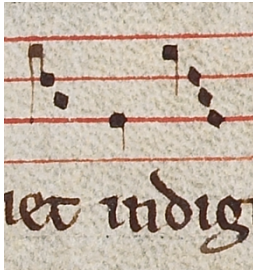
Figure 44: Scribal adaptation of the climacus form in *Missus Gabriel de celis*, from *GB-Otc* 34, f.151v.

Here, the scribe of *GB-Otc* 34 has written two climacus forms, but has constructed the first one as a clivis followed by a punctum, rather than starting with a virga. This scribe uses the clivis/punctum construction interchangeably with the virga/puncta construction. Within this song, *Missus Gabriel de celis*, the scribe uses this clivis/punctum adaptation to write six of the 21 three-note descending forms. No other scribe of any of the other songs studied in this thesis uses this type of climacus adaptation. Figure 44 also includes another common adaptation of the climacus form: adding extra puncta. As noted at the beginning of this section, 42 of the climacus forms found in this study have four total pitches. This is the only four-note example in *Missus Gabriel de celis*.

The Extended Clivis

		%
Total songs using the extended clivis (out of 111)	55	49.5
Total number of extended clives written (out of 26,760 total forms)	249	0.9
Number of extended clivis using 4 notes	40	16
Number of extended clivis moving in non-stepwise motion	20	8

Table 25: Quantitative data on extended clivis use in the songs of *MB* 95.

The extended clivis resembles, as the name suggests, a continuation of the descending square note-heads used to make the clivis form. Within the songs examined in this thesis, the extended clivis is the most frequently used type of three-note descending form. As shown in

Table 25, it is used 249 times, compared with 97 uses of the climacus. An example of the extended clivis is shown in Figure 45.
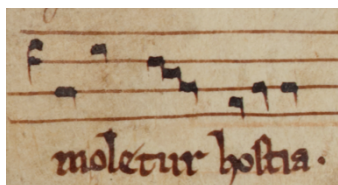
Figure 45: Extended clivis form in *Spe mercedis et corone*, from *F-EV* 17, f.157v.

The scribe of *Spe mercedis et corone* uses 20 extended clivis forms, the most of any song examined in this thesis. As discussed in section 2.2.iv, the scribe of *Spe mercedes et corone* writes the extended clivis form with an additional right-hand descender after the final note, but the practice is not unique to the form; the scribe includes a right-hand descender on every form that ends in a square note-head.

Like the climacus form, the extended clivis can be further extended in terms of pitch. Out of the 249 extended clivis forms in this study, 40 are made up of four notes. The most four-note extended clives used in a single song is 12, found in *Dulci voce mente munda*, from *GB-Lbl* Sloane 1580, shown below, in Figure 46.
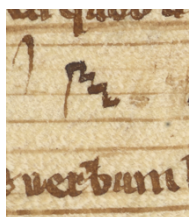
Figure 46: Four-note extended clivis form in *Dulci voce mente munda*, from *GB-Lbl* Sloane 1580, f.155r.

Though the majority of the four-note descending forms are made using the extended clivis, the scribe uses one other four-note descending form in this song. The form begins like a clivis, but is followed by two puncta, in a similar manner to the climacus. This form is shown below, in Figure 47.
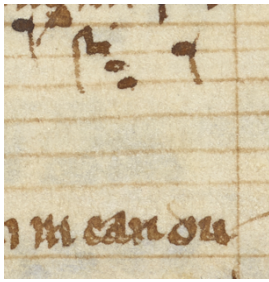
Figure 47: Clivis/climacus form in *Dulci voce mente munda*, from *GB-Lbl* Sloane 1580, f.154r.

Other adaptations of the extended clivis include its formation: the scribe of *GB-Lbl* Burney 357 writes a four-note extended clivis without ever lifting pen from parchment. This form is shown in Figure 48.

Figure 48: Extended clivis in *Amor patris et filii*, from *GB-Lbl* Burney 357, f.15v.

The scribe's hand is slightly messy overall, and the four-note extended clivis is made without lifting the pen, resulting in the form's resemblance to a corkscrew. This example highlights the extent to which physical scribal adaptations can result in visual differentiation between forms, even if they are ostensibly the same figure.

Like the clivis and three-note descending forms, the extended clivis can also be used to write passages that do not descend in stepwise motion. This can be seen in Figure 49.

123

Figure 49: Extended clivis form covering the space of a fifth, in *Hodierne lux diei,* from *GB-Otc* 34, f.154r.

In this example, the scribe of *GB-Otc* 34 has written an extended clivis that spans a fifth, with the second note a third away from each of the outer notes, like a modern triad. Though other three-note descending forms deviate from the standard stepwise motion, this 'triadic' extended clivis is unique to this song.

The English Conjunctura

		%
Total songs using the English conjunctura (out of 111)	38	34
Total number of English conjuncturae written (out of 26,760 total forms)	233	0.8
Number of English conjuncturae using 4 notes (out of total English conjuncturae)	8	3
Number of English conjuncturae using 5 notes	0	0
Number of English conjuncturae moving in non-stepwise motion	0	0

Table 26: Quantitative data on English conjunctura use in the songs of *MB* 95.

The English conjunctura is made up of a virga and two puncta, like the climacus form, but with one major difference: the stem of the virga is connected to the left side of the note-head, rather than the right side, and the note-head is typically slanted downward diagonally, in alignment with the following puncta. Like the extended clivis, the English conjunctura is used far more frequently than the traditional climacus form. Compared to 97 climacus and 249 extended clives, there are 233 English conjuncturae found in this study. The largest number of English conjuncturae used in a single song is from *Stillat in stellam radium*, shown in Figure 50.

124

Figure 50: English conjuncturae in *Stillat in stellam radium*, from *F-Pn* fr. 25408, f.118r.

The scribe of *Stillat in stellam radium* uses 31 total English conjuncturae: 14 in the upper voice of the song, and 17 in the lower. A difference between the English conjunctura and the other two three-note descending forms discussed is that scribes seem less willing to add additional notes to the English conjunctura; out of 233 English conjuncturae, only eight are written with four notes.

2.2.vi: The Scandicus

		%
Total songs using the scandicus (out of 111)	26	23
Total scandicus forms written (out of 26,760 total forms)	113	0.4
Number of '2-3 pes' scandicus forms (out of total scandicus forms)	56	50
Number of 'pes+virga' scandicus forms	34	30
Number of vertical scandicus forms	11	10
Number of 'pes+punctum' scandicus forms	6	5
Number of 'virga+puncta' scandicus forms	5	4
Number of 'ascending clivis' scandicus forms	2	2

Table 27: Quantitative data on scandicus use in the songs of *MB* 95.

The scandicus form is only used in 26 songs—less than 25 percent of the group studied—and written 113 times.[172] The form has the largest number of recurring adaptations out of all the forms discussed in this chapter, yet it is one of the least frequently used. The majority of scribes wrote the form like a pes with an additional square note added below the first note of the pes, as shown in Figure 51. In Table 27 I refer to this form as the '2-3 pes' scandicus, because the second and third pitches resemble the pes. The descriptive names used in the table are unofficial; I have included them to clearly distinguish between the scribal adaptations discussed in this section.

Figure 51: Scandicus form, in *Spei vena melle plena*, from *GB-Lbl* Arundel 248, f.154v.

While this interpretation of the scandicus form is relatively straightforward, the only slight variation involves the middle note: at times, scribes write this with varying degrees of diagonal slant. A scandicus taken from a subsequent song in the same manuscript, Arundel 248 (and written by the same scribe), shows the form with a perfectly square middle note, shown in Figure 52.

---

[172] This is analogous to the more frequent use of the clivis form than the pes form. Because this thesis is a study on notation, there is not room for greater melodic analysis, but the preference of descending multi-pitch forms can be interpreted as a general preference for descending melodic motion over ascending melodic motion.
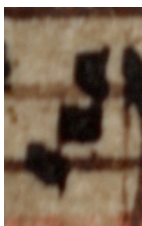
Figure 52: Scandicus with middle-note adaptation, in *Risum fecit sare*, from *GB-Lbl* Arundel 248, f.201v.

The 'note-heads' of the form are all written separately from the vertical lines connecting the form. This is particularly evident in this example, as the first vertical line can be seen to not directly line up with the lowest note in the form, causing a hairline descender, and the second vertical has a slight hairline ascender. The scribe shows similar evidence of this construction in Figure 51. The various scandicus forms are similar to the extended clivis form in that they both often seem to be the result of a pattern in which scribes begin to add squares on to existing forms to represent additional notes (the lowest note in the scandicus being such an example here).

The second most common way scribes wrote the scandicus form in this group of songs was as a combination of a pes (representing the first and second pitches) and a virga (representing the third). In Table 27, this is referred to as the 'pes+virga' scandicus, and can be seen in Figure 53 at LAUdabilis.
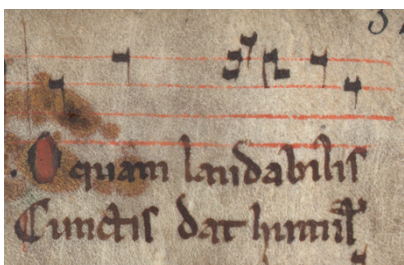
Figure 53: The pes+virga construction of the scandicus form, in *Ex te lux oritur*, from *S-Uu* C 233, f.51r.

While the two forms that make up the scandicus are not physically connected to one another, this form (like the climacus) is still considered one basic expression, because of its

127

association with one syllable of text. The pes+virga construction of the scandicus form is used 34 times, in only seven out of 111 songs.

Similar to the pes+virga construction (but much less commonly used) is the pes+punctum construction. This adaptation is only found in three songs, all within the manuscript *GB-Otc* 34. The form can be seen in Figure 54, at PLEna.
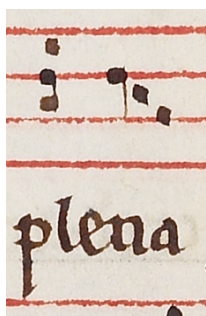
Figure 54: The pes+punctum construction of the scandicus form, in *Hodierne lux diei*, from *GB-Otc* 34, f.154r.

Besides possessing the pes+punctum construction, this scribe also writes the scandicus form in a vertical manner, rather than at an angle, as the majority of the adaptations of this form are written. The scribe of *GB-Otc* 34 is the only scribe to write the scandicus form vertically, as well as using the punctum for the third pitch. The choice of punctum (rather than virga) for the third pitch may be related to this vertical construction, as the descender of the virga would run into the pes form. It is impossible to say whether the use of pes pre-empted the vertical construction or vice versa, but the vertical construction is certainly unique to this scribal adaptation of the scandicus. Within the same manuscript, the scribe uses one other representation of the scandicus form: a virga followed by two puncta, shown in Figure 55.

Figure 55: The virga+puncta construction of the scandicus form, in *Salve mater salvatoris, vas electum*, from *GB-Otc* 34, f.152r.

The scandicus shown here (on homiNUM) is taken from the song *Salve mater salvatoris vas electum*. The scribe uses the scandicus form seven times within the song: five are the virga+puncta construction, and two are written in the pes+punctum style. The form shown in Figure 55 resembles an upside-down climacus figure, and it is uncertain why the two forms of scandicus are used interchangeably. The other two songs in this manuscript which feature the scandicus form both use the pes+punctum style of construction. One possible reason for this variation in style might be that the scribe accidentally wrote a virga, and chose to construct an ad-hoc scandicus form rather than go through the process of erasing and re-writing the form. The scribe may then have chosen to continue using this construction for the sake of continuity, which would explain why the first two are in the pes+punctum style and the subsequent five are written as virga+puncta.

The final adaptation of the scandicus form is only found twice, both times within the same song. Figure 56 shows the form (over coRAUS), which is made up of ascending square notes connected to one another, like an ascending version of the extended clivis form.[173]

Figure 56: The 'ascending extended clivis' form, in *S'onques nuls hoem*, from *GB-Lbl* Harley 3775, f.14r.

---

[173] This form was discussed previously in section 2.2.iv of this thesis.

The scribe of *GB-Lbl* Harley 3775 has a preference for square construction of note-forms, so the existence of this 'ascending extended clivis' form may be less related to the way scribes were interpreting the sound of three ascending pitches, and more to this particular scribe's preference for square construction.

While this study does not have the available range of focus to include a large-scale study of the melodic motion overall, the data on the scandicus forms gathered certainly supports the assertion that ascending melodies were much more likely to be syllabic than melismatic; the lack of ascending neume forms greater than two notes and abundance of single-note forms is the basis for this assertion. The frequency with which the pes form is used in comparison to the scandicus shows that these scribes were much more willing to use two-note ascending neume forms than longer forms. More work will need to be done on the relationship between text and melody, but this is an example of the kind of information that notational palaeography can offer to more 'traditional' examples of historical musicology. Quantitative data can help to reveal larger trends about melodic construction, but without more thorough statistical analysis this type of general assertion is all that can be offered at this time.

2.2.vii: The Torculus

		%
Total songs using torculus forms (out of 111)	45	40.5
Total torculus forms written (out of 26,760 total forms)	165	0.6
Number of square torculus forms (out of total torculus forms)	135	82
Number of curved torculus forms	26	16
Number of 'stacked' torculus forms	2	1.2
Number of 'pes+clivis' torculus forms	1	0.6

Table 28: Quantitative data on torculus use in the songs of *MB* 95.

Unlike the scandicus, the construction of the torculus is relatively uniform. Only slightly more commonly found in this repertoire than the scandicus, the torculus is formed of three square notes. All 165 torculus forms found in this group of songs connect these square notes with thin, vertical lines, as shown in Figure 57, over increDUli.

Figure 57: The torculus form, in *Congratulamini Marie virgini*, from *F-EV* 17, f.156v.

These vertical lines allow the three pitches to be visually connected, ensuring their grouping together over one syllable and their function as one basic expression. In this example, it is difficult to tell whether the squares and connecting lines were drawn individually, with the pen being lifted between each stroke. However, when observing other torculus forms (even by the same scribe) the answer becomes more evident. Figure 58 shows the full stave line from which Figure 57 is taken.

Figure 58: Multiple torculus forms in *Congratulamini Marie virgini*, from *F-EV* 17, f.156v.

The first torculus in Figure 58 (at insulTEmus) shows a slight hairline descender below the first square note-head, which is a clear indication that the pen was lifted between those two strokes. The upper note of the form is less square, even slightly sloped to the right,

showing that the scribe is making the top note and the right-hand vertical line without lifting pen from parchment; rather than a horizontal note-head made using the wide tip of the pen-nib, followed by a straight vertical connector using the thin section of the nib, the scribe has allowed the two to run together. The overall notation is generally tidy and understandable, so it is likely that this is the result of what John Stevens called 'negligent fluency': where the adroitness of a professional scribe results in a lack of caution while writing.[174] Out of the 165 torculus forms written in these songs, 29 have a similar 'curved top', with the second (and highest) note-head running into the third. Even if the second note-head is more typically square, it is very common that the second vertical line (connecting the second and third note-heads) will be shorter than the first; in 13 of the 47 songs in which the torculus appears, the form possesses some type of right-hand slant, curve, or shortened second connector.

There are a few unique instances where scribes have made the form in a way that, at first glance, seems like the construction or formation is different from the typical torculus form. These differences, however, are not the result of a scribe's individual perspective on how the torculus is formed, but rather are the result of a wide pen-nib or scribal error. Figure 59 shows a torculus form that, while still being formed with the typical three note-heads, looks quite different from the other torculus forms.

Figure 59: Torculus form with first-note descender, in *Bien deust chanter*, from *GB-Lbl* Arundel 248, f.155r.

---

[174] Stevens, *The Later Cambridge Songs*, 12.

Aside from the greatly curved head of the top note, this torculus is set apart from the typical neume formation by the extended left-hand vertical connector, which reaches far below the first note head, and is also quite wide for these connecting vertical lines. It looks more like a descender than a connector, as if this scribe had accidentally written a clivis and then added another square note-head at the beginning of the form to fix the mistake. Figure 60 shows a clivis form from the same song.
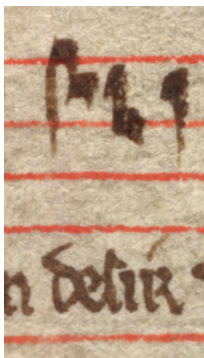
Figure 60: Clivis with hairline descenders, in *Bien deust chanter*, from *GB-Lbl* Arundel 248, f.155r.

The clivis in Figure 60 is strikingly similar to the second two notes of the torculus shown above. It therefore may be an instance of scribal self-correction within this group of songs, but sometimes an examination of possible scribal edits can be more revealing than the examination of individual notes.[175] If this is indeed a correction, however, it is not unique to this scribe: the same method of self-editing (turning a clivis into a torculus) can be seen in Figure 61, from an entirely separate source.

---

[175] See section 2.2.vi on the scandicus, and section 2.2.ix on liquescent forms (specifically the cephalicus) for further discussion of possible scribal error.

Figure 61: Torculus form, in *Stillat in stellam radium*, from *F-Pn* fr. 25408, f.118r.

In the cases shown above, a potential instance of self-editing allows for several possibilities about the writing process: that the scribes are using an exemplar, that the scribes are familiar with the songs, or that the scribes are composing. Whatever the case may be, it certainly seems as though each scribe has written a note form that they did not wish to use, and happened to adapt the mistake in the exact same manner.

The final adaptation is seen rarely, but is an adaptation that is seen in all non-liquescent forms which contain multiple notes: non-stepwise motion. Figure 62 shows a torculus which has been written with the leap of a third between the second and third notes.

Figure 62: Torculus form with a leap of a third, in *Dulcis Jesu memoria*, from *GB-Ob* Laud misc. 668, f.101r.

Though the torculus would be considered a 'basic expression' in Kurkela's system, it is made up of three (sometimes two) distinct pitches, represented here by square note-heads. Though the descending third is a common adaptation within the torculus form, the use of square 'notes' to write out complex forms is seen within the songs examined in this thesis, and will be discussed further in section 2.2.xi.

134

2.2.viii: The Porrectus

		%
Total songs using porrectus forms (out of 111)	53	48
Total porrectus forms written (out of 26,760 total forms)	170	0.6
Number of diagonal porrectus forms (out of total porrectus forms)	149	88
Number of curved porrectus forms	12	7
Number of 4-note porrectus forms	8	5
Number of 'virga+pes' porrectus foms	6	4
Number of '3rd note turned' porrectus forms	3	2
Number of 'plateau' porrectus forms	2	1.2

Table 29: Quantitative data on porrectus use in the songs of *MB* 95.

Like the other three-note forms, the porrectus is used sparingly within this group of songs. Only 170 total porrectus forms are used, in 53 of the 111 songs. The highest number of porrectus forms to be written in a single song is 12. The most common way of writing the porrectus form is very angular: a wide descending diagonal stroke (similar to the ligatures used in mensural notation) connected to a virga on its right side and a vertical descender (or stem) on the left. 149 of the 170 porrectus forms are written in this fashion. The porrectus represents three pitches: typically, a higher note (represented by the highest point of the diagonal), followed by a lower note a tone down (represented by the lowest point of the diagonal), and then a return to the starting note (represented by the virga). Figure 63 shows a typical rendition of this form.

Figure 63: The most common type of porrectus form, in *Felix sanctorum chorus*, from *GB-Lbl* Harley 978, f.10v.

The sharp angles of the form are representative of its construction, where the scribe has used different angles of the pen to make the thin and wide sections of this form. A slight ascender above the diagonal supports the assertion that the left-hand stem was written in a separate pen-stroke from the diagonal. However, the tapering thickness of the ascender leading from the lowest point of the diagonal to the virga looks to be a result of the scribe—having finished the diagonal form—continuing with an upward stroke, rather than lifting pen from parchment.

Like the scandicus and climacus forms, the porrectus does not have a large number of scribal adaptations. The adaptation most commonly found in this group of songs is a result of differentiation in the form's construction: in place of the typical sharp angles where the strokes meet, the form curves when the strokes change direction. This curved form is used 12 times in *Salve sanctarum sanctissima*, shown in Figure 64, over the word SERvorum.
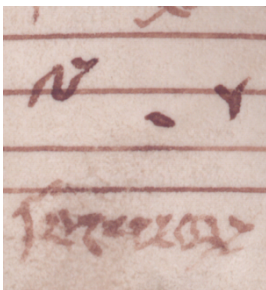
Figure 64: Curved porrectus form, in *Salve sanctarum sanctissima*, from *GB-Ob* Bodley 343, f.xr.

136

This scribe was also featured in section 2.2.iii in regard to the cursive pes form used throughout *Salve sanctarum sanctissima*. Because this is the only scribe to use such a curved form, it can most definitely be attributed to individual scribal preference, rather than any sort of widely used adaptation. That does not disqualify the form from this discussion, however. The song and the scribe are quite important for the study of the porrectus form, not only for the interesting hand, but also because it contains the highest number of porrectus forms out of all 111 songs examined in this thesis.

Just as the climacus forms had adaptations which added more notes to the form, the porrectus form is occasionally found with an extra note. Figure 65 shows an example of the four-note porrectus.
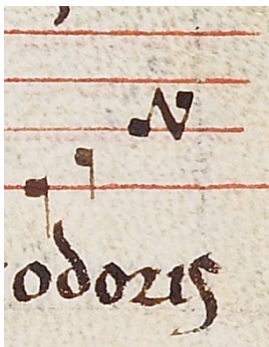
Figure 65: Four-note porrectus form, in *Salve mater salvatoris, vas electum*, from *GB-Otc* 34, f.152r.

In this example, the scribe of *GB-Otc* 34 has simply added a note-head to the bottom of the left-hand stem already present in the porrectus form. This scribe has been mentioned in previous sections in regard to the ad-hoc construction of forms, but in the case of this porrectus adaptation he is not the only scribe to construct a four-note version of the form. Figure 66 shows another scribe who has used the same method to construct a four-note porrectus.
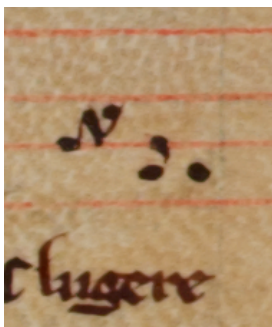
Figure 66: Four-note porrectus form, in *Planctus ante nescia*, from *F-EV* 2, f.4r.

Like the scribe of *GB-Otc* 34, the scribe of *F-EV* 2 has added a note-head to the left-hand

descender of the porrectus to make a four-note form. The scribe adapts the porrectus form,

even though he regularly uses other types of compound neume forms, and therefore was

aware of other methods of compound construction. The choice to adapt the porrectus rather

than use a compound is certainly intriguing, and this scribe's use of compound neume forms

will be discussed further in section 2.2.xi.

The final two adaptations of the form are used rarely: one is a functional adaptation

related to melodic requirement, and the other was likely born of physical necessity. The first

is the inclusion of a leap of a third between the second and third notes, as shown in Figure 67.

Figure 67: Porrectus with leap of a third, in *Hodierne lux diei*, from *GB-Otc* 34, f.154r.

As previously noted, the inclusion of leaps within forms is found in all of the forms

containing multiple pitches, with the exception of liquescence. As evidenced by the preceding

extended clivis form in Figure 67, the scribe of *Hodierne lux diei* writes many forms which include leaps.

The final adaptation, likely born of circumstance, is included because of its distinct visual difference: the note-head of the final virga is facing the opposite direction. This adaptation can be seen in Figure 68, over queRENti.

Figure 68: Porrectus with 'backwards' note-head, in *Ave purum vas argenti*, from *GB-Ob* Digby 2, f.5v.

In this example, the head of the final virga is turned to the outside. Rather than being the result of a scribe who is unfamiliar with the form, or simply mis-wrote it, the adaptation is likely because of circumstance: first, the diagonal line making up the body of the porrectus is quite thick, so there is not much room left for the head of the virga; second, the other virgae the scribe writes in this song are quite large to begin with (the same size as the turned-out virga); and finally, the space between the stave-lines in which the form is being written is not very big (especially compared to the space between the lowest two stave-lines in this example). Therefore, the scribe likely turned the head outward because there was more space for the note-head if written in the turned-out position.

The final adaptation of the porrectus form listed in Table 29 is the 'plateau' style, only found in two songs. Examples of the form are shown below, in Figures 69 and 70.

139
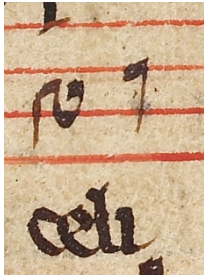
Figure 69: Porrectus form with 'plateau' on the first note, in *Dulcis Jesu memoria*, *GB-Ob* Laud misc. 668, f.103v.
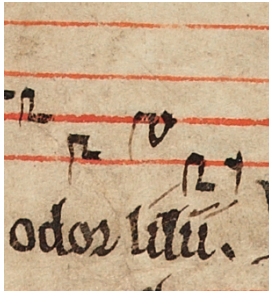
Figure 70: Porrectus form with 'plateau' on the first note, in *Flos convallis est egressus*, *GB-Ob* Rawlinson D 1225, f.129r.

The form is called the 'plateau' porrectus due to the scribes having drawn perpendicular lines to the left-hand stems (similar to note-heads) at the top of the stem, at the first 'pitch' of the form, where the note-head is typically omitted. In both cases shown in the figures above, the scribes do not write the porrectus form in any other way; this is simply a scribal adaptation that, while perhaps not as common as some of the other adaptations seen in this chapter, is certainly not unique to a single scribe.

2.2.ix: Liquescent Neume Forms

Liquescent neumes, as stated in the Introduction to this thesis, are traditionally used to represent specific syllable changes, often to express groupings of multiple consonants, or consonants whose production are both vocalised and continuous, such as l, m, n, and r. The forms represent two pitches, though the distinction between the two (in terms of performance) is uncertain. Two liquescent forms will be discussed in this section, the epiphonus, which is ascending, and the cephalicus, which is descending.

140

		%
Total songs using the epiphonus (out of 111)	29	26
Total epiphonus written (out of 26,760 total forms)	89	0.3
Total upward sloping (out of total epiphonus forms)	52	58
Total single note w/ ascender	31	35
Total single note w/ two ascenders	6	6.7

Table 30: Quantitative data on epiphonus use in the songs of *MB* 95.

The liquescent analogue to the pes, the epiphonus, is found in 26% of the songs examined in this thesis, as noted in the table above. The most common form of the epiphonus resembles the hook of a modern letter 'j' (what I will refer to in this thesis as the 'upward slope' style of epiphonus). Out of 89 instances of the epiphonus form found in this group of songs, 52 are formed using the 'upward slope' method, which bears some resemblance to a modern tick mark (✓). Figure 71 shows the sloping epiphonus, over the word 'sub'.
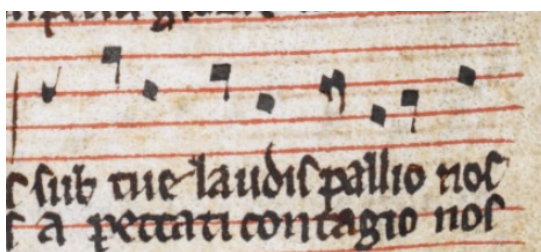
Figure 71: 'Upward slope' epiphonus form, in *Ante thronum regentis omnia*, from *GB-Lbl* Harley 978, f.13r.

The second most common form of epiphonus is the single note with an ascender, typically on the right-hand side of the note-head. An example of this form is shown in Figure 72.
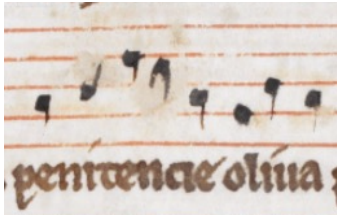
Figure 72: The 'single note' epiphonus, in *Ave gloriosa virginum regina*, from *GB-Lbl* Harley 978, f.7v.

As shown above, this epiphonus form does not taper into the ascender as it does in the case of the upward slope, but is much more angular in regard to the way that the ascender meets the note-head. Though the two examples above are taken from the same manuscript, the songs on folios 2r-11v of Harley 978 have been edited heavily by a later hand. These edited songs feature the single-note epiphonus (as shown in the obviously edited example above), while the unedited songs (from 12r onward) have the upward-sloping epiphonus (shown in Figure 71).

The final, and least common, type of epiphonus is similar to the single note ascender form, but, as noted in Table 30, has two ascenders instead of one. It is found six times throughout the songs in *MB* 95, in only two manuscripts, examples of which are given below in Figures 73 and 74.
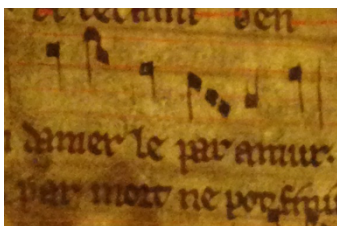
Figure 73: Square epiphonus form with two ascenders, found in *[…] amer me estut a tute fin*, *GB-Lbl* Royal 12 E. i.
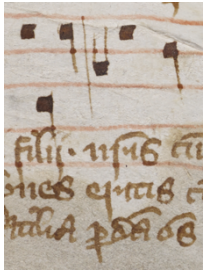
Figure 74: Square epiphonus form with two ascenders, found in *Omnis caro peccaverat*, *GB-Cgc* 240/126, p.12.

This form of epiphonus is the inverse of a way of writing the descending liquescent form, the cephalicus (which is only slightly more commonly found, and will be referred to in the next section as the 'square' cephalicus). The notator of the song shown in Figure 74, *Omnis caro peccaverat*, uses that style of cephalicus twice within the song, which is shown in Figure 75.

Figure 75: Squared cephalicus with two descenders from *Omnis caro peccaverat*, *GB-Cgc* 240/126, p.13.

It is certainly possible that the scribe of *Omnis caro peccaverat* was not familiar with the ascending liquescent form—due to its rare use—and so relied on existing knowledge of the descending liquescent to inform the construction of the epiphonus. However, this scribe does not only use one form of the cephalicus; the most common form of the descending liquescent used in *Omnis caro peccaverat* has a sloping head. There are no other songs from this same notator in *GB-Cgc* 240/126, but there are five other songs by a different notator, only one of which uses the epiphonus form. That scribe uses the method of drawing a square note with a single ascender to represent an ascending liquescence, so the second scribe cannot have relied on the first for this interpretation.

143

Interestingly, the bulk of the epiphonus use in the songs studied is made up by its presence in two manuscripts: *GB-Lbl* Arundel 248 and *GB-Lbl* Harley 978. With ten and eleven songs contained in each manuscript, respectively, they easily hold the largest amounts of music of all the miscellany manuscripts examined in this thesis. While it is entirely likely that the highest number of epiphonus forms are found in these large collections, it does raise the possibility of a correlation between the amount of music contained in a manuscript, and the variety of notational forms used. These are the only two manuscripts examined in this thesis that contain ten or more songs (not including contrafacta), and also the only two manuscripts which feature all of the notational forms discussed in section 2.2 of this thesis.

The Cephalicus

		%
Total songs using the cephalicus (out of 111)	80	72
Total cephalicus forms written (out of 26,760 total forms)	599	2
Total sloping head (out of total cephalicus forms)	481	80
Total reverse crook	75	12.5
Total 9-shaped	19	3.2
Total crook	14	2.3
Total square	10	1.6

Table 31: Quantitative data on cephalicus use in the songs of *MB* 95.

The cephalicus is the liquescent partner of the clivis. Like the epiphonus, the cephalicus forgoes the distinct note-heads of its non-liquescent form in favour of a generally sloping shape.[176] Use of the cephalicus is much more common than the epiphonus: there are 599 cephalicus forms used in these songs, as opposed to 89 epiphonus forms.

---

[176] Traditional use of the form followed similar guidelines as the epiphonus, which are detailed in the Introduction of this thesis, as noted above.

In these 111 songs, there are five distinct scribal adaptations of the descending liquescent neume form. I have given names to these adapted forms which describe their visual attributes: the 'sloping head' cephalicus, the 'reverse' cephalicus, the 'curled' cephalicus, the 'crook', and the 'square'. They can be seen, in this order, in Figure 76.
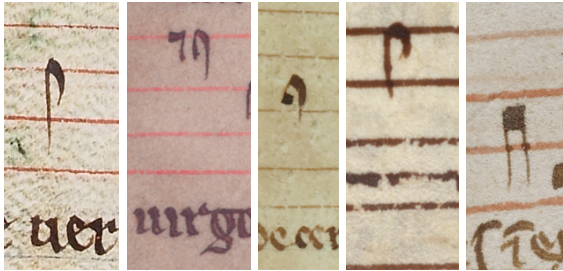
Figure 76: Five adaptations of the cephalicus form: *GB-Otc* 34, f.151v; *GB-Ob* Bodley 343, f.x_v; *GB-Lma* Cust. 1, f.160v; *GB-Lbl* Sloane 1580, f.156v; *GB-Cgc* 240/126, p.13.

Out of 599 cephalicus forms, 481 are written using the 'sloping head' form, shown in Figure 77.

Figure 77: Cephalicus with sloping head, from *Flos pudicitie*, *GB-Lbl* Arundel 248, f.153v.

This example comes from the song *Flos pudicitie* (and its French contrafactum, *Flur de virginité*, underlaid), which contains 45 uses of the cephalicus form, all in this style. Out of all the songs studied in this thesis, this is the highest number of descending liquescent forms to be used in a single song. The sloping head cephalicus is written with a left-hand vertical stroke, the top of which lines up with the note-head, and represents the initial pitch; this is followed by a thick slope which narrows as it descends, similar to the shape of a scythe. As

seen in the difference between Figure 76 and Figure 77, the initial thickness of the sloping head is largely dependent upon the size of each scribe's pen nib. The scribe of the example in Figure 76 has also chosen to curve the thinnest point of the sloping head slightly back around toward the left-hand descender, which is twice the length of the sloping head. The scribe of Figure 77 ends the head as it reaches its thinnest point, which stops just short of being the same length as the left-hand descender.

The next most common type of cephalicus is the 'reverse' cephalicus, so named due to its resemblance to a cephalicus that has been written from right to left, rather than left to right. The form is found only 75 times in five songs, and can be seen in Figure 78.

Figure 78: Reverse cephalicus, from *Ave gloriosa virginum regina*, in *GB-Lbl* Harley 978, f.7r.

As noted above, much of the musical content of Harley 978 has been edited heavily by a later scribe. Nine of the ten songs from the manuscript included in this study were written by the same scribe, including *Ave gloriosa virginum regina*. Both of the Harley scribes use the sloping-head form of the cephalicus, but 20 of the 30 cephalicus forms in *Ave gloriosa virginum regina* have been edited from the sloping head to the reverse cephalicus form shown above. However, many of these edited forms still show traces of their original form; looking at Figure 78, it is still possible to see some of the stem from the original sloped cephalicus. There is no way of knowing the motivation behind this later scribe's actions: whether the two

forms were perceived as having different aural representations, or if this was merely a case of the later scribe preferring one adaptation over the other.[177]

The curved cephalicus form is named for the curled bit on the left-hand side, where the descender would be in the cephalicus with the sloping head. The cephalicus form is only seen in its curved adaptation 19 times, but most often the curve is tight, as in the example from Figure 76. However, the scribe of *Processit in capite* wrote a relaxed curve which returns to meet the other side of the form, resembling a modern number '9', shown below in Figure 79.
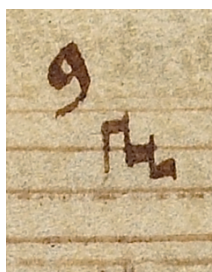
Figure 79: 9-shaped cephalicus in *Processit in capite*, from *GB-Ob* Bodley 937, f.446v.

The curved cephalicus from *GB-Ob* Bodley 937 is only used two times, but clearly shows that the scribe made this form using two pen-strokes: one to form the left-hand curve, and one stroke for the right-hand descending section of the neume. Closer examination of the example shown in Figure 76 reveals the same two-stroke format.

The 'crook' cephalicus is named for its resemblance to the type of staff carried by shepherds. It is written only 14 times, in three songs from two different manuscripts. The example shown in Figure 76 is from *GB-Lbl* Sloane 1580. The only other manuscript in

---

[177] Other note forms in Harley 978 have received similar treatment from the editorial hand. For example, the climacus form is often changed to the English conjunctura. For further discussion on the possible reasons behind this editing (including the previously-held belief by many scholars that the editorial hand was attempting to make the notation rhythmic), see Helen Deeming, 'An English monastic miscellany: the Reading manuscript of *Sumer is icumen in*', in *Manuscripts and Medieval Song: Inscription, Performance, Context,* Deeming and Elizabeth Eva Leach, eds. (Cambridge: Cambridge University Press, 2015), 116-140; 134-5.

which the scribe has used this adaptation of the cephalicus form is *GB-Ob* Bodley 343. The scribe of these two songs is the only one to exclusively use this cephalicus form; the scribe from *GB-Lbl* Sloane 1580 also uses the sloping head adaptation within the same song. The crook form from *GB-Ob* Bodley 343 can be seen in Figure 80.
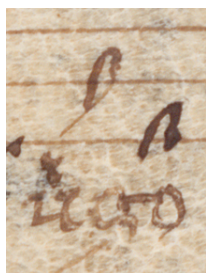
Figure 80: Crook-shaped cephalicus in *Specialis graciosa*, from *GB-Ob* Bodley 343, f.64v.

The cephalicus is the first form shown in the image, formed as a single stroke. The accidental-seeming pen trail (which starts on the upper right-hand side of the form and trails down and to the left) indicates that this form was made starting at its lower left-hand side. This particular cephalicus is difficult to distinguish from the clivis form immediately following; the form can be identified as a clivis by the presence of a slight 'note-head' on the right-hand side.

Though the only available examples of this 'crook' adaptation are from but two scribes, the main characteristic which distinguishes the crook cephalicus from the other scribal adaptations is its single-stroke formation. All of the other cephalicus forms are made using at least two different strokes, with the pen being lifted from the page between each stroke. Its rare presence might initially be cause to wonder if this formation was the result of scribal error, but the fact that at least one scribe used this form exclusively to represent the descending liquescent allows for intentionality behind its use, thereby allowing the crook-shaped cephalicus to join the ranks of the scribal adaptation.

The final cephalicus adaptation is the square cephalicus (discussed above, in relation to the epiphonus with two ascenders). This form is only found ten times (less than two percent of the total cephalicus forms found in these songs), but its sporadic presence in songs whose scribes almost always favour another adaptation of the form raises questions about how a form may have been re-constructed in an ad-hoc manner. Figure 81 shows the opening line of *Scribere proposui*.
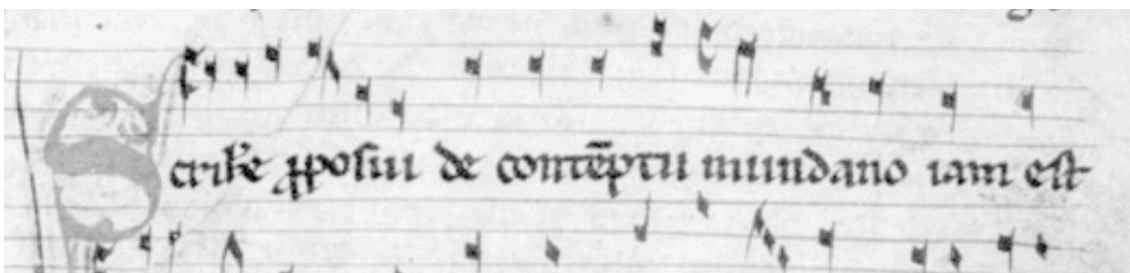
Figure 81: Square cephalicus in *Scribere proposui*, from *F-Pn* fr. 25408, f.120r.

This song uses only 56 basic expressions, but that number includes five examples of the descending liquescence: four are written in the sloped-head style, one in the square. In Figure 81, the first cephalicus (over proPOsui) has a sloped head, while the second (over MUNdano) is a square note-head with both a left and a right-hand descender. This is the 'square' cephalicus. It seems likely that, in the case of *F-Pn* fr. 25408, this was a scribal edit: the hairline ascender present at the top right of the note-head closely resembles the hairline ascenders present on all of the virgae in this song. The scribe may have accidentally written a virga, and added the left-hand descender to make the form into a cephalicus. The possibility of multiple scribes fixing errata in the same way was discussed previously, in regard to the torculus form (section 2.2.vii).

Only one scribe uses this square form exclusively, but only uses the descending liquescent twice. Figure 82 shows the opening passage of *Salve celi ianua*, which includes an example of this scribe's square cephalicus.

Figure 82: Square cephalicus in the opening passage of *Salve celi ianua*, from *F-EV* 17, f.156r.

There are eight songs in *F-EV* 17, the manuscript which contains this song. The songs are written by multiple scribes, and, while it is possible that the scribe of *Salve celi ianua* also wrote another song in the manuscript, *O domina dominatrix,* the single cephalicus form used in that song is written with a sloping head. Therefore, it is still possible that a single scribe wrote both songs, but if that is the case, then the scribe did not use the square cephalicus exclusively across multiple songs. With limited liquescent examples, it cannot be conclusively argued either way.

2.2.x: The Wave Note

		%
Total songs using the wave note (out of 111)	21	19
Total wave notes written (out of 26,760 total forms)	263	1
Number of single wave notes (out of total wave notes)	165	63
Number of wave notes as lower note of pes	60	23
Number of wave notes as upper note of clivis	12	45.5
Number of single wave notes with liquescence	7	2.5
Number of wave notes as start of a compound	15	5.5
Number of wave notes as middle of a compound	4	1.5

Table 32: Quantitative data on wave note use in the songs of *MB* 95.

The wave note, while technically a single-note form, is examined separately from the other single-note forms due to its peculiar shape and ambiguous meaning. Visually, the wave note

resembles a horizontal zig-zag, akin to a modern representation of a sound wave, but with sharp points in place of curves. The number of total 'points' is typically about three, though the number can vary depending on the scribe. As noted in the Introduction to this thesis, the wave-note is similar in structure to the quilisma, though the conventions of use typically associated with the latter cannot be applied to the former.

As shown in Table 32, the wave note has a variety of possible uses, including by itself and as part of a larger compound form. The wave note is most commonly found alone; out of 263 wave notes used in this group of songs, 165 of them are single notes. An example of a single wave note can be seen in Figure 83.

Figure 83: A single wave note, in *Veni sancte spiritus*, from *GB-Lbl* Sloane 1580, f.152v.

The wave note in the example is from *GB-Lbl* Sloane 1580. The scribe of *Veni sancte spiritus* also possibly notated two other songs in the manuscript.[178] Though the hand is 'inconsistent' and 'messy', one reason for the belief that the three songs may have been written by the same notator is the frequent use of the wave note.[179] The wave notes written in these three songs count for 127 of the 165 single wave notes written overall. The scribe has various ways of writing the wave note: the note shown in Figure 83 resembles a modern letter 'w', but some of the wave notes formed by this scribe are longer, using as many as four peaks.

Beside the single note, the next most common use of the wave note is as the lower note of a pes. The wave note is used as the lower note of a pes 60 times throughout these songs, and can be seen in Figure 84, from *Dulcis Jesu memoria*.

---

[178] *Inter flores electorum*, ff.143v-145r (*MB* no. 35); and *Dulci voce mente munda*, ff.145r-147v (*MB* no. 36).
[179] *MB* 95, 183.
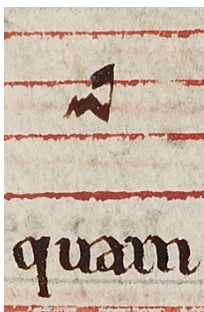
Figure 84: Wave note as lower note of a pes, in *Dulcis Jesu memoria*, from *GB-Ob* Laud misc. 668, f.101r.

The form's construction is similar to that of the typical pes form; the wave note is written in place of the lower foot, with a vertical line connecting it to the upper foot. Because so little information is available about this form, it is difficult to say whether the wave note might function like a modern mordent, as has been generally speculated based on the visual nature of the form, as well as writings about the form itself (discussed previously in the Introduction). If that were the case, it might explain the frequency with which the wave note is used as the lower note of the pes: if the wave note were similar to an upper trill, it would create a greater sense of direction towards the upper note than if a traditional pes form were used.

Similarly, the form is also found as the upper note of a clivis, shown in Figure 85.

Figure 85: Wave note as upper note of a clivis, in *Spei vena melle plena*, from *GB-Lbl* Arundel 248, f.154v.

As in the case of the discussion of the wave note within the pes form, it is possible to use the wave note's place within the clivis as a potential guide for performance. If the wave note

152

were similar to a downward-resolving trill, using it in conjunction with the clivis form would give a greater sense of resolution to the clivis form. However, these combinations are rarely used at the ends of phrases, so it seems less likely that their inclusion would be a way of leading to a place of tonal importance. While this visual speculation seems to lack evidence beyond its existence, it is very telling that, both in the case of the pes and the clivis forms which include wave notes, there are no cases in which the wave note appears as the second note in either form. 27% of all wave notes used in this group of songs are part of either a pes or a clivis; a substantial number in relation to the total amount of forms used. The fact that the wave note never appears as the second note is quite telling, especially in a group of songs which frequently see scribes using forms in a variety of ways.

The wave note's combination with liquescent and compound forms can also offer support. The combination with liquescent forms is rare (only seven times), and oftentimes, due to the variety of ways that both the wave note and liquescent forms are written, it is difficult to even identify the forms. In certain cases it is necessary to look more closely at a scribe's overall hand, such as *Quid tu vides, Jeremia*, from *GB-Lbl* Harley 5393. The three-voice song includes regular liquescence, but at the start of the second stave (shown in Figure 86), a figure appears in the top voice that poses something of a problem.

Figure 86: Wave note combined with ascending liquescence, in *Quid tu vides, Jeremia*, from *GB-Lbl Harley 5393*, f.80v.

The form in question, written over voLANtem, resembles a wave note in which the final stroke turns sharply upward and continues for more than twice the height of the form. At first glance it is difficult to tell what the upward stroke at the end may mean, but an examination of the epiphonus form (in the same voice part, over texIT) shows that, when writing ascending liquescence, this scribe favours an upward hook which is nearly vertical. By comparison, the end of the wave note form has a similar angle, and on closer inspection, the wave note form actually ends in a slight 'hook', just like the epiphonus. In the other six instances where a wave note is combined with liquescence, the wave note always precedes the liquescence. This follows the pattern discussed above in regard to the wave note's positioning when combined with two-note forms, but also follows an established pattern in liquescence use, in which the liquescent is always at the end of any combined form.

Finally, the wave note is used 19 times in compound forms.[180] As noted above in Table 32, of those 19 wave note compounds, 15 are found at the beginning of the form. 13 of those compounds which start with a wave note are found in *Salve mater salvatoris vas electum*, an example of which is shown below in Figure 87.

---

[180] For further discussion of compound forms beyond their use with the wave note, see section 2.2.xi.

Figure 87: Wave-note compound in *Salve mater salvatoris vas electum*, from *GB-Otc* 34, f.152v.

The compound shown above is made of a wave note, a single-note form, and a cephalicus which starts a tone higher and then returns to the original pitch. This form is common within *Salve mater salvatoris vas electum*, and the scribe also frequently uses the wave note at the start of both pes and clivis forms, both as a substitute for the first pitch, and also with both pitches intact. A comparison of the two ways in which the *Salve mater salvatoris* scribe writes the wave note-clivis combination is shown below, in Figure 88.
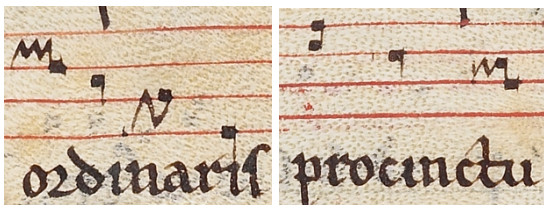
Figure 88: Comparison of wave note use in *Salve mater salvatoris vas electum*, in *GB-Otc* 34, f.152v.

The first wave note/clivis, over ORdinaris, is written in a similar manner to the wave note/clivis forms discussed earlier in this section, in which the wave note replaces the first note of the clivis. The second example, over procincTU, has a wave note at the start of the form, but also includes a square note head at the start of the clivis form. The scribe writes the wave note/clivis form seven times: three times with the wave note replacing the upper note of the clivis, and four times with the additional upper clivis note. The scribal hand is very clear and neat, so it is unlikely that the distinction between the two different types of combinations is unintentional.

The wave note is also found in the middle of compound forms, though this only happens four times throughout all of the songs examined. Three of these compounds are

found in *Dulcis Jesu memoria*, discussed earlier in this section in relation to the wave note combinations with the pes and clivis forms. An example of the wave note in the middle of a compound form is shown below, in Figure 89.
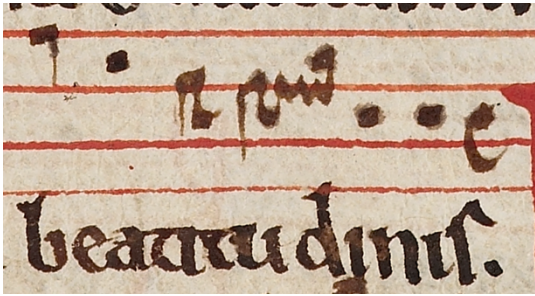
Figure 89: The wave note used in the middle of a compound form, in *Dulcis Jesu memoria*, from *GB-Ob* Laud misc. 668, f.103r.

The compound form, shown above on beatiTUdinis, is a compound of four notes (counting the wave note as a single note for the purposes of this discussion). The wave note appears as the third note in the compound, with the final note a tone higher, similar to the manner in which the wave note was used as the lower note of the pes. Though much is still unknown about the aural qualities of the wave note, its existence in a medial position (as well as its use alone) implies a sonic independence that forms such as liquescence do not possess.

Liquescent forms require an initial starting note which is then adapted by the liquescence. The wave note, while ambiguous in terms of vocal production, does not require another form in order to be used. It is unclear, therefore, why it is never offered as a final note when combined with other figures. As noted above, it is never the second note of either a pes or a clivis, and within this group of songs it is only used in primary or medial positions in compound forms. The only possible conjecture to make from a purely notational point of view is that the form can exist alone, or in an adaptive role (similar to liquescent forms) in which it acts upon the following note, resulting in an ornamented arrival at the final pitch.

156

2.2.xi: Compound Neume Forms

		%
Total songs using compound forms (out of 111)	72	65
Total compound forms written (out of 26,760 total forms)	444	1.5
Number of four-note compounds (out of total compound forms)	274	62
Number of five-note compounds	97	22
Number of six-note compounds	25	5.5
Number of seven-note compounds	10	2.3
Number of nine-note compounds	3	0.5
Number of ten-note (and higher) compounds	11	2.5
Number of 'Amen' compounds	24	5.4
Songs featuring compounds with liquescence (out of 111 songs)	39	35

Table 33: Quantitative data on compound form use in the songs of *MB* 95.

Compound neume forms consist of four or more notes set to one syllable. While the data in Table 33 is presented in regard to the number of pitches within the compound, there are two main visual categories of compound forms: those made up of square notes joined together, and ad-hoc forms made from joining up existing forms (or parts of existing forms) to create new forms altogether. Of the 72 songs using compound forms, 19 include these 'square compounds', meaning that, for this group of songs, it is more common for scribes to create compounds from existing forms than it is for them to string groups of square notes together. However, as discussed previously in this section, many of the ad-hoc uses of certain forms (as well as the substantial presence of square compounds, even if they are in the minority) indicate a growing acceptance of scribes to use the square 'note' as the basis for which semiotic meaning is derived.

These square compounds are not unique to these songs; as well as a wide use in subsequent centuries and in Continental material (including the trouvère manuscripts that will

be discussed in Chapter Three of this thesis), they have a larger use within insular repertoire, not least of which includes the songs in *GB-Cu* Ff.I.17(I). In his edition, Stevens co-opts Hiley's 'symbolic style of representation' which uses letters to denote figures in relation to their relative pitch.[181] In Hiley's system, H = high, M = middle, and L = low, and I will continue to use this system to refer to specific square compound forms in this thesis.

The song *Dulcis Jesu memoria* (previously mentioned in section 2.2.x in regard to the multiple compound forms present in that manuscript which contain the wave note), contains a large number of square compounds, most frequently a five-note MLMHL compound, shown below in Figure 90, on the penultimate syllable of the word invenienTIbus.
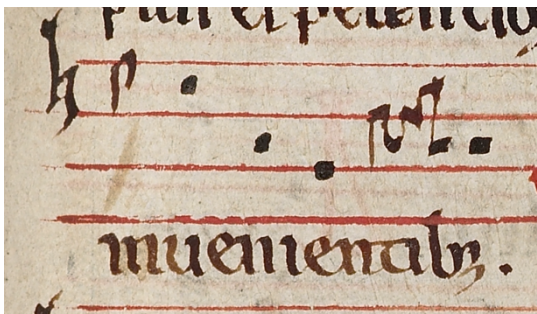
Figure 90: Five-note MLMHL compound in *Dulcis Jesu memoria*, from *GB-Ob* Laud misc. 668, f.101r.

The MLMHL compound is featured seven times in this song, as is a four-note version, MLMH, although two of the four-note compounds include a wave note in place of the second 'M'. The scribe regularly uses wave note compounds, as mentioned above, substituting the wave note for various square pitches within the compound.

A similarly high number of square compounds are found in *F-EV* 2, many of which are from *Planctus ante nescia*, shown in Figure 91.

---

[181] Stevens, *The Later Cambridge Songs*, 13. Stevens cites Hiley, *Western Plainchant*, 342-3, table IV.I.I.
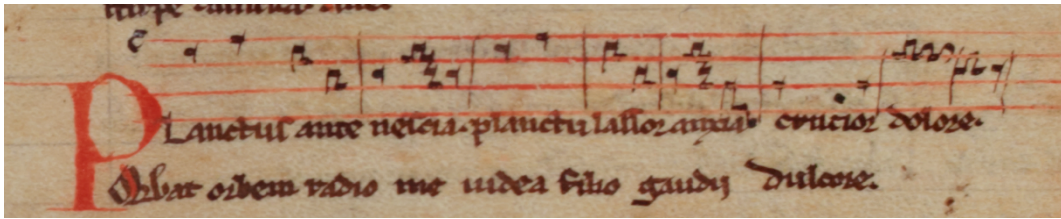
Figure 91: Square compound forms, in *Planctus ante nescia*, from *F-EV* 2, f.3v.

The figure above shows the first stave of *Planctus ante nescia*, which contains three compound forms made up of square notes. The first two, on nesCIa and anXIa, are both five-note compounds which are ordered MHMLL₂.[182] The third compound, on DOlore, is a seven-note compound which is ordered LHLHLH$_L$.[183] Even though the inclusion of a liquescent form disqualifies this form from being considered an entirely square compound, the majority of units are still square notes, which is interesting considering that the first six 'notes' are made up of the same two pitches. The scribe of *Planctus ante nescia* uses this compound form several times throughout the song, but it is the only time that this type of 'back-and-forth' compound is seen throughout the songs of *MB* 95.

The other style of forming compounds involves using existing forms (and styles of forms) to make ad-hoc compounds. Scribes often develop individual methods of writing such compounds, based on personal preference. The scribe of *GB-Lbl* Royal 5 F. vii uses the method of combining existing forms with the type of descending puncta that would be found in the climacus form. An example of this is shown in Figure 92.

---

[182] This is a case in which Hiley's method requires some adaptation: the subscript here denotes that the second 'L' is lower than the first L.

[183] Once again, I have adapted Hiley's method here, using subscript to denote that the final L is a liquescent form, not to imply that the pitch is different, but to denote that the return to L is not a square note.
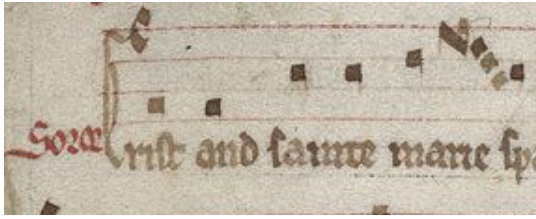
Figure 92: Six-note compound, in *Crist and Seinte Marie*, from *GB-Lbl* Royal 5 F. vii, f.85r.

This six-note compound, found over maRIe, is made up of a porrectus form and three descending puncta. The scribe uses this form again in the following two songs in the manuscript, *Sainte Marie, virgine,* and *Sainte Marie, Christes bur*, often in a combination made of a pes and descending puncta, as well as including four-note climacus forms alongside the traditional three-note descending forms. For this scribe, the descending puncta function much in the same way as the square units function for scribes writing square compounds, albeit the puncta are only used for descending pitches, whereas the square compounds have more freedom of movement.

Another widely-used style of compound is the practice of combining of existing forms with liquescence. 39 of the 111 songs examined feature compounds with liquescence. Sometimes the liquescent form is attached to the existing form, but oftentimes it is simply written close to the other form, with the implication that both forms are to be sung on the same syllable of text. The manuscript *GB-Lbl* Arundel 248 has many examples of this, and an example from *Magdalene laudes plene* is shown below, in Figure 93.

Figure 93: Torculus and cephalicus compound, in *Magdalene laudes plene*, from *GB-Lbl* Arundel 248, f.153v.

The compound, found on the penultimate syllable of magdaLEne, is a combination of a

torculus and a cephalicus, though the two forms are not connected by any pen-stroke. The

most common of these liquescent combinations is with the single-note forms. *Mellis stilla,*

maris stella frequently includes these compounds, shown in Figure 94.
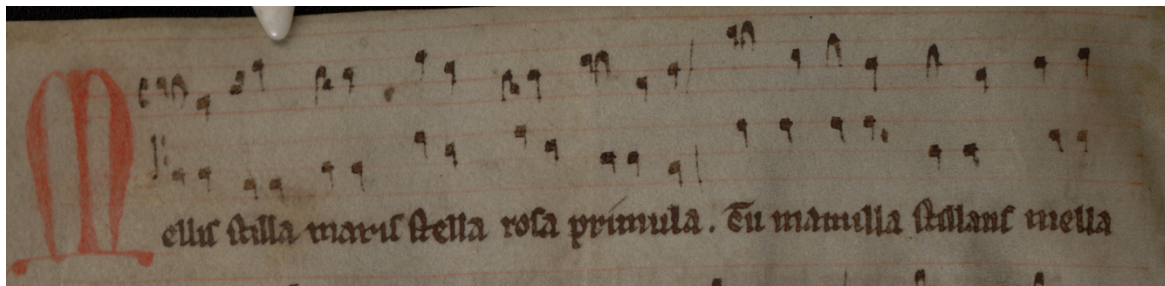
Figure 94: Single-note compounds with liquescence, in *Mellis stilla, maris stella*, from *GB-Ob*
Rawlinson G. 18, f.106v.

The recurring use of the virga+cephalicus compound throughout *Mellis stilla* is much more

interesting when examined alongside the scribe's inclusion of lone cephalicus forms. That the

scribe went to the trouble of including both single cephalicus forms and the virga+cephalicus

compounds indicate that there is some type of differentiation between the two. Whether the

distinction is linked to syllabic stress, note length, rhythm, or some combination thereof (or

an unrelated reason) is unknown. But the practice of combining single note forms and

liquescence is, as noted above, one of the more frequently seen liquescent compounds within

this group of songs.

     The penultimate row in Table 33 refers to 'Amen' compounds. These are compound

forms which are written for use in a song's final 'Amen', which is often melismatic. 24 of the

444 compounds used are found in 'Amens', including the one shown in Figure 95.

Figure 95: Compound neumes used to write an 'Amen', in *Risum fecit sare*, from *GB-Lbl* Arundel 248, f.201v.

Most 'Amen' compounds in *MB* 95 have a melismatic 'A' syllable, with the final two notes on 'men'. Though the underlay may be slightly ambiguous, *Risum fecit Sare* falls into this category, with the melismatic section made up of 15 notes in the upper voice and 16 in the lower.[184] The scribe writes the melismatic form using mostly virgae, but uses puncta for the descending passages (as in the lower voice), but square compounds are also regularly used to write out 'Amens'. The 'Amen' compounds have been set aside from the other compounds in regard to the presentation of data, because they are typically longer and more melismatic than any of the compounds found within the main body of any of the songs examined.

---

[184] In this case, the placement of 'men' on the final two notes is supported by existing convention (including other songs within Arundel 248), and can also be supported by the slight separation of the final clivis from the previous notes in the lower voice, to ensure that it lines up with the pes above. The *MB* 95 edition is in accordance with this interpretation (see *MB* 95, 107).

2.3: Non-Notational Elements

Though this chapter is about the notation of the songs in *MB* 95, there are certain non-notational elements on the written page that affect the musical notation, and therefore merit consideration as part of this chapter. The two non-notational elements that will be discussed are staves and clefs, in sections 2.3.i and 2.3.ii, respectively.[185] In these sections, I will present tables of data, and offer some visual examples from the songs examined. Both staves and clefs will be discussed again in Chapter Three, during the examination of internal and external concordances, specifically in regard to the effects that these non-notational elements have on the visual perception of written music.

2.3.i: Staves

		%
Total songs using one type of staff (out of 111 songs)*	78	70
Total songs using multiple staff types	33	30
Total songs with three-line staves	12	11
Total songs with four-line staves*	97 / 60	87 / 54
Total songs with five-line staves*	34 / 18	30.5 / 16
Total songs with six-line staves	5	4.5

Table 34: Quantitative data on staves in the songs of *MB* 95.

The data in the first two rows of Table 34 is meant to give some context for rows four through six. Specifically, that while the majority of the songs only use one type of staff (meaning the scribe uses a staff with a set number of lines throughout the song), a significant number of scribes choose to vary the amount of stave lines used depending on the vocal range of the song being written, using two, even three different numbers of stave lines within one

---

[185] Other non-notational data collected is available in Appendix I of this thesis.

song. The four-line staff is by far the most popular staff type. 87% of the songs examined use a four-line staff at at least one point during the song, and over half the songs use the four-line staff exclusively.[186] The only other type of staff to be used without any other type is the five-line staff, but only 16% of the songs use this type of staff alone. *Interni festi gaudia* is one of the songs which uses multiple numbers of stave lines; specifically, three- and four-line staves, both shown below in Figure 96.
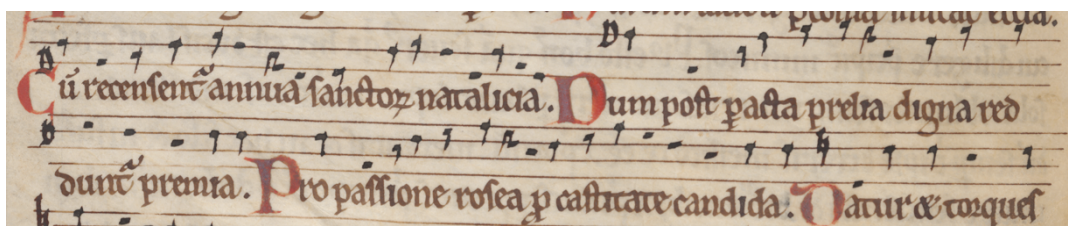
Figure 96: Three- and four-line staves, in *Interni festi gaudia*, from *GB-Ccc* 253, f.140v.

In *Interni festi gaudia*, almost the entire first page is written with a three-line staff, and Figure 96 shows the point where the scribe changes to a four-line staff. As shown in the figure, the melodic range covers the entire three-line staff, even though the scribe frequently changes clefs in order to keep the melody contained on the staff. The four-line staff still requires regular clef changes in order to keep the melody on the staff, but the changes are not nearly as frequent when the scribe uses the four-line staff.

Sometimes it is evident that staff lines (drawn before the notation was written) seem to have been based around a scribe's estimate of what the song would need. *Eyns ne soy* (and the contrafactum *Ar ne kuthe*) uses a four-line staff for most of the song, but switches to a five-line staff at two different points, where the melodic range is slightly wider. Figure 97 shows the first point at which the scribe switches to a five-line staff.

---

[186] In Table 34, the rows with asterisks are staves which are used both singularly and within multi-stave songs. The first number (before the slash) refers to the total number of songs using this type of stave, and the second number (after the slash) refers to the number of songs which use this type of staff exclusively. The same arrangement is applied to the column of percentages.

Figure 97: Four- and five-line staves, in *Eyns ne soy/Ar ne kuthe*, from *GB-Lma* Cust. 1, f.160v.

The scribe makes use of the entire four-line staff, but the entire topmost line and space in the five-line staff are unused. Given that the first two musical lines in this piece are almost identical (there is only one extra syllable in the second stanza, at 'EN prisun'), it is strange that the first line would be written on a four-line staff and the second on a five-line staff. However, the next page (f.161r) has the same staff layout as the page from which the example in Figure 97 is taken: a four-line staff at the top, then a five-line staff, followed by four-line staves for the rest of the page. The five-line staff on f.161r is also unnecessary, given that the scribe does not write anything on the lowest line of that staff, or in the lowest space. The inclusion of this change in stave lines was either the result of a scribe copying from an exemplar which included the change for an unknown reason, or that the scribe believed it to be necessary on one of the two pages. The five-line staff on f.161r features a change in clef, shown below in Figure 98.

165
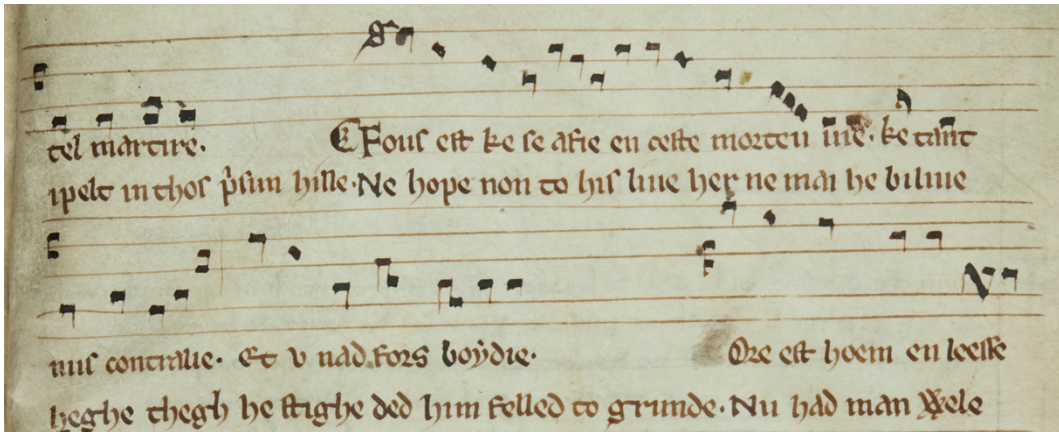
Figure 98: Five-line staff with a clef change, in *Eyns ne soy/Ar ne kuthe*, from *GB-Lma* Cust. 1, f.161r.

The clef change shown above allows the melody to fit on the five-line staff, but would have been unnecessary if the scribe had changed the clef at the beginning of the stave. In this case, the clef change ultimately exposes the lack of need for this extra line in the staff.

As noted in the introduction to section 2.3, the use of staves will be discussed further in Chapter Three, within the examination of internal and external concordances. While this section (2.3.i) provides data about the different types of staves being used within these songs, the context of that chapter allows for a more in-depth analysis of the effect that staff layout can have on the process of writing music, as well as the interpretation thereof.

2.3.ii: Clefs

		%
Total songs using one clef only (out of 111 songs)*	44	39.5
Total songs using multiple clefs	67	60.5
Total songs using C*	99 / 34	89 / 30.5
Total songs using (B ♭)*	61 / 6	55 / 5.5
Total songs using (B ♮)*	8 / 2	7.2 / 1.8
Total songs using F	18	16
Total songs using G*	11 / 2	10 / 1.8
Total songs using D	9	8
Total songs using A	3	2.7
Total songs using E	1	0.9

Table 35: Quantitative data on clef use in the songs of *MB* 95.

Like the table in the previous section, Table 35 provides the breakdown of songs using

specific clefs, but with the warning (in the first two rows of the table) that less than 40% of

the songs use one clef exclusively, so some of the non-starred clefs may have only been used

for a very small section of a song (the starred clefs are the clefs which are used exclusively).

The majority of the songs (just over 60%) use multiple clefs, sometimes as many as five per

song (as is the case with *Dulcis Jesu memoria*, discussed below).

The C clef is the clear preference of scribes writing these songs, with 99 of 111 songs

using the C clef, 34 of which feature the C clef exclusively. Even within the songs that use

one clef only, at times the clef will move in its placement on the staff, depending on the range

of the song, as was the case with several examples from the previous section of this thesis.

The rate of change in clef (including both a change <u>of</u> clef and a change in <u>placement</u> of clef)

ranges from no change (23 songs, or 21%) to 79 changes, as is the case with *Dulcis Jesu*

memoria, in *GB-Ob* Laud misc. 668. *Dulcis Jesu memoria* also uses five different clefs (A, B

167

♮, C, D, and E) and the staves are made up of three, four, and five lines. Figure 99 shows

two staves from *Dulcis Jesu memoria*, featuring changes in stave lines, clefs, and clef

placement.
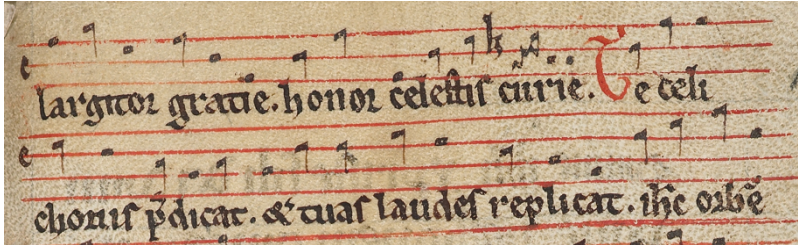
Figure 99: Clef and staff changes in *Dulcis Jesu memoria*, from *GB-Ob* Laud misc. 668, f.104r.

The use of the B ♮ clef is interesting because the scribe does not use any B ♭ clefs, therefore

making the natural clef redundant, considering its function in several of the songs examined

is to negate the B ♭ clef. It is also curious that the scribe chose to use the B ♮ to indicate the

upward shift of placement on the staff, instead of just moving the C clef to the uppermost

line.

     As was the case with the previous section, information about clefs in the abstract is of

limited interest: a much fuller and more valuable discussion about scribal approach to clefs

(as well as to staves) can only be had when considering particular songs in their entirety, as I

will do in Chapter Three.

Some Conclusions

While this chapter has provided a considerable amount of data, I am aware that it does leave some notational queries unanswered. However, the availability of notational data does allow some general conclusions to be drawn in regard to the notation as a whole. Concerning scribal adaptation, the forms which are used less frequently have higher amounts of regularly-used adaptations. Table 36 lists each form in order of most to least frequently used, with the total number of adaptations present for each form.[187] The single-note forms are by far the most frequently used, but the virga only features two adaptations regularly: the hairline ascender, and slanted descenders. By contrast, the scandicus form, one of the least frequently used, has six adaptations. The punctum is the only form used over 1,000 times in the songs to have more than two adaptations.

---

[187] The wave note was not included because its adaptations were related to its use in compound forms, which are not included on this table.

Name of Form	Total Forms Written	Number of Adaptations Used
Virga	16,964	2
Punctum	5,009	4
Clivis	1,267	2
Pes	1,136	2
Cephalicus	599	5
Extended Clivis	249	2
English Conjunctura	233	3
Porrectus	170	5
Torculus	135	3
Scandicus	113	6
Climacus	97	3
Epiphonus	89	3

Table 36: Forms listed by frequency of use, with number of adaptations present.

This chapter's discussion of individual forms is only a starting point; as noted in Chapter One, there is little point in an examination that divorces these forms entirely from their context, but this breakdown is meant to be a starting point for further examination (specifically, Chapter Three's examination of notation within entire melodies). As noted in the Introduction, the aim of this thesis is not to solve all mysteries related to the notation of insular song, but to examine the notation in the songs being used, and offer a general interpretation of the ways in which scribes in Britain were notating song during the twelfth and thirteenth centuries. Until now, descriptions of notation in insular sources have often been impressionistic, and a group of insular songs and sources this large has never been examined in a single study that is specifically focused on notation. This chapter offers concrete evidence of exactly what kind of forms were being used to notate song, and the

(often surprising) ways in which they were being used. It will therefore offer considerably more detailed information to scholars writing about insular song in the future, including new insight into the complicated relationships between scribe and notation, sound and visual representation, and interpersonal perception of musical materials. Whatever the reason behind the large amount of variation in the use and construction of note forms, it certainly adds to the idea that notation during this time period could be strikingly improvisatory; the existence of ad-hoc forms alongside forms which were carried over from previous musical traditions exemplifies the influence that a combined oral and visual culture may have had on musical notation.

Chapter Three: Examining Concordances

Introduction: Witnesses to Insular Song

In order to develop a wider understanding of the notation being used to write insular song between 1150 and 1300, it is necessary not only to examine individual songs and their sources, but also any existing concordances. Traditionally, a concordance refers to the same piece of music existing in multiple manuscript sources, but in the case of insular song, the scope of what constitutes a concordance can be more generous than for pieces whose musical structure requires a more explicit notation (i.e. mensural polyphony). Additionally, the physical nature of medieval source material necessitates that scholars rely on visual evidence to determine 'sameness', without the immediate help of aural recognition; though the two are inextricably linked in terms of a song's transmission and continued existence, scholars must rely on only the written record of songs' existence to make such comparisons.[188] As shown in Chapter Two, the songs examined in this thesis are the product of a tradition that lacked standardisation, which at times can lead to difficulty when interpreting the work of a single scribe, let alone comparing the techniques and adaptations of two different notators.

---

[188] The relationship between oral transmission and written source material has long been a focal point for examinations of medieval song, from both musicological and literary perspectives, though scholarship on both tends to focus primarily on the transmission of medieval song in Continental Europe. Some key texts on this topic include Peter Dronke, *The Medieval Lyric*, 3rd ed. (Woodbridge: Boydell & Brewer, 1996); Helen Deeming and Elizabeth Eva Leach, eds., *Manuscripts and Medieval Song,* esp. Chapter 11; and Treitler, *With Voice and Pen*, esp. Chapters 10, 13, 14, and 17. Studies with a more specific regional, temporal, and/or genre-based focus include Ardis Butterfield, *Poetry and Music in Medieval France: From Jean Renart to Guillaume de Machaut* (Cambridge: Cambridge University Press, 2009); Marisa Galvez, *Songbook: How Lyrics Became Poetry in Medieval Europe* (Chicago: University of Chicago Press, 2012); Sylvia Huot, *From Song to Book: The Poetics of Writing in Old French Lyric and Lyrical Narrative Poetry* (Ithaca: Cornell University Press, 1987); Sarah Kay, *Parrots and Nightingales: Troubadour Quotations and the Development of European Poetry* (Philadelphia: University of Pennsylvania Press, 2013); Mary O'Neill, *Courtly Love Songs of Medieval France: Transmission and Style in the Trouvère Repertoire* (Oxford: Oxford University Press, 2006), esp. Chapter Three; Jennifer Saltzstein, *The Refrain and the Rise of the Vernacular in Medieval French Music and Poetry* (Woodbridge: Boydell & Brewer, 2013), esp. Chapter One.

For the purposes of this thesis, I have broken down my definition of concordances into several categories. Most of the concordances discussed in this chapter are melodic concordances, in which the sources contain the 'same' melody and text.[189] Within the songs examined in this thesis, I will refer to 'internal' and 'external' concordances: the former being concordances that exist within the original group of 111 songs, and the latter being witnesses which are found outside that group.

Within the entire group of 111 songs, 38 have either 'internal' or 'external' concordances (or both, in several cases). There are over 600 concordances external to the original group, though many of these transmit the text only (secondary sources do not always explicitly note whether there is music notation present in a manuscript).[190] While the full extent of the external concordances has yet to be fully explored and identified, it was necessary for the scope of this thesis to limit the amount of concordances examined, in order to provide more detailed analyses. Therefore, I have chosen to examine the internal concordances present

---

[189] This concept of 'same' (implied by use of the word 'concordance', though not expected to mean 'identical') will be examined throughout the chapter. The reference to 'melodic' concordances is a contrast to 'notational' concordances, which refer to instances of notational similarity found among different songs, written by different scribes. They are distinct from melodic concordances in that they have nothing to do with a particular song or melody being transmitted, they only highlight notational similarity. This phrase has previously been used by Giovanni Varelli to describe tenth-century sources using 'remarkably similar' systems of musical notation ('Two Newly Discovered Tenth Century Organa', 286). Susan Rankin has also used this method of comparing associated notational models, specifically in her edition of the Winchester Troper (discussed in section 1.1.ii of this thesis), though she does not use this specific terminology to describe sources related by their notation. John Stevens uses a similar method in *The Later Cambridge Songs*, providing what he calls 'notational context' for Ff.i.17(1), comparing it with *GB-Lbl* Burney 357 (which is discussed in this thesis).

[190] These total numbers refer to manuscript concordances only. Printed material has not been included. Sources of information on concordances include *Analecta Hymnica Medii Aevi*, ed. C. Blume and G.M. Deves, 55 vols (Leipzig: O.R. Reisland, 1886-1922), vols. 8, 9, 32, 54, and 55; Gordon Athol Anderson, 'Notre Dame and Related Conductus: A Catalogue Raisonné', *Miscellanea Musicologica* 6 (1971): 153-229, and 7 (1975): 1-81; K.D. Hartzell, *Catalogue of Manuscripts Written or Owned in England up to 1200 Containing Music* (Woodbridge: The Boydell Press, 2006); N.R. Ker, *Medieval Libraries of Great Britain: A List of Surviving Books*, 2nd ed. (London: Offices of the Royal Historical Society, 1964); *Medieval English Songs*, E.J. Dobson and F. Ll. Harrison, eds. (New York: Cambridge University Press, 1979); Christopher Page, 'A Catalogue and Bibliography of English Song from its Beginnings to c.1300', *Royal Musical Association Research Chronicle* 13 (1976): 67-82; John Stevens, 'Alphabetical Check-List of Anglo-Norman Songs, c.1150-c.1300', *Plainsong and Medieval Music* 3 (1994): 1-22. For more information on the *MB* 95 concordances, see the Textual Commentary of *MB* 95, 167-224.

within the songs of *MB* 95, and two groups of external concordances. The first group of external concordances will be those found in *GB-Cu* Add. 710, known as the Dublin Troper, and the second will be the concordances found within sources of trouvère song. The external concordances chosen were based on the number of available witnesses (with notation intact), and also to allow for a comparison with different types of manuscripts. All of the songs examined in this thesis so far are found in miscellany manuscripts, and the Dublin Troper witnesses allow me to compare the miscellany notation with the notation used in an insular manuscript primarily dedicated to musical content. The trouvère concordances allow me to compare insular notation with that of Continental sources.

In this chapter, I will identify and discuss the melodic concordances within the original group of 111 songs examined in this thesis (the 'internal' concordances mentioned above), as well as certain external witnesses. In section 3.1, I will examine the similarities and differences between the internal concordances and question what the varying notational traits between witnesses might add to the understanding of insular song and its notation. In section 3.2, I will discuss some of the external concordances found in the Dublin Troper and how that manuscript's slightly later date—as well as its identity as a source of liturgical material—may be reflected in the notational differentiation. Finally, in section 3.3, I will discuss the external concordances within sources of trouvère song. By examining points of variation and the notational choices made by scribes while writing these songs, it is possible to see (albeit on a small scale) some of the intricacies of scribal practice and the options available to scribes in terms of their ability to exercise personal authority in how they chose to represent specific sounds in a visual context.

3.1: Internal Concordances

There are seven songs which contain concordances within the original group of 111 songs.[191] Of these seven internal concordances, only three consist of two or more 'complete' versions of the same song. Several of the sources transmit incomplete versions of songs, and two— *GB-DOr* PE/NBY/MI 1 and *GB-Ob* Tanner 169*—are badly damaged. Only two of the songs, *Salve mater salvatoris vas electum* and *Veni sancte spiritus*, have known melodic concordances both inside and outside the original group. In the case of *Veni sancte spiritus*, external concordances include the Dublin Troper, which will be discussed below, in section 3.1.iii, though a detailed examination of the concordances held within that particular source will be discussed at length in section 3.2. The other five songs are currently only found in the sources discussed in this section.

Table 37 shows these seven songs, their internal concordances, and whether or not they have known external melodic concordances. The songs with an asterisk after the title indicate that the versions being examined have not been transmitted with the same amount of text, either as a result of a source being incomplete (such as a song ending mid-verse), or due to the witnesses possessing different numbers of verses.

---

[191] Contrafacta have not been included in this list. For a list of contrafacta within the original group of songs, see *MB* 95, xxxix.

SONG TITLE	Source 1 / MB No.	Source 2 / MB No.	Source 3 / MB No.	External?
Sancte Marie virgine	*GB-Cu* Mm.iv.28, f.149r / 3	*GB-Lbl* Royal 5 F. vii, f.85r / 32	*GB-Lbl* Harley 322, f.74v / 78	No
Salve mater salvatoris vas electum*	*GB-Otc* 34, ff.151v-152v / 14	*GB-DOr* PE/NBY/MI 1, f.1v / 27	N/A	Yes
Veni sancte spiritus	*GB-Lbl* Sloane 1580, ff.152v-153r / 37	*GB-Cgc* 240/126, p.6 / 61	N/A	Yes
Gaude gloriosa*	*F-EV* 17, f.4v / 51	*F-EV* 17, ff.158v-159r / 55	N/A	No
Omnis caro peccaverat*	*F-Pn* fr. 25408, ff.116r-117r / 57	*Cgc* 240/126, pp.12-13 / 65	N/A	Yes
Stand wel moder*	*GB-Cjc* E. 8, f.106v / 66b	*GB-Lbl* Royal 12 E. i, ff.193r-194r / 90	*GB-Ob* Tanner 169*, p.175 / 110	No
Worldes blis ne last no throwe	*GB-Lbl* Arundel 248, f.154r / 72	*GB-Ob* Rawlinson G 18, ff.105v-106r / 108	N/A	No

Table 37: Internal concordances in *MB* 95.

For each set of concordances discussed in the subsections of 3.1, additional tables will be provided, showing categories of variation between the sources based on the total number of syllables in each source.[192] These categories include total number of syllables in each

---

[192] Although I have made a point to avoid using the word 'variation' in previous sections of this thesis (because of the implied standard from which a source is deviating), it will be used in this section to refer to differences between witnesses, with the understanding that neither source should be considered the 'standard'.

version, the total percent of syllabic variance between the versions (i.e. number of syllables which vary between witnesses in terms of note-form, pitch, and/or text), the number of syllables on which note forms vary between sources, the number of syllables on which the pitch varies between sources, and the number of syllables which feature both note form and pitch variation. Syllables that include textual variance will also be included for reference. For unfinished sources, data will only be provided for the surviving notation; the 'missing' syllables will not count towards overall syllabic differentiation (though they will be acknowledged in the discussion). Similarly, in the cases where one witness possesses a different number of verses than the other (indicated in Table 37 by an asterisk), only the verses possessed by both witnesses will be included in the comparison. If witnesses possess different total syllable counts based on slight textual variation (less than the amount of syllables in one stanza), both numbers will be listed in the chart, and the comparative percentages will be based on an average total syllable count.

3.1.i: Sancte Marie virgine

	GB-Cu Mm.iv.28 / *GB-Lbl* Royal 5 F. vii	*GB-Cu* Mm.iv.28 / *GB-Lbl* Harley 322	*GB-Lbl* Royal 5 F. vii / *GB-Lbl* Harley 322	Average
Total Number of Syllables	37 / 37	37 / 38	37 / 38	37.5
Total Syllabic Variance (%)	14 (37.8%)	22 (58.7%)	18 (48%)	48.2%
Syllables With Variance in Note Forms	12 (32.4%)	9 (24%)	10 (26.7%)	27.7%
Syllables With Pitch Variance	0	15 (40%)	15 (40%)	26.7%
Syllables With Both Pitch and Note Form Variance	0	3 (8%)	6 (16%)	8%
Syllables With Textual Variance	3 (8%)	10 (26.7%)	10 (26.7%)	20.5%

Table 38: Total amount of variation between sources of *Sancte Marie virgine*.

As seen in Table 37 (found in the introduction to section 3.1), *Sancte Marie virgine* is one of only two songs to be present in more than two sources within the group (three total sources). This song is listed in that table as *Sancte Marie virgine*, though its opening line is spelled differently in each of the internal concordances: *Sainte Marie virgine* and *Seinte Marie virgine*, with respect to table order. Because it has more than two witnesses, Table 38 is laid out in a different manner than subsequent tables showing variation; it has been divided in order to show variation between each of the sources.

178

For all three witnesses, the average individual pitch variance is approximately 30%. Though there is no differentiation of pitch between *GB-Cu* Mm.iv.28 and *GB-Lbl* Royal 5 F. vii, each of these sources has just over 40% variation in pitch per syllable with *GB-Lbl* Harley 322. The majority of syllabic pitch variation between the sources comes in the last third of the song. The three witnesses are almost identical until the word 'onfang': at this point, the melodies of *GB-Cu* Mm.iv.28 and *GB-Lbl* Royal 5 F. vii continue on F and finish on D, while *GB-Lbl* Harley 322 continues on C and ends on A. Figure 100 shows a comparison of all three versions, from 'onfang' until the end of the song.[193]
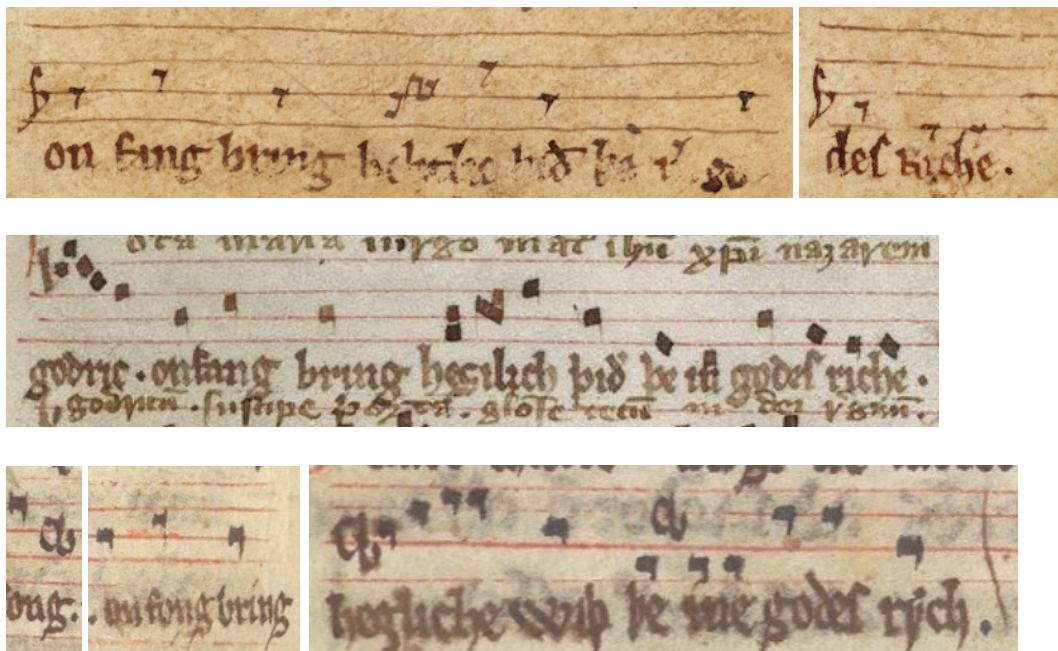
Figure 100: Final lines of *Sancte Marie virgine*; (top to bottom) *GB-Cu* Mm.iv.28, f.149 / *GB-Lbl* Royal 5 F. vii, f.85r / *GB-Lbl* Harley 322, f.74v.

At first glance, it seems that all three examples are using B flats to indicate clef. However, scholars have supported several readings of the clef used in *GB-Cu* Mm.iv.28: Stevens interprets it as a B flat (in which case the melody would be identical to the version in *GB-Lbl* Harley 322), while Harrison believes it to be an F, as it is in *GB-Lbl* Royal 5 F. vii. Helen

---

[193] A parallel transcription of all three songs is available in Helen Deeming, 'The Songs of St Godric: A Neglected Context', *Music & Letters* 86 (2005): 169-85; 181.

Deeming supports the reading as an F clef, based on a palaeographic comparison with the

earlier B flats written in the manuscript, shown below in Figure 101. The data provided in

Table 38 assumes this clef to be an F.

Figure 101: *Sancte Marie virgine*, from *GB-Cu* Mm.iv.28, f.149r.

Deeming notes that, while the clefs on the first two lines are certainly B flats, the different

clef that appears at the start of the third and fourth staves seems unlikely to be an alternative

way of writing the same B flat clef. Therefore, the figure on lines three and four is

representing something else, most likely an F clef.[194] This reading is supported by the

melodic resemblance between the Cambridge version and the version contained in Royal 5 F.

vii (including the presence of an ambiguous neume in both manuscripts over virGIne).

While the melodies found in all three witnesses may be strikingly similar, each scribe

uses individual notational adaptations. The average amount of notational variation between

the sources is 28.6%, which is very close to the overall average amount of pitch variance

(26.8%). Though the average notational and pitch variation are comparable between the

---

[194] Ibid.

180

sources, the average correlation between variance in pitch and notation is only 8%. There is

no correlation between pitch and notational variance between *GB-Cu* Mm.iv.28 and *GB-Lbl*

Royal 5 F. vii. Only three syllables feature variance in both pitch and notation when

comparing *GB-Cu* Mm.iv.28 and *GB-Lbl* Harley 322 (8%), and six syllables show both types

of variance between *GB-Lbl* Royal 5 F. vii and *GB-Lbl* Harley 322. Figures 102 and 103

show the full versions of Royal 5 F. vii and Harley 322.
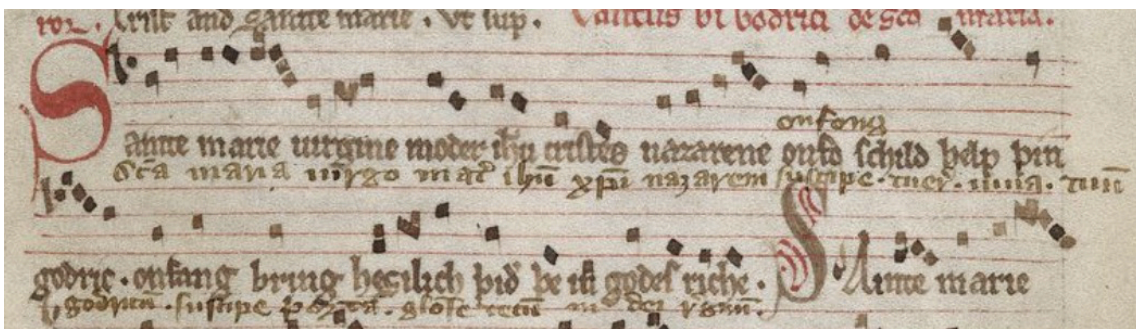
Figure 102: *Sainte Marie virgine*, from *GB-Lbl* Royal 5 F. vii, f.85r.
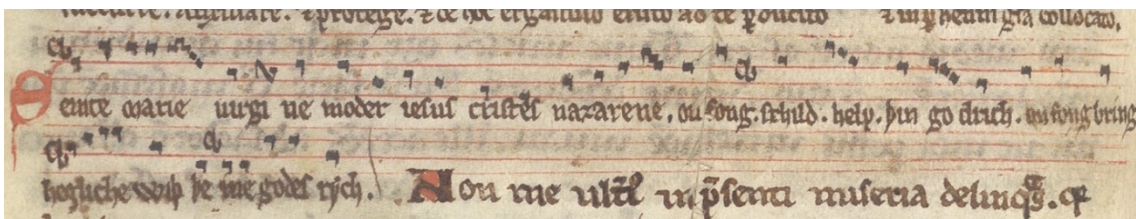
Figure 103: *Seinte Marie virgine*, from *GB-Lbl* Harley 322, f.74v.

    The notation of *GB-Cu* Mm.iv.28 (shown in Figure 101) is much less square than the

other two witnesses shown above, with virgae made of oblong heads and tails that often curve

slightly to the right at the bottom. The Cambridge scribe only uses two puncta (not counting

those that are used within the English conjunctura), at moDER and at ÞID. The scribe of

Royal 5 F. vii uses the punctum more frequently and with some regulation: seven times in

total, most often as the second syllable in a word, and never higher in pitch than the

preceding syllable. Like the Cambridge scribe, the scribe of Harley 322 also uses only two

individual puncta: at moDER, like the other witnesses, and at ieSUS. There are no puncta

used in the rest of the song, though the following word, 'cristes', would fit with the type of formulaic use seen in Royal 5 F. vii; two syllables, the second lower in pitch than the first.

All three adaptations of the three-note descending form are present: the Cambridge scribe uses the English conjunctura, the scribe of Royal 5 F. vii uses the climacus, and the Harley 322 scribe uses both the climacus and the extended clivis forms. The porrectus is found in the Royal and Harley manuscripts, while the Cambridge scribe constructs an ad-hoc form made of a combined clivis and pes (virGIne).

Each scribe writes the five-note compound form above mariE in a slightly different manner. The Cambridge scribe has written a sort of pes with a backward-facing upper note which functions as the top note of the descending notes; though it looks slightly awkward, the direction of this upper note head is in keeping with that scribe's preference for the English conjunctura form. The Royal scribe writes this figure as a pes with three descending puncta (as they are used in descending forms such as the climacus), and the Harley scribe has begun with a torculus, the third note of which functions as the first note of a climacus.

The textual variance among the sources is the lowest of all the categories of variation, with an average of only 18%. This is because the Cambridge and Royal sources are almost identical in their text, with less than 1% syllabic variation. The Harley source has 27% variation with the two other sources, again similar to the average percent of pitch and notational variance between the witnesses.

3.1.ii: Salve mater salvatoris vas electum

No table of variation will be provided in this section, because it is impossible to include statistical details of variation between the witnesses of *Salve mater salvatoris vas electum*. As noted in the introduction to section 3.1, the witness contained in *GB-DOr* PE/NBY/MI 1 is a fragment, so badly damaged that it is nearly impossible to make out the entire melody.

However, Deeming notes that, incomplete though it may be, it is still possible to tell that the Dorchester source is not structurally identical to the witness in *GB-Otc* 34,[195] though the readable passages are close enough in melody to merit the song's inclusion in this study of internal concordances. The text of *Salve mater salvatoris* is widely transmitted, though Deeming notes that the text 'apparently circulated with several different melodies'.[196]

From what can be seen of the Dorchester fragment, the notation is written in a neat hand, using both virgae and puncta, as well as clivis, torculus, scandicus, and cephalicus forms. The climacus is this scribe's preferred adaptation of the three-note descending form. The scribe has also used at least one ad-hoc square compound, as well as compounds made up of other forms. The compound can be seen in Figure 104 below, with Figure 105 showing the corresponding cadence in the version from the Trinity manuscript.
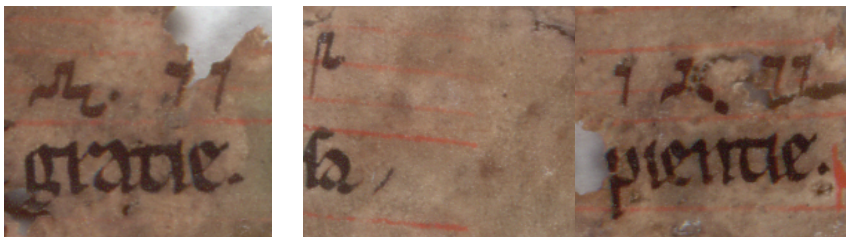
Figure 104: Compound forms in *Salve mater salvatoris vas electum*, from *GB-DOr* PE/NBY/MI 1, f.2v.

Figure 105: Corresponding cadences in *Salve mater salvatoris vas electum*, from *GB-Otc* 34, f.152r and f.152v.

The corresponding moments in the version found in *GB-Otc* 34 suggest that the melody in the Dorchester source was much more highly ornamented than the version in the Trinity College

---

[195] *MB* 95, 178.
[196] Ibid., 175.

manuscript, although the Trinity source does become decidedly more ornamented in the later

verses. Unfortunately, since the Dorchester fragment only contains parts of the first four

stanzas of this song, there is no way of knowing whether the Dorchester scribe's notation

would have become more ornamented in later stanzas as well. The initial differences early in

each piece can be seen through a comparison of two short passages ('Cinamomi . . .

puerpera'), shown in Figure 106.
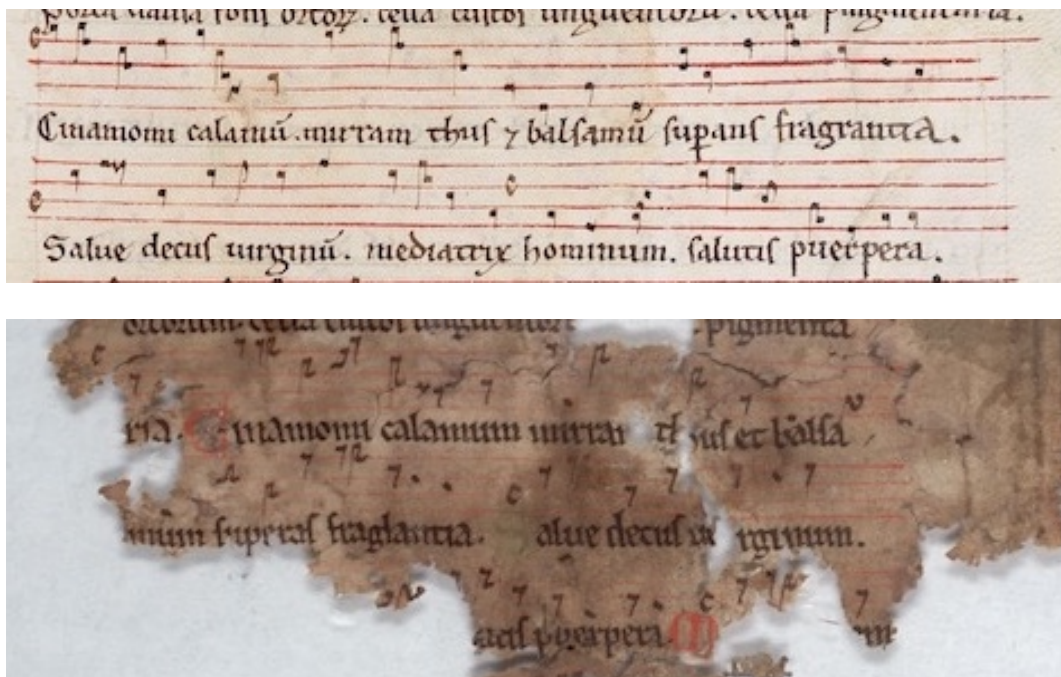
Figure 106: Comparison of stanzas 3b and 4a in *Salve mater salvatoris vas electum* from *GB-Otc* 34, f.152r (top) and *GB-DOr* PE/NBY/MI 1, f.1v (bottom).

This comparison uses one of the largest continuous, readable fragments available from the

Dorchester source, and within this excerpt can be found several notation-specific differences

between the witnesses. The greatest notational difference between the sources is the

Dorchester scribe's custom of combining virgae with other forms over single syllables of text.

This practice was discussed in section 2.2.xi, in regard to its use in *Mellis stilla, maris stella*,

from *GB-Ob* Rawlinson G. 18, the scribe of which similarly used virgae combinations along

with individual forms. For example, in the case of *Mellis stilla*, the scribe used both single

cephalicus forms and the combined virga+cephalicus, while in Figure 106 the scribe has written both single clives as well as the combined virga+clivis forms. While quite common among the repertoire studied in this thesis, the combined virga is still ambiguous in regard to its sonic realisation, when combined with liquescent and non-liquescent forms alike.

In this excerpt, the scribe uses these 'combined' virgae at ciNAmomi, FRAglantia, and salVE. The Trinity College scribe uses the same pitches (and even position on the staff) for each of these three moments, but ciNAmomi and FRAgrantia (the spelling of this word differs slightly from the Dorchester source: '-grantia' instead of '-glantia') are written with single clives instead of virga+clivis forms. 'Salve' is not written with this specific type of combined virga, but it is given special treatment: the scribe has written a puncta combined with a wave note, another form which remains sonically ambiguous, but both cases offer a possibility that this moment deserved some type of musical emphasis or decoration. The first, second, and fourth verses open with 'Salve', and each time this opening word receives a different treatment in the Dorchester fragment: the 'Salve' of the first verse has no decoration (just two virgae), while the second 'Salve' is written using a combined virga+cephalicus, over the first syllable of the word. The third 'Salve' (perhaps the most deserving of the three, due to the text: 'Salve decus virginum') also uses the virga+cephalicus form, albeit over the second syllable of the word rather than the first. The Trinity College scribe likewise uses progressively varied styles of ornamentation: the first 'Salve' is made of two virgae, and the second is written with a (single) cephalicus over the first syllable.

185

3.1.iii: Veni sancte spiritus

		%
Total Number of Syllables	210	N/A
Total Syllabic Variance	114	54.3
Syllables With Variance in Note Forms	105	50
Syllables With Pitch Variance	54	25.7
Syllables With Both Pitch and Note Form Variance	48	22.9
Syllables With Textual Variance	2	1

Table 39: Total amount of variation between sources of *Veni sancte spiritus*.

The most immediate difference between the internal witnesses of *Veni sancte spiritus* is in their layout; specifically, the text underlay. While the scribe of the version found in *GB-Lbl* Sloane 1580 writes each repeated (musical) versicle out in full, the scribe of *GB-Cgc* 240/126 has written the text of the second half of each stanza directly below the first, with their shared music notation written out only once. This multi-stanza underlay means that the verses in Sloane 1580 (which are notated in full) will have to be compared to the same notation for each stanza per verse, which may result in different formal and pitch variation than if the scribe had notated each stanza separately.

Each scribe uses both virgae and puncta—though the scribe of Sloane 1580 uses three times as many puncta as the Gonville and Caius scribe (relative to the amount of notated stanzas in each witness)—and these two single-note forms seem to be interchangeable within both sources. The Gonville and Caius witness is the simpler of the two sources; the notation is much less ornamental, which is unsurprising given that the melody written in this source needs to be adaptable for two separate versicles of text. Looking at the data in Table 39, the total number of syllables is 210: there are five double-versicle stanzas, each with 21 syllables per versicle divided into three groups of seven syllables. The percentage of textual variance

186

between the sources is only 0.01%. Out of the 210 total syllables, only one word varies between the sources: the third stanza opens, 'O lux clementissima' in *GB-Cgc* 240/126, and 'O lux beatissima' in *GB-Lbl* Sloane 1580. This relative standardisation is likely due to the widespread transmission of this text.

In *GB-Cgc* 240/126 the setting of *Veni sancte spiritus* is mostly syllabic. Unlike the scribe of Sloane 1580, the Gonville and Caius scribe uses neither liquescence nor the wave note, and only twice uses forms combining groups of three and four pitches, each shown in Figure 107.
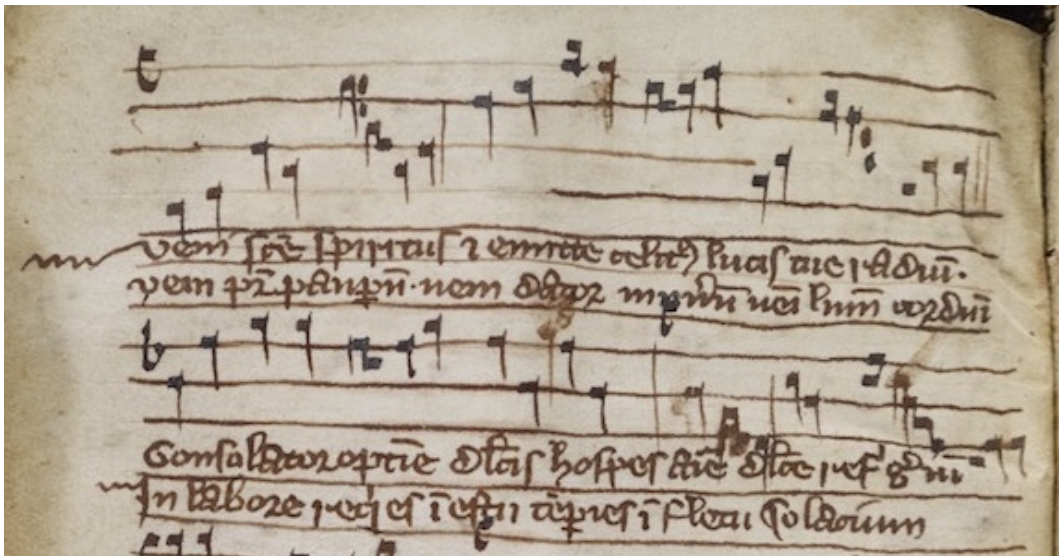
Figure 107: Excerpt from *Veni sancte spiritus* showing descending neume forms, *GB-Cgc* 240/126, p.6.

These three- and four-note groupings, written over tuE (end of top line), and reFRIgerium (end of bottom line), are not easily discernible in terms of their classification as specific forms. The form over tuE could possibly be an English conjunctura or a climacus: the descender is written in the middle of the note-head, making the form ambiguous. Over reFRIgerium, the form mostly looks like an extended clivis, but with an extra descender, stretching from the bottom right corner of the first note head, through the left side of the second note head, and continuing below. It is possible that, in each of these cases, the scribe

187

changed their mind during the writing process. In the case of reFRIgerium, it looks as if the scribe initially wrote the first B flat in the extended clivis as a virga, hence the downward stem to the right of the note head. An ink smear up and to the right, starting from the B flat, gives the appearance of erasure, as if the scribe considered erasing this note-head before reconsidering and instead adapting the mistake into an extended clivis, rather than starting the form anew. The scribe of *GB-Lbl* Sloane 1580 does not place a three-note descending form at 'tue', as the melodies diverge here slightly, shown below in Figure 108.
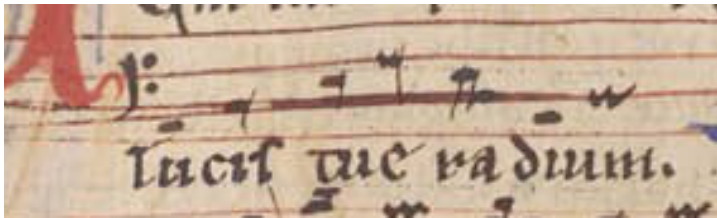
Figure 108: Corresponding passage in *Veni sancte spiritus*, from *GB-Lbl* Sloane 1580, f.152v.

Both phrases ('lucis tue radium') begin on C and end on D, with a rising and falling figure between, but in *GB-Cgc* 240/126 the passage goes up to G, while in Sloane 1580 it only goes up to F. With the exception of the wave note at the last syllable of the Sloane version, this is one of the few times that the Gonville and Caius source uses slightly more ornamentation than the version in Sloane 1580.

The Sloane 1580 scribe includes a descending passage at 'refrigerium', shown in Figure 109.
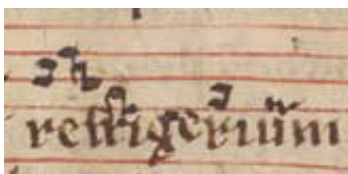
Figure 109: Descending forms in *Veni sancte spiritus*, from *GB-Lbl* Sloane 1580, f.152v.

In Figure 109, the three-note descending figure following the pes is part of a five-note compound to be sung over the first syllable. Similarly to the four-note descending passage in *GB-Cgc* 240/126 discussed above in Figure 107, there is a descender after the highest pitch of the descending figure. When dealing with ad-hoc compound forms, it is often tempting to assume scribal error to explain vague or unknown note-forms (as in the case above), but 'error' in this case is too prescribed a term, and in any case it is not the aim of this thesis to prove scribal error. Whether intentional or not, it is striking that both sources have cases where a stem-like descender is found in the middle of a descending form. The notation of the parallel passage in the following versicle of Sloane 1580 is written with a similar anomaly, and is shown in Figure 110.
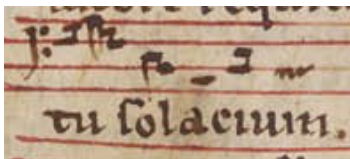
Figure 110: Descending forms at 'tu solacium' in *Veni sancte spiritus*, from *GB-Lbl* Sloane 1580, f.152v.

The figure on 'tu' has a slight right-hand descender after the first pitch of the three-note descending form, like the example in Figure 109, except that this note has a left-hand descender as well, resembling the extended clivis more closely. All subsequent three-note descending forms in the song are written as extended clives.

Availability of repeated musical material allows for comparisons such as this one, where extraneous strokes show the scribal process. Though there is always the possibility of this idiosyncratic form being deliberate, it seems more likely in both cases that the scribe had to make adaptations after originally writing a different form, or even just mistakenly writing a virga. If the Gonville and Caius scribe had notated each versicle, rather than writing the second stanza of text underneath the first, there might be more opportunity to see another

possible reading of this passage, but as it stands each existing record of this musical section has its own notational anomaly.

As noted earlier in this section, the version of *Veni sancte spiritus* contained in *GB-Lbl* Sloane 1580 is 'embellished' in the sense that there is considerable differentiation between each versicle within the larger stanza structure; each line is unique. This is one of the major structural differences between the Sloane and Gonville and Caius witnesses. The most distinct notational difference between the sources is the presence of the wave note in Sloane 1580, while it is not used at all in *GB-Cgc* 240/126. Examining notational differences between the the A and B versicles of a stanza in the Sloane 1580 witness shows regular use of the wave note: in 38 out of 39 total instances over five stanzas, the form is found on the final syllable of a word: the sole exception is at da TUis, shown in Figure 111.
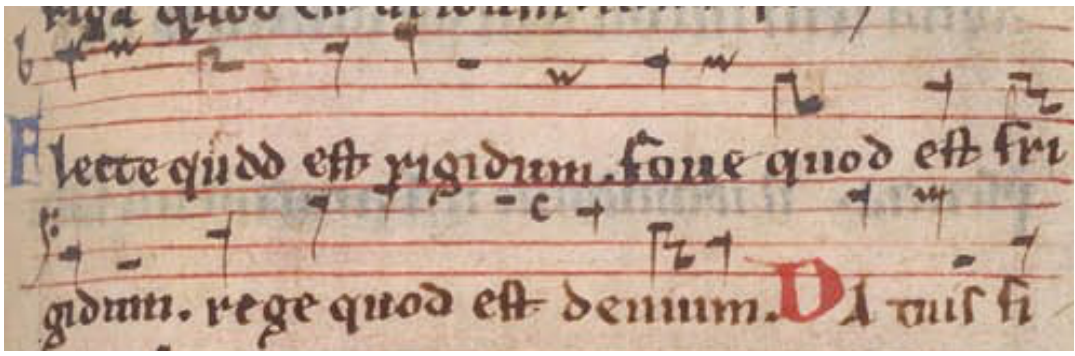
Figure 111: Wave note use in *Veni sancte spiritus*, from *GB-Lbl* Sloane 1580, f.153r.

Beyond its 'irregular' presence on the first syllable of a word, the wave note written over Da TUis is different from the other wave notes written in the manuscript in that it has a right-hand descender. Only one other potential wave note has a stem: in the first half of the first stanza, on lucis tuE, shown in Figure 112.
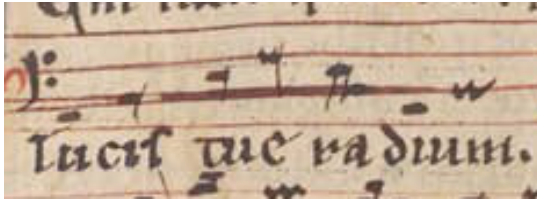
Figure 112: Wave note/virga form, from *GB-Lbl* Sloane 1580, f.152v.

It is possible that the figure written over tuE was originally written as a wave note, but the scribe added a stem to adapt the form into a virga.[197] The wave note with stem over TUis is different in that it is evident that this form was originally written as a wave note, whatever the intended form may have been, whereas the note-head of the form over tuE is less defined; it could have originally been a wave note, or it may simply be a messy virga with no relationship to the wave note beyond this visual coincidence. The fact that the high number of wave notes found within this relatively short song are almost entirely used in a specific way, alongside the presence of the stem, leads me to believe that TUis should be read as a virga, rather than a wave note, though lack of information about the form does not negate the possibility of the scribe was writing a distinct, deliberately different kind of wave note here. This scribe may have written two other songs in *GB-Lbl* Sloane 1580,[198] and an examination of the wave notes in these two pieces, *Inter flores electorum* and *Dulci voce, mente munda* supports the suggestion that the three songs were written by the same scribe. The frequency of the form's presence in all three songs is unique in itself, and the usage is consistent: in the other two songs, the wave note is most often found on the second, third, or fourth syllable of a word, and almost never on the first. There is no such opportunity for intra-stanza comparison in the witness found in *GB-Cgc* 240/126, because of its layout. However, comparison with that source would not necessarily offer any help in determining the identity of this form, because the Gonville and Caius scribe uses no wave notes at all. The points

---

[197] Deeming transcribes the form over tuE as a virga, and the form over TUis as a wave note. *MB* 95, 56.
[198] *MB* nos. 35 and 36; see *MB* 95, 183 for Deeming's discussion of the manuscript.

where the scribe of *GB-Lbl* Sloane 1580 has written wave notes are all notated as virgae within *GB-Cgc* 240/126.

This well-known sequence melody is also found in external sources like the Dublin Troper, which will be the focus of section 3.2. However, for ease of comparison, this external concordance will be discussed within this section.[199] Table 40 shows the variation between these three witnesses.

	Sloane 1580 / *Cgc* 240/126	Sloane 1580 / Add. 710	*Cgc* 240/126 / Add. 710	Average
Total Number of Syllables	210	210	210	210
Total Syllabic Variance	114 (54.3%)	140 (66.7%)	87 (41.4%)	54.1%
Syllables With Variance in Note Forms	105 (50%)	126 (60%)	8 (27.6%)	45.9%
Syllables With Pitch Variance	54 (25.7%)	82 (39%)	69 (32.9%)	32.5%
Syllables With Both Pitch and Note Form Variance	48 (22.9%)	71 (33.8%)	40 (19%)	25.2%
Syllables With Textual Variance	2 (1%)	4 (1.9%)	0	1%

Table 40: Total amount of variation between three sources of *Veni sancte spiritus*.

As noted above, the wide transmission of this sequence text may explain the very low textual variation between the three sources: even the largest amount of variation is still less than 2%, while the Gonville and Caius source and the version in the Dublin Troper have no textual

---

[199] The same process will be applied in section 3.1.v.

variance at all. As with the other sequences in the Dublin Troper, each stanza of *Veni sancte spiritus* is notated individually, like the version from *GB-Lbl* Sloane 1580 (and unlike the Gonville and Caius witness). The idiosyncrasies present in each fully-notated stanza may cause higher amounts of variation in the case of this example: there is 66.7% total variation between the Dublin Troper witness and the version from Sloane 1580, compared to 53.4% between the Sloane 1580 and Gonville and Caius versions, and only 41.4% between Gonville and Caius and the Dublin Troper.

As noted above, the presence of complex notational forms (like liquescence and the wave note) in the Sloane manuscript results in a higher amount of variation: there is almost twice as much variance in notational forms between Sloane 1580 and the Dublin Troper (50%) than there is between the Gonville and Caius and Dublin Troper witnesses (27.6%). Figure 113 is an excerpt from *Veni sancte spiritus*, showing notational variation among the sources in stanza 1b.
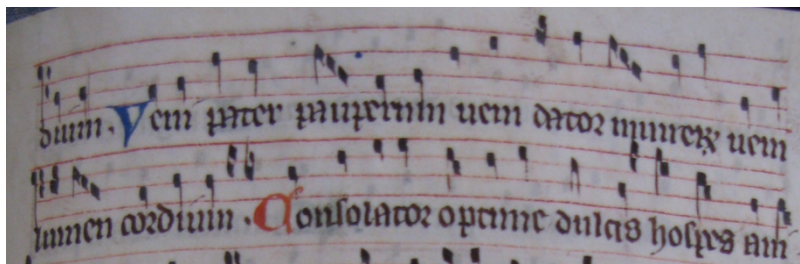
Figure 113: Notational variance between three versions of *Veni sancte spiritus*, stanza 1b: *GB-Lbl* Sloane 1580, f.152v (top), *GB-Cgc* 240/126, p.6 (middle), and *GB-Cu* Add. 710, f.69r (bottom).

While all three versions transmit the same overall melodic content (including D finals), Figure 113 shows the range of possible ways that a scribe or a singer might realise the generic melody of *Veni sancte spiritus*. Again, this is a recurring theme in this focus on concordances: there is a high amount of variation present even in concordances whose status as 'the same song' is generally accepted.

Even though there is a greater amount of notational variation between Sloane 1580 and the Dublin Troper, there is less variation in pitch between these witnesses than there is between the Dublin Troper and the version from Gonville and Caius: 25.7% and 32.9%, respectively. There is actually a higher percentage of pitch variance in both of the comparisons involving the Dublin Troper source, likely due to the fourth verse, shown in Figure 114.
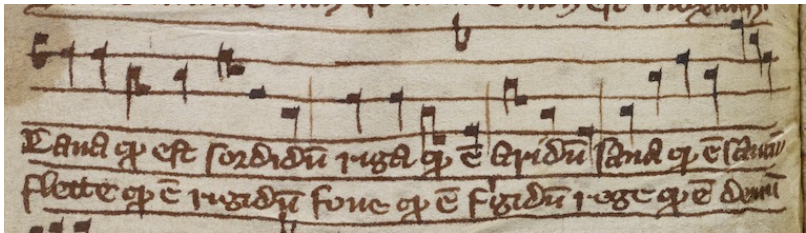
Figure 114: Pitch comparison of all three versions of *Veni sancte spiritus*, stanza 4a.

As shown in Figure 114, while stanza 4a begins on c in the versions from *GB-Lbl* Sloane 1580 and *GB-Cgc* 240/126, in the Dublin Troper version the scribe has written the starting pitch as d, resulting in the majority of the verse being one tone apart. Even though verse 4 begins on d instead of c, the final of each stanza is still D, just as it is in the other verses.

3.1.iv: Gaude gloriosa morborum medela

		%
Total Number of Syllables	144 (last 12 missing from v1)	N/A
Total Syllabic Variance	11	7.5
Syllables With Variance in Note Forms	11	7.5
Syllables With Pitch Variance	9	6.2
Syllables With Both Pitch and Note Form Variance	9	6.2
Syllables With Textual Variance	1	0.7

Table 41: Total amount of variation between sources of *Gaude gloriosa morborum medela.*

The comparison between witnesses of *Gaude gloriosa morborum medela* is unique in that both versions are found in the same manuscript: *F-EV* 17. The songs are found in different gatherings, and are notated by different scribes. To avoid confusion, they will be referred to in the order they appear in the source: Version one on f.4v, and version two on ff.158v-159r. In the second version, the scribe seems to be experimenting with the form, specifically rearranging the sections of the poem. This rearrangement is also evident in the musical structure; in each version, certain stanzas are always associated with a specific musical unit, though the text order may change between versions.[200] Deeming has argued that the scribe of the second version has re-worked the song's form in order to make the poem's structure in *versus retrogradi* more apparent in performance, so that the final word of the first section of text is immediately repeated when starting the retrograde performance of each stanza (this is much less apparent in version one).[201] This thesis will not attempt to decipher which version

---

[200] The structure of the song has been analysed at length by Helen Deeming in her article, 'The Song and the Page: Experiments with Form and Layout in Manuscripts of Medieval Latin Song', *Plainsong and Medieval Music* 15, no. 1 (2006): 1-27.

[201] While it is likely that, as Deeming suggests, the scribe of the second version is using the first as an exemplar, it cannot be conclusively proved; if anything, the minor notational differences present between the versions (discussed below) could even be an indication that the second scribe was not using the first as an exemplar at all.

preceded the other, but will instead offer a comparison of the versions in terms of their notation. At times, the limitations of modern language will require the use of relative terminology in order to compare the two versions, but use of such vocabulary should not be interpreted as an attempt to prove precedence.

The versions are written with three sections of music (A, B, and C), and three stanzas of text (1, 2, and 3). The music of A is always found with stanza one, B with two, and so forth, resulting in two different structures shown in Table 42.[202]

Version One	f.4v	Version Two	f.158v-159r
1	A	1	A
2	B	1 (reversed)	A
3	C	2	B
1 (reversed)	A	2 (reversed)	B
2 (reversed)	B	3	C
3 (reversed)	C	3 (reversed)	C

Table 42: Comparison of musical and poetic structure in *Gaude gloriosa morborum medela*, *F-EV* 17.

Within the musical sections found in each song, the notation is mostly identical, as evidenced in the data provided in Table 41. The scribes use only virgae for single-note forms. Clives are common, as are the torculus, scandicus, and porrectus forms. Both scribes use the extended clivis method of writing three- and four-note descending forms. There are certain points at which the versions differ in their pitch content (when comparing the same stanzas), but these differences are only slight, resulting in less than 1% syllabic variance overall. There is a definite relationship between change in pitch and change in note form in this instance: every time there is a variation in pitch, it is accompanied by a variation in note form.

---

[202] Contents of table adapted from a chart found in Deeming, 'The Song and the Page', 17-18.

Though the amount of variance is already low, it is much lower if the repetitive structure of the song is taken into consideration. These adaptations occur in both iterations of the stanza structures (meaning both forward and reversed), so every slight variance occurs at two different places within each version of the song. Figures 115 and 116 show an instance, found in both iterations of stanza 1 (musical material A), where a descending syllable is written as a three-note descending form in version one, and as a four-note descending form in version two. Version one is shown on the left-hand side of the figures, and version two is on the right.
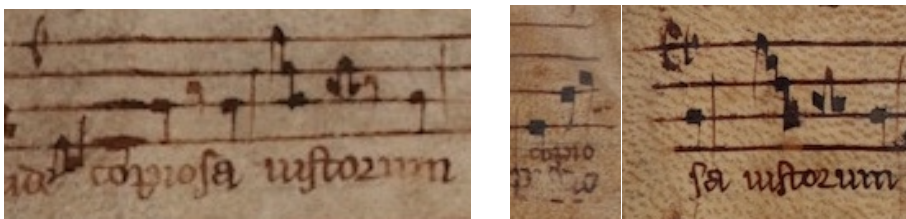
Figure 115: Three- and four-note descending form usage in stanza 1 of *Gaude gloriosa morborum medela*, from *F-EV* 17, f.4v (left) and f.158v (right).
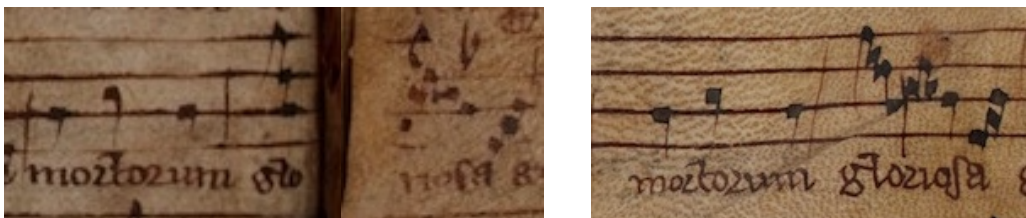
Figure 116: Three- and four-note descending form usage in stanza 1 (reversed) of *Gaude gloriosa morborum medela*, from *F-EV* 17, f.4v (left) and f.158v (right).

In each case, the note forms span the same total distance of a descending fifth at IUStorum and GLOriosa, though the internal collection of notes may differ. Similarly, in both iterations of the second stanza (musical material B), there is a point at which one scribe has written a torculus in the first version, and the other scribe used a porrectus in the second, shown in Figures 117 and 118.
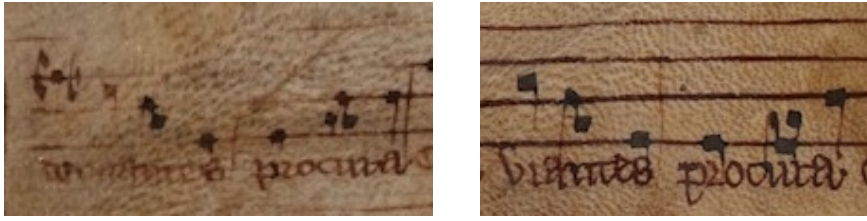
Figure 117: Torculus and porrectus use in stanza 2 of *Gaude gloriosa morborum medela*, from *F-EV* 17, f.4v (left) and f.158v (right).
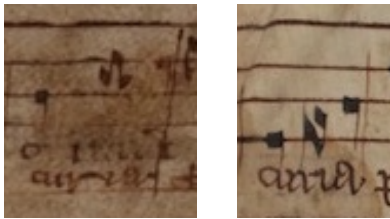
Figure 118: Torculus and porrectus use in stanza 2 (reversed) of *Gaude gloriosa morborum medela*, from *F-EV* 17, f.4v (left) and f.159r (right).

Both examples, on proCUra (Figure 117) and cuRIa (Figure 118), show slight differentiation in pitch content between versions, similar to the manner in which some forms varied in Figures 115 and 116. These variations between versions do not change the song's identity, in the same way that each individual scribe's variations in form do not alter the overall song. For example, Figures 117 and 118 each show a porrectus form: over proCUra and cuRIa, respectively. The form in proCUra does not have the same ligature-esque slant as the porrectus over cuRIa, but this differentiation in form is not unique to the different versions. Both ways of writing the porrectus form are present in both versions of *Gaude gloriosa*.

There is another single variation between the third stanzas (musical material C), although it is slightly more elaborate than the adaptations from the first and second stanzas.
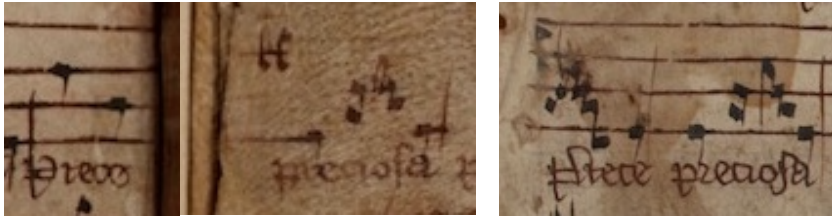
Figure 119: Compound neume usage in stanza 3 of *Gaude gloriosa morborum medela*, from *F-EV* 17, f.4v (left) and f.159r (right).
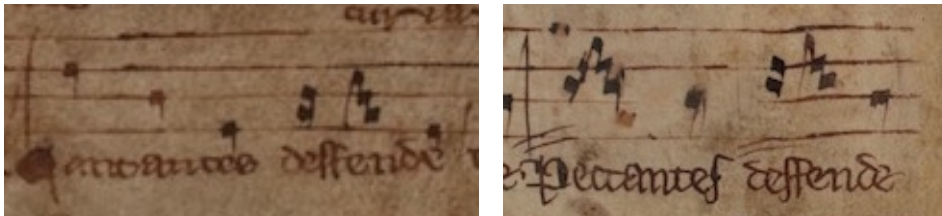
Figure 120: Compound neume usage in stanza 3 (reversed) of *Gaude gloriosa morborum medela*, from *F-EV* 17, f.4v (left) and f.159r (right).

Instead of falling thirds on 'prece' (Figure 119) and 'cantantes' (Figure 120), the second scribe uses a six-note compound made of rising and falling square notes joined together. At the end of this third stanza, where the first iteration ends and the retrograde begins, the six-note figure (G-a-b♭-a-G-E) immediately follows an inverse six-note figure, shown in Figure 121.
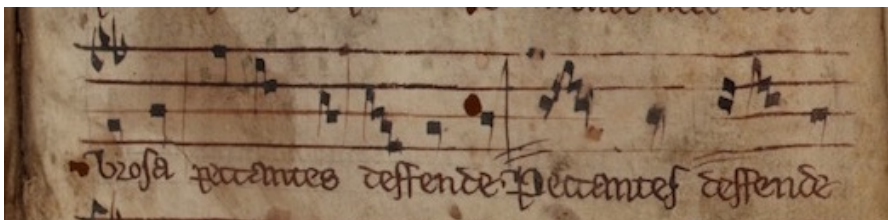
Figure 121: Compound inversions in stanza 3 of *Gaude gloriosa morborum medela*, from *F-EV* 17, f.159r.

The slash marks above 'Peccantes' and 'deffende' at the end of this line are likely meant to indicate that the words are reversed, which would mean that the performer finishes the third stanza on 'deffende' with a six-note pattern on G-F-E-D-E-F, followed immediately by 'deffende' on G-a-b♭-a-G-E, creating an even longer melismatic passage that has a pitch centre on F, the final of the song. It is possible that the second scribe, while experimenting

200

with the structure of the stanzas, was also experimenting with the visual elements of the notation to allow each stanza to have a melodic inversion at its midpoint.

For example, in the second stanza, the place where the second scribe used torculus forms (unlike the first scribe, who used used porrectus forms) on proCUra and on cuRIa happens to be directly before the midpoint of the stanza; in the first stanza as 'procura curia' and as 'curia procura' in retrograde. Figure 122 shows the first version (left) and adapted second version (right).

Figure 122: Midpoint inversions in stanza 2 of *Gaude gloriosa morborum medela*, from *F-EV* 17, f.4v (left) and f.159r (right).

The pitch-directional contrast between the porrectus and the torculus in the adapted second version creates a sonic midpoint on B♭ — the starting pitch of the stanza. These moments are not perfectly symmetrical, but are perhaps early forays into a musical representation of an existing poetic technique.[203]

---

[203] Virginia Newes has suggested that single-line retrograde duplication can be traced to the twelfth century. Newes, 'Writing, Reading and Memorizing: The Transmission and Resolution of Retrograde Canons from the 14th and 15th Centuries', *Early Music* 18, no. 2 (1990): 218-21+223-34; 218.

3.1.v: Omnis caro peccaverat

		%
Total Number of Syllables	101	N/A
Total Syllabic Variance	60	59.4
Syllables With Variance in Note Forms	53	51.5
Syllables With Pitch Variance	21	22.5
Syllables With Both Pitch and Note Form Variance	14	14.2
Syllables With Textual Variance	4	4

Table 43: Total amount of variation between sources of *Omnis caro peccaverat*.

Omnis caro peccaverat is a Latin song found in *F-Pn* fr. 25408, and *GB-Cgc* 240/126. The Gonville and Caius source is incomplete; only 101 syllables are available for that source: four and a half verses, compared to 15 in fr. 25408. Therefore, only the 101 syllables of shared text and music will be used for the purposes of this comparison. The song is mostly syllabic, and the majority of forms used are single notes. Both sources use puncta and virgae, though in both versions the punctum is used less frequently. The opening verse of each version is shown below, in Figure 123.
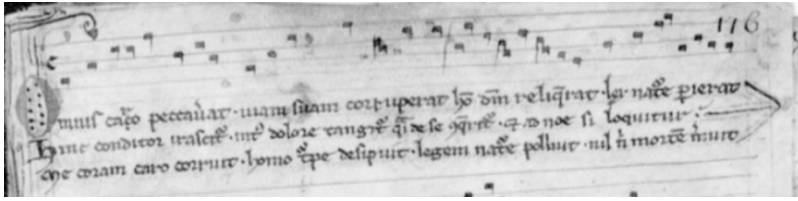
Figure 123: Verse 1 of *Omnis caro peccaverat*, from *F-Pn* fr. 25408, f.116 (top), and *GB-Cgc* 240/126, p.12 (bottom).

The pieces are laid out similarly, with three stanzas of text under each line of music notation. This is similar to the progressive repetition style, albeit with three repeats of the musical material instead of two, and each verse varying in terms of metrical structure. The first verse has 32 syllables, repeated three times, the second has 27, the third 28, &c. An examination of the longer text in *F-Pn* fr. 25408 shows that this irregularity continues throughout the poem.

The final verse of the Gonville and Caius source has a very high amount of variance, until its abrupt end in the middle of the fourth verse. Verse four is shown in Figure 124.
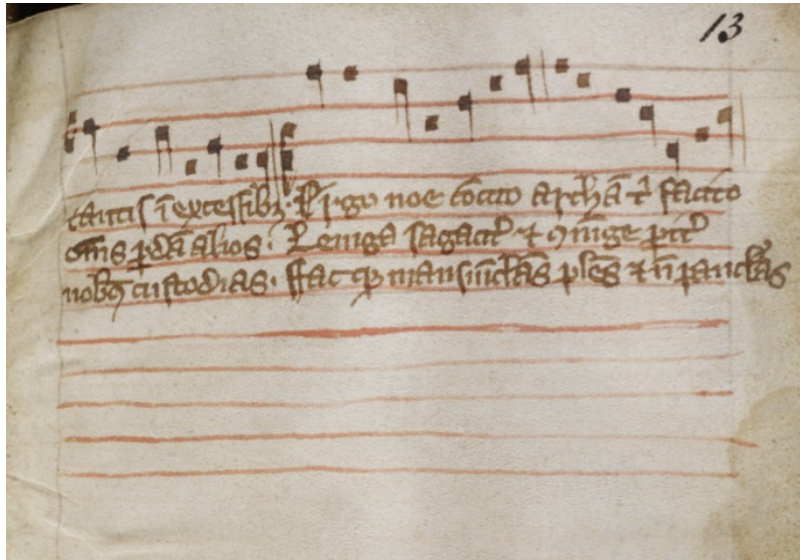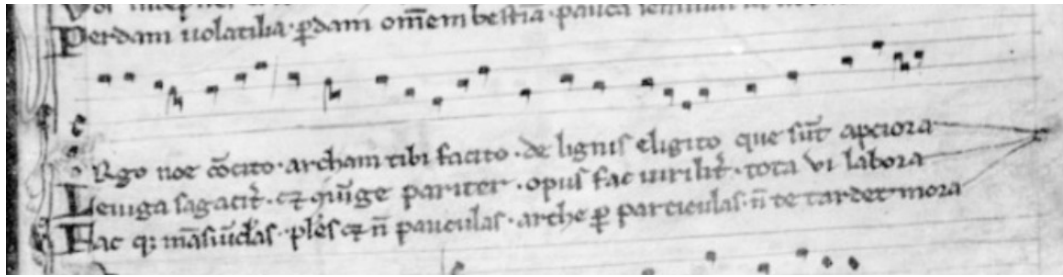
Figure 124: Comparison of *Omnis caro peccaverat*, verse 4, from *F-Pn* fr. 25408, f.117r (top) and *Cgc* 240/126, p.13 (bottom).

By the time the Gonville and Caius version ends, the comparison of these two witnesses shows either notational or pitch variance (or both) on every syllable of the verse. It is impossible to know for certain why the Gonville and Caius scribe stopped writing at this exact point, with the next stave pre-ruled and left blank. However, the fact that this version stops mid-verse, with the corresponding text for the 'b' and 'c' versicles included, suggests that the exemplar was likely written with the same layout, and this point was a page-juncture in that source.

Further examination of the song is possible, using an external melodic concordance: *Omnis caro peccaverat* is found in the Dublin Troper, which, like fr. 25408, transmits a version of the song with considerably more available text. Table 44 shows the comparisons between all three witnesses.

	fr. 25408 / *Cgc* 240/126	fr. 25408 / Add. 710	*Cgc* 240/126 / Add. 710	Average
Total Number of Syllables	101	101*	101	101
Total Syllabic Variance	60 (59.4%)	65 (64.4%)	60 (59.4%)	61.1%
Syllables With Variance in Note Forms	51 (50.5%)	52 (51.5%)	53 (52.5%)	51.5%
Syllables With Pitch Variance	25 (24.8%)	22 (21.8%)	21 (20.8%)	22.5%
Syllables With Both Pitch and Note Form Variance	17 (16.8%)	12 (11.9%)	14 (13.9%)	14.2%
Syllables With Textual Variance	3 (3%)	8 (7.9%)	4 (4%)	5%

Table 44: Total amount of variation between the three versions of *Omnis caro peccaverat*.

Within the version of *Omnis caro peccaverat* found in the Dublin Troper, the first four verses (101 syllables) have an amount of variance similar to the versions from the *MB* 95 sources. However, from the fifth verse until the end of the piece, the textual and notational variation between fr. 25408 and the Dublin Troper is almost 100% for every verse (either in pitch, form, or both). The divergence goes beyond the pitch differentiation seen thus far in the examination of the concordances, which is typically limited to slight changes near the middle or end of the stanza, with the general melodic motion remaining the same between the witnesses. The differentiation after verse four, however, is so substantial that it almost seems as if these are no longer the same song.[204] Therefore for the purpose of this study the scope of Table 44 will remain the 101 syllables present in the Gonville and Caius source.

This complete deviation after the fourth verse raises a lot of questions about transmission and song identity, specifically that the first four verses could be so similar between all three sources (even containing similar percentages of variation in all three

---

[204] This concept of similarity will be discussed further in the conclusion of this chapter.

categories shown). The second row of Table 44 shows the total amount of syllabic variation between the three witnesses: the Gonville and Caius source shows the exact same number of syllabic variations in the comparisons with both fr. 25408 and the Dublin Troper. It is tempting to think that this might mean that the witnesses in fr. 25408 and the Dublin Troper are very similar, but this is not the case: while notational and pitch variation between fr. 25408 and the Dublin Troper are comparable with the average amounts of variation between the other witnesses, the amount of textual variation between these two witnesses is twice as high as the other comparisons (see the last row of Table 44). However, there are certain phrases that are similar between the pieces, such as the opening phrase of verse 14, shown below, in Figure 125.
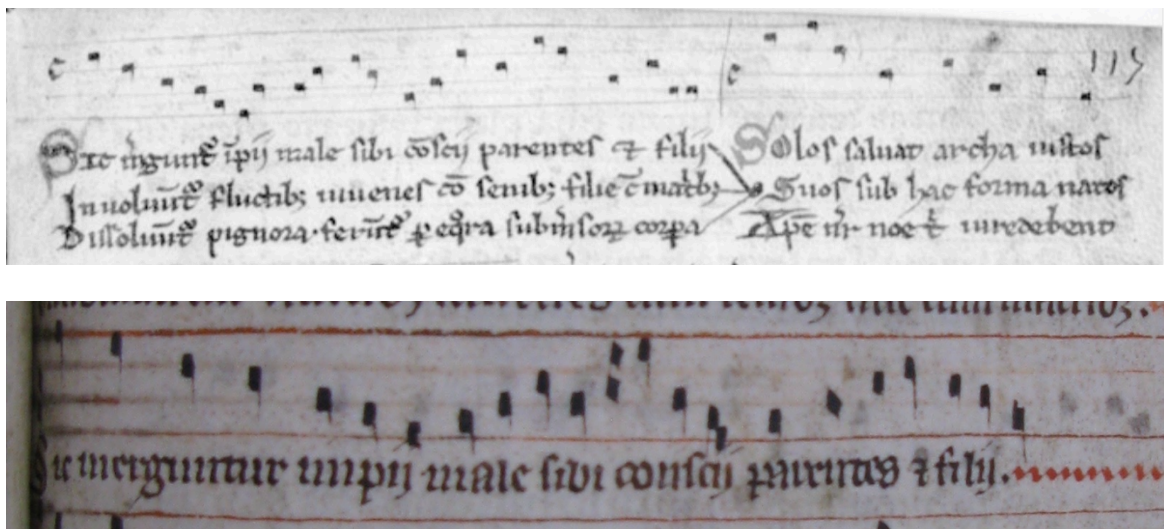
Figure 125: Comparison of *Omnis caro peccaverat*, verse 14, from *F-Pn* fr. 25408, f.117r (top) and *GB-Cu* Add. 710, f.127r (bottom).

As shown above, the verses begin with a similar seven-note descending passage, though the fr. 25408 version begins on D and the Dublin Troper version begins on G. After the descending passage, however, the two versions are hardly similar at all, with the exception of their shared text. The text does not offer that much similarity, though: the second and third versicles shown in the version from fr. 25408 are not present in the Dublin Troper (as is the

case for the second and third versicles of verse 15). The textual variation between *F-Pn* fr. 25408 and the Dublin Troper from the fifth verse until the end of the song is another of the main reasons for limiting the scope of this examination of notation; the relationship between text and notation is close enough that a considerable difference in text typically results in substantial notational variation as well.

The opening verse of each version is shown in Figure 126, for a visual comparison of notational style.
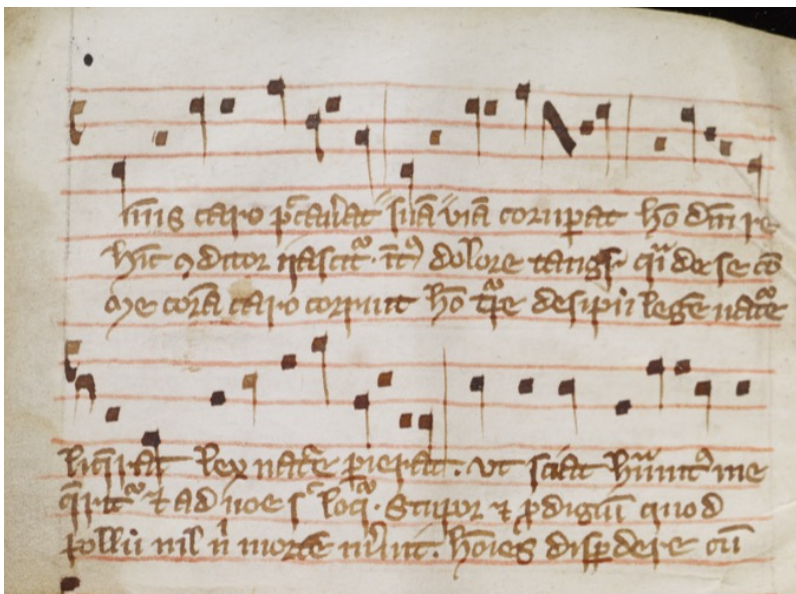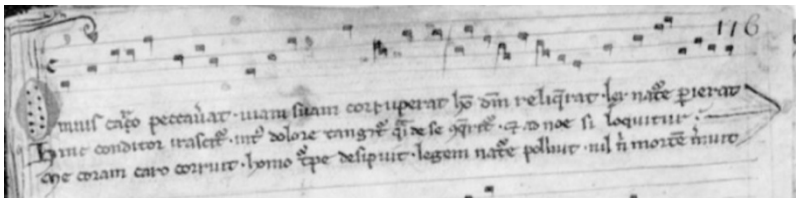
Figure 126: Opening of *Omnis caro peccaverat*, from *F-Pn* fr. 25408, f.116 (top), *GB-Cgc* 240/126, p.12 (middle), and *GB-Cu* Add. 710 (bottom).

All three notational hands are quite square, though the hand of fr. 25408 is slightly more curved. The Gonville and Caius scribe uses an oblique ligature-type form in the first stanza, and the Dublin Troper scribe uses the cephalicus form regularly, while the other two scribes do not.[205]

As it stands, *Omnis caro peccaverat* offers a unique opportunity: to examine concordances that have relatively consistent amounts of variation before deviating quite abruptly. Unfortunately, due to the nature of this thesis and the limitations both in scope and in length, further work on these curious witnesses must be reserved for another time.

3.1.vi: Stand wel moder

		%
Total Number of Syllables	205*	N/A
Total Syllabic Variance	161	74
Syllables With Variance in Note Forms	66	30.3
Syllables With Pitch Variance	69	31.7
Syllables With Both Pitch and Note Form Variance	45	20.7
Syllables With Textual Variance	116	53.3

Table 45: Total amount of variation between sources of *Stand wel moder*.

Stand wel moder exists in two sources: *GB-Cjc* E.8, and *GB-Lbl* Royal 12 E. i.[206] The version in *GB-Lbl* Royal 12 E. i has a single line of text written under the notation, while in the Cambridge manuscript *Stand wel moder* is written as a contrafactum, with its text written

---

[205] This ligature-type form will be discussed further in section 3.3.i, in regard to its presence in trouvère manuscript *R*.

[206] In the latter source, the first phrase is spelled 'Stond wel moder'. When referring to specific sources the individual spellings will be used, but general references to the song will use the 'Stand' spelling.

underneath that of *Stabat iuxta Christi crucem*.[207] Neither verse is complete: *GB-Cjc* E.8 ends

after the first half of the fifth verse, and *GB-Lbl* Royal 12 E. i ends after the full fifth verse.

Because of this, the comparison between sources ends after the first stanza of verse five,

resulting in 205 total syllables for comparison, even though the Royal 12 E. i source has 230

total syllables. As earlier sections of this thesis have shown, the incomplete status of the

sources is not unique to this comparison: besides the two versions with music discussed in

this section, the song is preserved in text-only editions in nine other manuscripts, only three

of which have the 'full' eleven stanzas.[208]

There are more points of variance between the witnesses of *Stand wel moder* than any

of the previous songs examined in this section. When comparing the versions in the

Cambridge and Royal manuscripts, it is not a case of one version being 'plainer' and one

having more ornamentation, but rather that each is unique in its own right. The notation

found in *GB-Lbl* Royal 12 E. i is considerably neater than the notation of *GB-Cjc* E.8. The

virgae note-heads are square and clean, and puncta are diamond-shaped. The scribe uses the

clivis form regularly, and the pes, torculus and scandicus forms are present as well. All three

adaptations of the three-note descending neume are present in this version of the song, though

the English conjunctura is the form used most frequently. In contrast, the Cambridge source

uses only virgae for single notes, and exclusively uses the extended clivis to write the three-

note descending form. The scribe of *GB-Lbl* Royal 12 E. i uses liquescence, but only

sparingly: once on wERnen (for the double consonant) and once on DEye (which has a

---

[207] There is another contrafactum of this piece, in the form of a concordance with *Stabat iuxta Christi crucem*, known as *[…] stod ho pere neh* (the brackets included because of the missing first three verses of text), found in *GB-Ob* Tanner 169*. This source is not included in the data comparison in Table 45 because of the lack of comparable verses of the song, due to extensive damage (as noted in the introduction to this section). The contrafactum begins at the end of the fourth stanza, meaning the only shared notational material between this source and the sources examined in this chapter is two stanzas from verses four and five.

[208] Susanna Greer Fein, 'Article 60, Stond wel moder, under rode: Introduction', in *The Complete Harley 2253 Manuscript*, Vol. 2 (Kalamazoo, MI: Medieval Institute Publications, 2014), accessed 16 March 2016, http://d.lib.rochester.edu/teams/text/fein-harley2253-volume-2-article-60-introduction.

diphthong). The scribe does not always follow the traditional conventions of liquescence, however: many other double consonants do not receive this treatment, including 'hernen', in stanza three. Because the version of *Stand wel moder* in *GB-Cjc* E.8 is a contrafactum, the musical notation is aligned with the Latin text, making it difficult at times to read the English text with the notation. Figure 127 shows the opening line of the song in both versions.
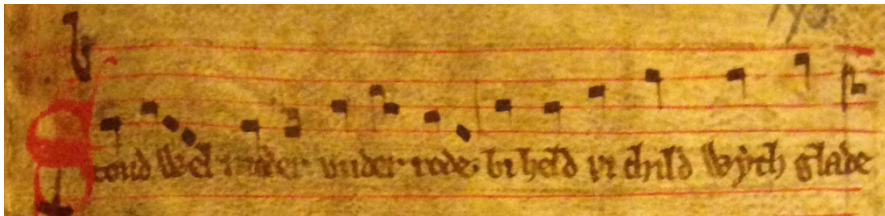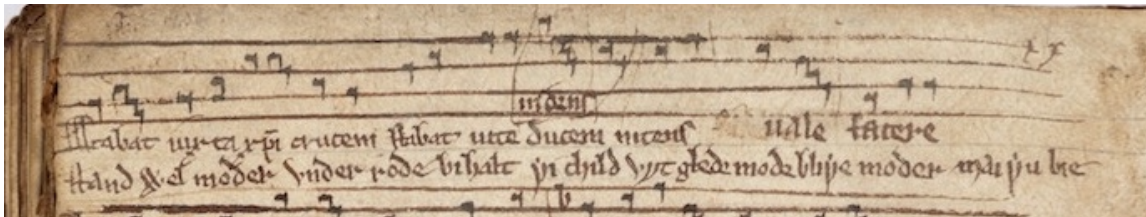
Figure 127: Opening lines of *Stand wel moder*, from *GB-Cjc* E.8, f.106v (top) and *Stond wel moder*, from *GB-Lbl* Royal 12 E. i, f.193r (bottom).

It is evident that the notation of the Cambridge manuscript was written with the Latin text in mind, because several syllables in the contrafactum do not have corresponding notes. The English contrafactum does not fit easily into the syllabic structure of *Stabat iuxta Christi crucem* (8 syllables, 8 syllables, 7 syllables), and several words at the start of the second and third syllabic groupings are often left un-notated. For example, in the figure above, BIhalt (top image) presents an extra syllable and is therefore 'missing' a note. This is not a problem in *GB-Lbl* Royal 12 E. i; the additional syllables (which, like 'bihalt', are often at the beginning of phrases) are given the same note of the following syllable (see the alternatively spelled 'biheld' in the bottom example from Figure 127). Helen Deeming has pointed out that these additional notes are being added to unstressed syllables, resulting in the added notes

functioning as anacruses to these musical phrases.[209] The high number of slight melodic differences between these two sources can certainly be attributed in no small part to the close relationship between the notation of *GB-Cjc* E.8 and its Latin text. Some of the substantial variation in melodic motion (beyond the difference between a clivis and a climacus, for example) can be attributed to the scribe of *GB-Lbl* Royal 12 E. i emphasising certain words in the English text. An example of this can be seen in Figure 128, which shows the opening of the song's second stanza in both manuscripts.
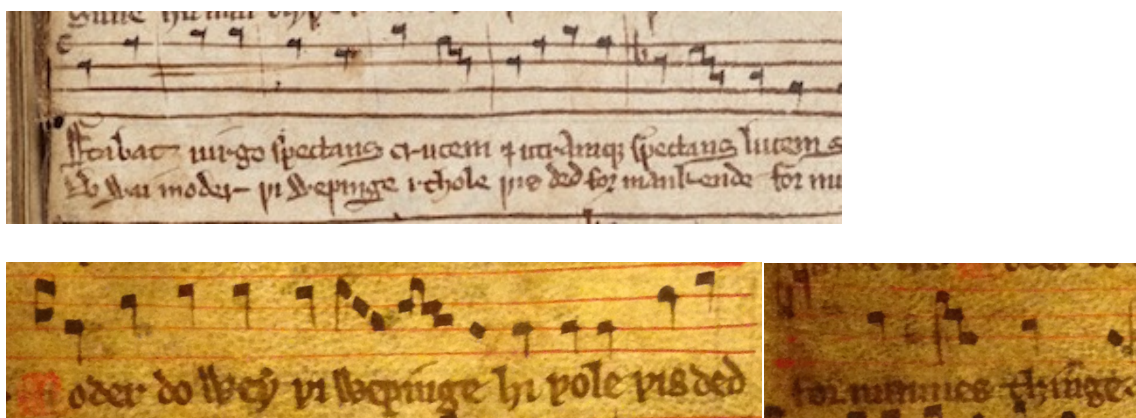
Figure 128: *Stand wel moder*, second stanza, from *GB-Cjc* E.8 (top), and *GB-Lbl* Royal 12 E. i (bottom).

The Latin text of the second stanza is 'Stabat virgo spectans crucem / et utramque spectans lucem', describing Mary watching her son's crucifixion and also watching the light; the dual use of 'spectans' is an appropriate textual accompaniment for the sequential melody of the Cambridge source, which repeatedly moves up to d, and is followed by groups of extended clives descending stepwise. This pattern of using extended clives at the ends of phrases continues through to the end of the stanza. This same pattern is used in the second and third phrases of the stanza in *GB-Lbl* Royal 12 E. i, but the first phrase is slightly different. In the

---

[209] Deeming, 'Multilingual Networks in Twelfth- and Thirteenth-Century Song', in *Language in Medieval Britain: Networks and Exchanges*, Harlaxton Medieval Studies 25, ed. by Mary Carruthers (Donington: Shaun Tyas, 2015), 127-43; 134.

English text (from *GB-Lbl* Royal 12 E. i) Jesus comforts Mary, telling her to stop weeping, and explaining that his death is for the sake of mankind: 'Moder do wey þi wepinge / Hi þole þis ded for mannes thinge'. As shown in the figure, the second phrase follows the descending pattern used in *GB-Cjc* E.8, and the third phrase (not shown in the figure) does this as well. However, the first phrase deviates from the formula on 'wepinge', using a melismatic passage that, combined with the switch to B naturals (signalled by the shift to a C clef instead of B flat) at the start of this stanza, is reminiscent of a mourning cry.

3.1.vii: Worldes blis ne last no throwe

		%
Total Number of Syllables	83 (Arundel) / 89 (Rawl)	N/A
Total Syllabic Variance	75	87.2
Syllables With Variance in Note Forms	30	34.9
Syllables With Pitch Variance	22	25.6
Syllables With Both Pitch and Note Form Variance	22	25.6
Syllables With Textual Variance	44	51.2

Table 46: Total amount of variation between sources of *Worldes blis ne last no throwe*.

The versions of *Worldes blis ne last no throwe* found in *GB-Lbl* Arundel 248 and *GB-Ob* Rawlinson G. 18 are immediately distinguishable in the context of their manuscript sources. This visual differentiation is reflected in the data from Table 46: even allowing for syllabic difference between sources, the total syllabic variance is more than 80%.

Though the hands are quite different, the scribes use mostly similar note forms, with an average of about 35% note form variance between the witnesses. As shown in Table 46, within the existing variances, there are syllables which have variance in note forms while still

presenting the same pitch between each source, but there are no cases in which the scribes have written specific syllables at differing pitches using the same note forms. Both scribes use the English conjunctura to write the three-note descending from, and exclusively use virgae to write single notes, with the exception of doubled notes used in Arundel 248, and a single punctum, found in the last line of folio 105v in the Rawlinson G.18 version, which will be discussed later in this section.[210] Overall, the notation in the version found in Arundel 248 is much more ornamental, frequently using compound forms where the scribe of Rawlinson G. 18 uses more 'standard' forms of notation.[211] The general cleanliness of the notation in *GB-Ob* Rawlinson G. 18 is complimented by its layout on the page. Deeming has discussed the layout of the Arundel songs at length, noting that the songs were added to empty final versos of quires that were pre-ruled for text.[212] Conversely, the Rawlinson source is laid out in a neat, clean column, with deep margins on either side, and plenty of space to write the notation. The layout of each witness can be seen below in Figure 129.

---

[210] Ardis Butterfield and Helen Deeming have discussed this particular concordance in great detail (including a parallel transcription of the witnesses), as well as further particulars on the non-notational elements of these sources, and a discussion of the interdisciplinary challenges of editing thirteenth-century monophonic song in, 'Editing Insular Song Across the Disciplines', in *Probable Truth: Editing Medieval Texts from Britain in the Twenty-First Century*, V. Gillespie and A. Hudson, eds. (Turnhout: Brepols, 2013), 151-66.

[211] A point that has been made by multiple scholars, including Butterfield and Deeming, in 'Editing Insular Song', 162, and Frank L. Harrison, in Eric J. Dobson and Frank L. Harrison, *Medieval English Songs* (London: Faber, 1979), 299.

[212] Helen Deeming, 'Isolated Jottings? The Compilation, Preparation, and Use of Song Sources from Thirteenth-Century Britain', *Journal of the Alamire Foundation* 6, no. 2 (2014): 139-52.
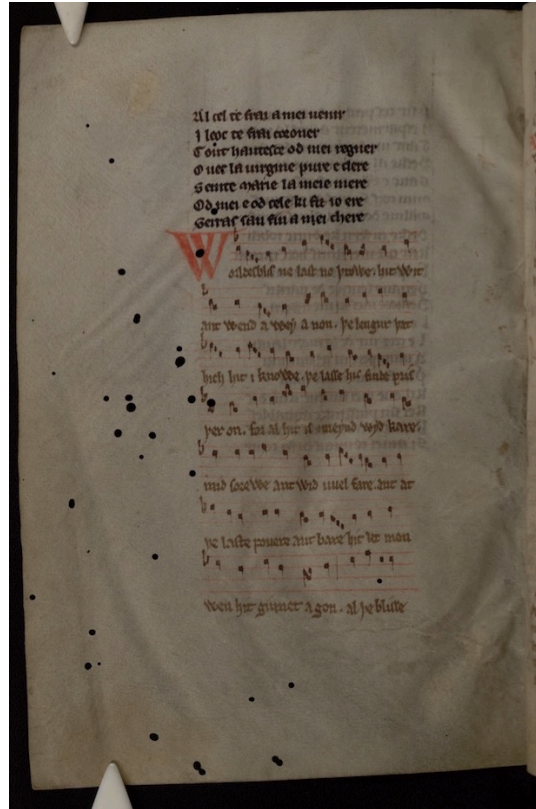
Figure 129: *Worldes blis ne last no throwe*, from *GB-Lbl* Arundel 248, f.154r (left), and *GB-Ob* Rawlinson G.18, f.105v (right).

The figures which appear most commonly in the Arundel 248 version—but are not found in Rawlinson G.18—include several compound forms, the wave note, and doubled puncta over a single syllable. All are shown in Figure 130.

A.   B.   C.   D.   E.
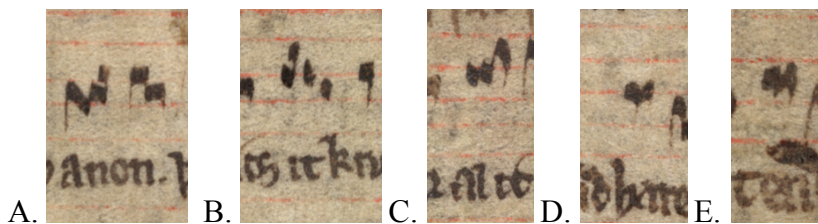
Figure 130: Compound forms used in *Worldes blis ne last no throwe*, from *GB-Lbl* Arundel 248, f.154r.

Letter A shows a four-note compound form made up of the oblique section of a porrectus, connected to a pes. This form is found twice in the Arundel 248 witness: at the penultimate syllables of lines two and three of this stanza. The example in the figure above is from the second phrase: 'it went and wit awey Anon'. Letter B shows another four-note compound,

this time made of a pes combined with the puncta from a descending form (such as climacus, or in the case of Arundel 248, an English conjunctura). This form is found twice in this witness, once with two descending puncta, and once with three. Letter C shows a compound made of a wave note and a cephalicus, used only once, in the line 'for AL it is i-meind mid care / with serwen and mid ivel fare', discussing how the joys of the world are mixed with care, sorrow, and evil. As discussed earlier in this thesis, not much is known about the performative aspects of the wave note or of liquescent forms, but in this context it is possible to speculate on the manner that this form might be used to convey such a complex emotional statement: that 'all' of worldly joy is a mixture which includes negative emotion alongside the positive.

Letter D shows the doubled punctum, similar in structure to the wave note, but with the slightest of tails in the middle of the form. The scribe uses this form twice: on the words BAre and ÞAre, quite unassuming in their context ('bare' and 'there', respectively). The second iteration of this form has a slightly longer tail on the right, slightly resembling the cephalicus form, and it is unclear whether or not the form is meant to include a liquescent each time. Its presence in words which include the letter r would be consistent with traditional cephalicus use, although as shown throughout this thesis, 'traditional' use by no means circumscribes the range of possible uses of liquescent forms in the twelfth and thirteenth centuries.

The version of *Worldes blis* in Rawlinson G.18 only uses one compound form, at the penultimate syllable of the stanza. It resembles several different forms; a pes with a climacus, or a scandicus followed by descending puncta. The form can be seen in Figure 131.
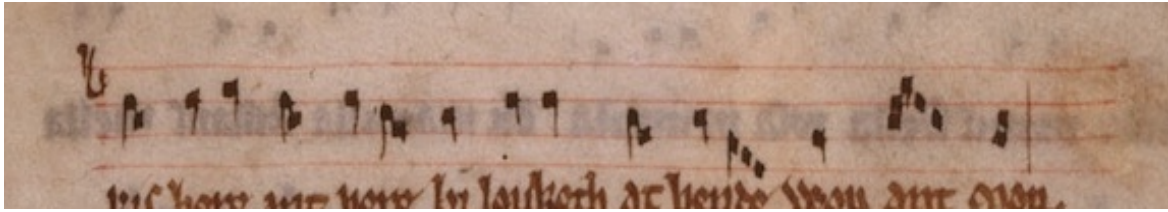
Figure 131: Final notated line of *Worldes blis ne last no throwe*, from *GB-Ob* Rawlinson G.18, f.106r.

The same compound figure is used at the end of the Arundel witness, but with three

descending puncta instead of two. A pes follows the compound in the Arundel version as

well, but it is a compound where the lower note of the pes is a wave note, again highlighting

the 'plainness' of the Rawlinson witness compared to that of Arundel 248—something

Butterfield and Deeming point out as well in their article on the two sources: '[I]n only one

case does Rawlinson preserve more notes [than Arundel] … These features suggest that the

Arundel scribe was recording a more ornamented version of the music, and may perhaps

point to a performance practice that was open to the application of melodic flourishes

according to the preferences of particular singers'.[213] Butterfield and Deeming go on to note

that these flourishes and general ornamentation are typically confined to the ends of lines,

particularly the penultimate syllable (as seen earlier in this section in the discussion of

compound forms used in the Arundel source). Whether the version from Rawlinson G.18

would seem to possess such plainness if the Arundel source did not exist to counteract it is

beside the point. Yet Sean Curran has suggested that the 'melodic austerity' of the *GB-Ob*

Rawlinson G.18 version may have been intentional; melodically elaborate sources like

Arundel 248 do not necessarily suggest a textual record of a singular performance, but are

indicative of the myriad techniques a performer could use to decorate a song.[214] These

sources raise questions about reliance upon source material; if a medieval singer were to

---

[213] Butterfield and Deeming, 'Editing Insular Song Across the Disciplines', 162.
[214] Sean Curran, 'Music, Text, and (Mental) Images in a Thirteenth-Century Psalter: Bodleian Library, Rawlinson G 18', Forthcoming. I thank Sean for sharing this article with me in advance of publication.

engage with the notation from Arundel 248, would they feel bound to perform these subtle ornamentations, or exchange them for their own?

This question is part of an overall theme in regard to the concordances examined in section 3.1, and will continue to be explored in regard to the external concordances found in the Dublin Troper (section 3.2) and in existing sources of trouvère song (section 3.3).

3.2: External Concordances in *GB-Cu* Add. 710, 'The Dublin Troper'

Many of the songs examined in this thesis have multiple external concordances, both in insular manuscripts and Continental, liturgical and non-liturgical alike. The Dublin Troper was chosen as the focus for this section due to the sheer number of concordances it contains with the songs in *MB* 95. No other single manuscript contains as many concordances with the *MB* 95 group as the Dublin Troper. Furthermore, the Dublin Troper concordances are also some of the closest temporal witnesses that will allow me to compare notation found in insular miscellany sources with notation used in a manuscript intended for the collection of liturgical materials.[215]

There is no direct evidence which explains the lack of contemporaneous insular source material for twelfth- and thirteenth-century song, but as far as scholars know there are no surviving songbooks which were created in Britain during this period for the specific purpose of collecting song outside a liturgical context. Whether such sources have been lost, or simply never existed, cannot be determined. Deeming has suggested the possibility that a tradition for song collection in Britain had not been established, though a tradition in contemporary France was flourishing.[216] The choices of external concordances that will be discussed in this section (as well as section 3.3) are intended to use techniques of comparing music notation to develop a larger understanding of the notation being used to write twelfth- and thirteenth-century song.

Seventeen songs from *MB* 95 are found in *GB-Cu* Add. 710, known as the Dublin Troper, a Sarum book which belonged to St Patrick's Cathedral in Dublin. The dating of the Dublin Troper varies: the RISM description notes that the manuscript is from the thirteenth

---

[215] Helen Deeming and Samantha Blickhan, 'Songs in Circulation, Texts in Transmission: English Sources and the Dublin Troper', currently under consideration at *Early Music*.

[216] *MB* 95, xxxiv. The widespread tradition of song on the Continent is the reason that witnesses to the *MB* 95 songs within sources of trouvère song will be discussed in section 3.3.

century, and the squared notation used for the majority of the musical contents is stylistically typical of thirteenth-century insular notation (as will be shown in this section). Most recent scholarship dates the manuscript to around 1360, including Stevens' entry in *Cambridge Music Manuscripts, 900-1700*.[217] Though the manuscript is called the Dublin Troper, it is actually a troper-proser, and Ann Buckley has noted that it is unusual in that it contains a separate proser exclusively dedicated to the Virgin Mary.[218] The Dublin Troper possesses the largest amount of Marian items of any extant insular source: 56, followed by 46 more at the end of the book.[219] The Marian proser, which begins on folio 105v and continues through 127v, contains nine of the 22 concordances and contrafacta that correspond to the songs in *MB* 95.[220]

The concordances (and contrafacta) with *MB* 95 found in the Dublin Troper are shown below in Table 47.

[217] John Stevens, 'University Library, Add. MS 710', in *Cambridge Music Manuscripts 900-1700*, ed. Iain Fenlon (Cambridge: Cambridge University Press, 1982), 78-81.
[218] Ann Buckley, 'Music and Musicians in Medieval Irish Society', *Early Music* 28, no. 2 (2000): 165-76+185-90; 189.
[219] Peter M. Lefferts, 'Cantilena and Antiphon: Music for Marian Services in Late Medieval England', in *Studies in Medieval Music: Festschrift for Ernest H. Sanders*, ed. Peter M. Lefferts and Brian Seirup (New York, NY: Department of Music, Columbia University, 1990), 247-282; 258.
[220] For a complete list of the Marian proses in the Dublin Troper, see René-Jean Hesbert, *Le Tropaire-Prosaire de Dublin: Manuscrit Add. 710 de l'Université de Cambridge (vers 1360)*. Monumenta Musica Sacra 4 (Rouen: Imprimerie Rouennaise, 1966) 30-33.

Song Title	*MB* 95	Add. 710	Type
Zima vetus expurgetur	*GB-Lbl* Royal 8 A. xix, ff.6r-8v	ff.57r-58v	Sequence for Easter
Ave Maria gratia plena	*GB-Lbl* Royal 8 A. xix, ff.70v-71v	ff.82v-83r	Marian sequence
Missus Gabriel de celis	*GB-Otc* 34, f.151v	ff.52r-53r	Marian sequence
Ave mundi spes Maria	*GB-Otc* 34, ff.152v-153v	ff.54v-55r	Marian sequence
Hodierne lux diei	*GB-Otc* 34, f.154r	ff.53v-54r	Marian sequence
"	"	ff.77v-78r (contrafactum: *Spe mercedis et corone*)	"
Letabundus exultet fidelis chorus	*GB-Otc* 34, f.154v	ff.42v-43r	Marian sequence / for Christmas
"	"	ff.55r-55v	"
"	"	ff.101v-102r (contrafactum: *Letabundus decantet*)	Sequence for St Patrick
Salve virgo singularis	*GB-Lbl* Cotton Titus A. xxi, f.91r	ff.106v-107r (contrafactum: *Celum deus inclinavit*)	Marian sequence (both)
Veni sancte spiritus	*GB-Lbl* Sloane 1580, ff.152v-153r	ff.68v-69r	Sequence for Pentecost
"	*GB-Cgc* 240/126, p.6	"	"
Salve celi ianua	*F-EV* 17, f.156r	ff.118v-119r (contrafactum: *Ave spes angelico*)	Marian sequence (both)
Spe mercedis et corone	*F-EV* 17, f.157v-158v	ff.77v-78r	Sequence for St Thomas

		ff.53v-54r (contrafactum: *Hodierne lux diei*)	"
"	"		
Omnis caro peccaverat	*F-Pn* fr. 25408, ff.116r-117r	ff.126r-127r	Latin song
"	*GB-Cgc* 240/126, pp.12-13 (incomplete)	"	"
Scribere proposui	*F-Pn* fr. 25408, ff.120r	f.127v	Latin song
Angelus ad virginem	*GB-Lbl* Arundel 248, f.154r	ff.127r-127v	Marian sequence
"	"	ff.130r-130v (3 voices, incomplete text)	"
"	"	f.130v (3 voices, no text)	"
Ave gloriosa virginum regina	*GB-Lbl* Harley 978, ff.7r-8v	ff.125r-126r	Marian sequence
Eterni numinis mater et filia	*GB-Lbl* Harley 978, ff.12r-13r	ff.107v-108v	Marian sequence
Gaude salutata virgo	*GB-Lbl* Harley 978, f.13v	ff.110r-110v	Marian sequence
In ecclesiis celi gloria	*GB-Ob* Digby 2, f.5r	f.127r	Latin song

Table 47: Concordances with the Dublin Troper found in *MB* 95.

As shown in Table 47, all but three of the songs are in sequence form. Although the *MB* 95 witnesses possess the same form as those in the Dublin Troper, the songs' identity as sequences is connected to their liturgical use. In the context of *GB-Cu* Add. 710, these witnesses can retain their liturgical identity as sequences,[221] but the songs in *MB* 95, collected in non-liturgical sources, are songs in sequence form, which Deeming instead chooses to

---

[221] It should be noted, however, that none of the songs have rubrics identifying their liturgical use, therefore their liturgical purpose is only contextually implied by the nature of the book, rather than explicitly codified.

refer to as 'progressive repetition', thus divorcing any discussion of the songs from unintended liturgical overtones.[222] Stevens has also discussed the fluid nature of the sequence as genre: he refers to the form as 'para-liturgical' because, though the sequence had a liturgical purpose, it also heavily influenced non-liturgical (or 'secular') song.[223] This 'para-liturgical' designation is likely the most useful for the Dublin Troper material, due to the lack of explicit designation within the source. Because most of the songs are in sequence form, the notational comparison becomes slightly more frustrating, as the medieval sequence repertory has the unique distinction of being both incredibly variable (in regard to its notation and melody, albeit the latter only slightly) and extremely consistent in terms of its transmission and written existence within multiple sources (a quality that will be exemplified in the comparisons within this section).[224] On the other hand, the notational variability allows for greater insight into insular medieval notational culture, allowing for simultaneous examination of diverse notational forms being used to write the same songs.

Two of the songs, *Letabundus exultet fidelis chorus* and the well-known *Angelus ad virginem*, are written multiple times within the Dublin Troper, with varying degrees of differentiation between the notations; the two versions of *Letabundus* in the Dublin Troper,

---

[222] *MB* 95, xlii.

[223] John Stevens, *Words and Music in the Middle Ages: Song, Narrative, Dance and Drama, 1050-1350* (Cambridge: Cambridge University Press, 1986), 80.

[224] '…[A]lthough some themes and emphases differ from manuscript to manuscript, even from the same location, a corpus of sequences can be identified so consistent and characteristic that a medieval person would have identified this corpus as "sequences".' Nancy van Deusen, 'Review of *Gothic Song: Victorine Sequences and Augustinian Reform in Twelfth-Century Paris*, by Margot Fassler', *Journal of the Royal Musical Association* 120, no. 1 (1995): 146-151; 148. For further information on sequence repertories please see Richard Crocker, *The Early Medieval Sequence* (Berkeley: University of California Press, 1977), and *Studies in Medieval Music Theory and the Early Sequence* (Brookfield, VT: Variorum, 1997); van Deusen, 'The Use and Significance of the Sequence', *Musica Disciplina* 40 (1986): 5-47, and 'Sequence Repertories: A Reappraisal', *Musica Disciplina* 48 (1994): 99-123; Margot Fassler, *Gothic Song: Victorine Sequences and Augustinian Reform in Twelfth-Century Paris* (Cambridge: Cambridge University Press, 1993); David Hiley, 'The Rhymed Sequence in England - A Preliminary Survey', in *Musicologie Médiévale: Notations et Séquences; Actes de la Table Ronde du CNRS à l'Institute de Recherche et d'Histoire des Textes, 6-7 Septembre 1982*, ed. Michel Huglo (Paris: Champion, 1987), 227-246; and Stevens, *Words and Music in the Middle Ages*, esp. 80-109.

while not exact copies, are much closer than the versions of *Angelus ad virginem*. There are also two songs, *Salve virgo singularis* and *Salve celi ianua*, which are found in the Dublin Troper as contrafacta only.[225] The sequence *Dulcis ave penitentis*, found in *GB-Cgc* 240/126 as well as in the Dublin Troper, was originally intended to be included in this section, until a comparison found the two versions to be too varied to be considered melodic concordances.[226]

In this section, I will discuss five of the concordances found in the Dublin Troper, though I will make reference to the other concordances and contrafacta when pertinent. These five examples have been chosen because they reflect the range of notational characteristics found within *GB-Cu* Add. 710, and present some of the common issues that arose when comparing the Dublin Troper notation to the notations used in the *MB* 95 sources.

3.2.i: Missus Gabriel de celis

		%
Total Number of Syllables	311	N/A
Total Syllabic Variance	125	40.2
Syllables With Variance in Note Forms	98	31.5
Syllables With Pitch Variance	59	19
Syllables With Both Pitch and Note Form Variance	38	12.2
Syllables With Textual Variance	6	1.9

Table 48: Total amount of variation between *GB-Otc* 34 and *GB-Cu* Add. 710 sources of *Missus Gabriel de celis*.

---

[225] Deeming and Blickhan, 'Songs in Circulation, Texts in Transmission: English Sources and the Dublin Troper'.
[226] This is similar to the case of *Omnis caro peccaverat* and its witnesses in fr. 25408 and Add. 710 (whose melodies diverged after the fifth verse), the melodic differentiation ranged well beyond two scribes realising a melody in different fashions.

The first of several concordances between the Dublin Troper and *GB-Otc* 34, *Missus Gabriel de celis* has very low amounts of variation between the witnesses: less than 2% textual variance, less than 20% variance in pitch, and just over 30% variation in note forms. The majority of the differences in form are found in representations of single notes. Both scribes use a combination of virgae and puncta, but the Trinity scribe also uses the winged punctum (discussed at length in section 2.2.ii). Figure 132 shows the first versicle from each version.

Figure 132: Excerpts from *Missus Gabriel de celis* showing discrepancies among single-note forms; *GB-Otc* 34, f.151v (top) and *GB-Cu* Add. 710, f.52r (bottom).

In this example, five of the 12 single-note forms are at odds between the witnesses. The single-note forms are the most commonly varied type of form between the Dublin Troper and the songs in *MB* 95. This is likely due in part to the lack of regulation in regard to the use of virgae and puncta, but also simply because of the much higher number of single-note forms used to write these songs, compared to forms comprised of multiple pitches.

As noted above, there is less than 20% variance in pitch between the versions of *Missus Gabriel de celis*. The only section of the song in which the two witnesses show substantial variation in regard to pitch is in the ninth stanza, which begins 'Jesus noster thesus bonus'. Toward the end of verse 5a, with the text 'cuius est in celo thronus', there is a large descending interval at throNUS: a leap of a fifth (down to D) in the Dublin Troper, and a leap

of a sixth (down to C) in the Trinity manuscript. This difference in interval is shown in Figure 133.
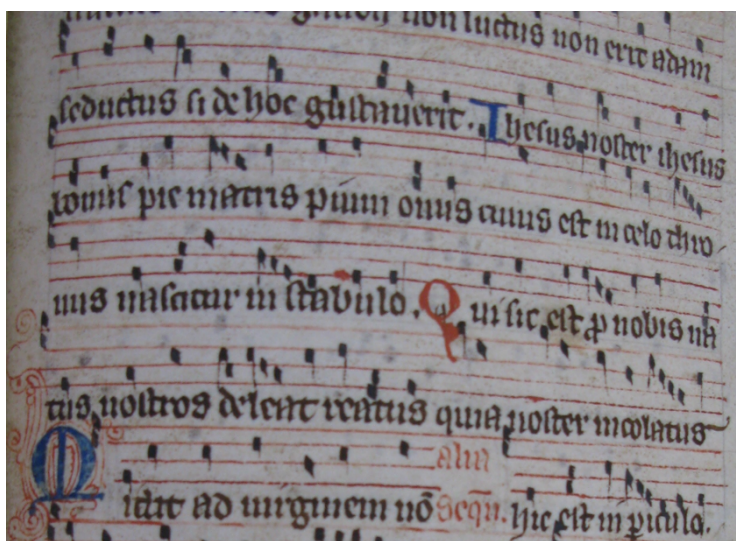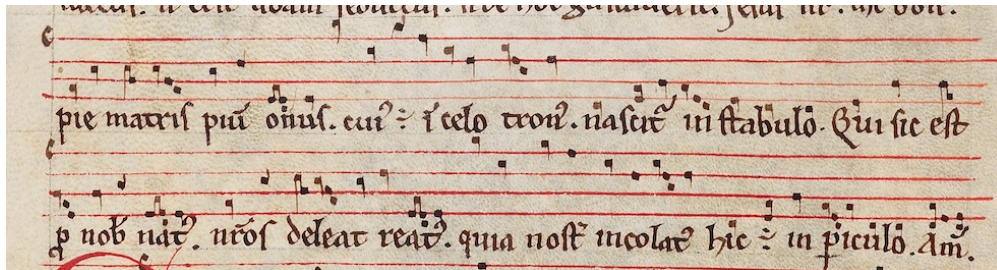
Figure 133: Intervallic variance beginning over the word 'thronus' in *Missus Gabriel de celis*, from *GB-Otc* 34, f.151v (top), and *GB-Cu* Add. 710, f.53r (bottom).

Until this point, the ending note of each stanza (in both versions) was D. Stanzas 5a and 5b of the Dublin Troper version still end with the D final, following the leap of a fifth, but, after the larger interval in the Trinity manuscript, these final two stanzas (5a and 5b) end differently from the Dublin Troper: on C. However, it is not a matter of the versions being consistently one note apart from the leap in question until the end of the piece. The one-note differentiation only lasts through the rest of the stave after the descending interval on folio 151v of *GB-Otc* 34; when the following eight-syllable phrase begins, on 'nostros deleat reatus', it starts on E, matching the opening of 5a, as is the case for the first four verses of the piece.

225

Paying attention to consistency in variance between stanzas is a good way to highlight unusual variations such as the one discussed above. The amount of pitch variance in stanza nine is inconsistent with the amount of pitch variance across the rest of the song (it accounts for almost 25% of pitch variance for the entire song, despite taking place over less than 5% of the total syllables), effectively 'flagging up' areas that may merit closer inspection, including (but not limited to) the possibility of scribal error.

3.2.ii: Hodierne lux diei

	Otc 34 / Add. 710 *Hodierne*	*Otc* 34 / Add. 710 *Spe mercedis*	Add. 710 *Hodierne* / Add. 710 *Spe mercedis*	**Average**
Total Number of Syllables	230	230	230	230
Total Syllabic Variance	107 (46.5%)	112 (48.7%)	78 (33.9%)	43%
Syllables With Variance in Note Forms	98 (42.6%)	103 (44.8%)	78 (33.9%)	40.4%
Syllables With Pitch Variance	59 (25.7%)	48 (20.9%)	29 (12.6%)	19.7%
Syllables With Both Pitch and Note Form Variance	52 (22.6%)	40 (17.4%)	26 (11.3%)	17.1%
Syllables With Textual Variance	1 (0.4%)	N/A	N/A	0.4%

Table 49: Total amount of variation between the two sources of *Hodierne lux diei* and its contrafactum, *Spe mercedis et corone*.

Hodierne lux diei was probably written in the first half of the twelfth century, and is one of the earliest 'completely regular sequences'.[227] The Trinity manuscript is dated around the end of the twelfth century. The examination of *Hodierne* includes the Dublin Troper concordance, as well as *Spe mercedis et corone*, a contrafactum also contained in the Dublin Troper. A concordance with *Spe mercedis et corone* is also found in the original *MB* 95 group, in *F-EV* 17. Comparative data on that source will be included below, in section 3.2.iii.[228] The textual variance between the two versions of *Hodierne* is incredibly small (less than half a percent). The notational variance is 42.6%, and the pitch variance is much lower, only 25.7%.

The average variance between the Trinity version of *Hodierne* and the Dublin Troper *Spe mercedis* is near that of the comparison between the Trinity and Dublin Troper versions of *Hodierne*: total syllabic variance between Trinity and Add. 710 *Hodierne* is 46.5%, while total syllabic variance between Trinity and Add. 710 *Spe mercedis* is 48.7%. Even without seeing the notated version of *Spe mercedis*, it would be easy to infer from this data that the versions of *Hodierne* and *Spe mercedis* in Add. 710 are more similar to one another than to the Trinity source. This is true in a sense; the total amounts of variation (notational and pitch) between the two versions in the Dublin Troper consistently show lower amounts of variation per syllable than either of the comparisons with the Trinity source. However, while the pitch variance is quite low (only 12.6%), the notational variance and the total syllabic variance remain higher than 30%.

The opening of each of the three versions shows both notational variance as well as variation in pitch. These three opening stanzas are shown in Figure 134.

---

[227] Hiley, *Western Plainchant*, 190. Hiley offers more detail on the concept of 'regular' sequences, tying this concept into poetic structure: he believes that regularity in sequence form is due to the identical length and metrical patterns of each verse, as it is common for rhyming sequences to have changes of metre (a feature which is seen in many of the comparative examples with the Dublin Troper).

[228] The data from the comparison between the versions of *Hodierne* and *Spe mercedis* from the Dublin Troper will be included again in this section to facilitate cross-comparison of the two song families.
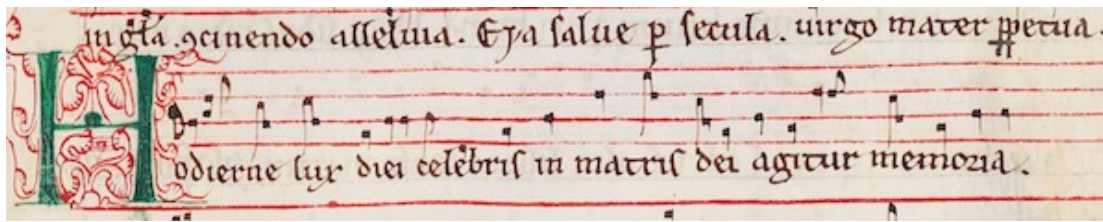
Figure 134: Stanza 1a of *Hodierne lux diei* from *GB-Otc* 34 (top) and *GB-Cu* Add. 710 (middle), and stanza 1a of *Spe mercedis et corone* in *GB-Cu* Add. 710 (bottom).

As seen above, there are certain similarities between each version: the pitches used in the Dublin Troper on 'lux diei' and 'et corone' are the same, while the Trinity scribe has written the first clivis a tone lower than the pieces in *GB-Cu* Add. 710. Within the Dublin Troper sources, on the words 'memoria' and 'obediens', the scribe has used three virgae for *Hodierne* and a virga, a punctum, and another virga for *Spe mercedis.* The Trinity scribe uses the punctum rarely, though as mentioned above, the winged punctum is used alongside oblique puncta.

3.2.iii: Spe mercedis et corone

	EV 17 / Add. 710 *Spe mercedis*	*EV* 17 / Add. 710 *Hodierne*	Add. 710 *Hodierne* / Add. 710 *Spe mercedis*	Average
Total Number of Syllables	230	230	230	230
Total Syllabic Variance	105 (45.7%)	119 (51.7%)	78 (33.9%)	43.8%
Syllables With Variance in Note Forms	94 (40.9%)	110 (47.8%)	78 (33.9%)	40.9%
Syllables With Pitch Variance	46 (20%)	51 (22.2%)	29 (12.6%)	18.3%
Syllables With Both Pitch and Note Form Variance	43 (18.7%)	43 (18.7%)	26 (11.3%)	16.2%
Syllables With Textual Variance	19 (8.3%)	N/A	N/A	8.3%

Table 50: Total amount of variation between the two sources of *Spe mercedis et corone* and its contrafactum, *Hodierne lux diei*.

The music hand of *Spe mercedis et corone* in *F-EV* 17 is neat and clear. The notator uses no puncta, and uses the extended clivis to write three-note descending forms. The majority of forms in the song are made up of one or two pitches, and only three descending liquescent forms are used.[229] The Evreux witness maintains a higher variation in note forms than in pitch with both melodic concordances in the Dublin Troper. The variation in note forms is 40.9% with *Spe mercedis* and 47.8% with *Hodierne*, while the levels of pitch variance are 20% and 22.2%, respectively.

---

[229] These notational traits are in keeping with the notation for the eight songs found in *F-EV* 17: though the songs are written by multiple scribes, none of the songs feature the punctum, and the majority of three-note descending forms are written as extended clives.

There is 8.3% textual variance between the versions of *Spe mercedis et corone* in the Evreux source and the version found in the Dublin Troper. The majority of the textual variance is found in the first 8-syllable phrase of each verse's 8-8-7 syllabic structure. Fourteen of the 19 textual variants occur within this first phrase. These are not merely spelling variants, but scribes using different words, such as 'militaris' and 'malignaris' (Add. 710 and *F-EV* 17, stanza 2a). However, the majority of syllabic textual difference is due to differences in word order, such as 'infirmorum salus' and 'salus infirmorum' (Add.710 and *F-EV* 17, stanza 3b) and 'muti, surdi' and 'surdi, muti' (Add. 710 and *F-EV* 17, stanza 4a), shown in Figure 135.
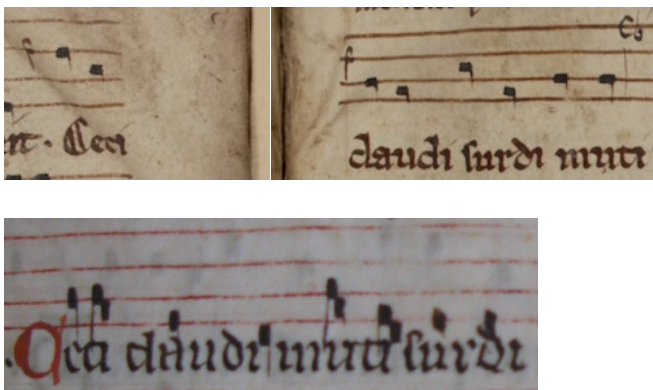
Figure 135: Word reversal in *Spe mercedis et corone*, from *F-EV* 17, f. 158r (top) and GB-Cu Add. 710, f. 78r (bottom).

The melodic concordance *Hodierne lux diei* (also found in the Dublin Troper) and its relationship to the Dublin Troper witness of *Spe mercedis* were discussed in the previous section of this chapter (3.2.ii), along with the version of *Hodierne* found in *MB* 95, in *GB-Otc* 34. The Dublin Troper *Hodierne* was included in the current section as well, in order to further explore the network of relationships which exists around this melody and its various texts.

It is also interesting to note that the average amounts of variance remain the same for both comparisons. Table 51 shows the averages for the *Hodierne* examination from section 3.2.ii alongside the averages from Table 50.

Average	*Hodierne lux diei* (3.2.ii)	*Spe mercedis et corone* (3.2.iii)
Total Syllables	230	230
Total Syllabic Variance	43%	43.8%
Note Form Variance	40.4%	40.9%
Pitch Variance	19.7%	18.3%
Both Pitch & Note Form Variance	17.1%	16.2%
Textual Variance	0.4%	8.3%

Table 51: Comparison of average variance between *Hodierne lux diei* and *Spe mercedis et corone*.

As shown in the table, the average amounts of variation between the melodic concordances in the Dublin Troper and the internal melodic concordances from *MB* 95 remain within one percent of one another for every category in the comparison chart, with the exception of textual variance. The Evreux manuscript is the only source examined in these two sections that displays that level of textual variation (8.3%) from the other sources of *Spe mercedis*.

This examination is unique in that it allows for a comparison of a single melody and the levels of variance that arise between sources of contrafacta which transmit the tune, as well as levels of variance between each contrafactum's corresponding concordances. In a sense, this particular comparison allows for a unique approach to the relationship between text and music. One might expect the use of different texts to result in different levels of variance, but as shown in previous sections of this chapter, textual variance does not always correspond with notational or pitch-related variance (see, for example, the widely-transmitted sequence texts such as *Veni sancte spiritus* which still have quite high amounts of syllabic and notational variance). In the case of *Spe mercedis* and *Hodierne*, it is evident from Table

51 that the witnesses of *Spe mercedis* have much more textual variance than the versions of *Hodierne*, but the consistency in all other forms of variation is quite striking.

3.2.iv: Letabundus exultet fidelis chorus

	Otc 34 / Add. 710 (1)	*Otc* 34 / Add. 710 (2)	Add. 710 (1) / Add. 710 (2)	*Otc* 34 / *Letabundus decantet*	Average
Total Number of Syllables	232	232	232	252* (extra verse)	232
Total Syllabic Variance	93 (40%)	73 (31.5%)	85 (36.6%)	74 (31.9%)	35%
Syllables With Variance in Note Forms	76 (32.8%)	65 (28%)	75 (32.3%)	65 (28%)	30.3%
Syllables With Pitch Variance	46 (19.8%)	37 (15.9%)	24 (10.3%)	41 (17.7%)	15.9%
Syllables With Both Pitch and Note Form Variance	38 (16.4%)	32 (13.8%)	21 (9.1%)	33 (14.2%)	13.4%
Syllables With Textual Variance	4 (1.7%)	8 (3.4%)	8 (3.4%)	N/A	2.8%

Table 52: Total amount of variation between three sources of *Letabundus exultet fidelis chorus*.

Letabundus exultet fidelis chorus is another sequence melody that has a tripartite comparison in this study, with an additional contrafactum. One version of *Letabundus exultet* is again found in *GB-Otc* 34, and the other two are from *GB-Cu* Add. 710. Unlike *Hodierne lux diei*, the two versions of *Letabundus exultet* found in the Dublin Troper are concordances, rather than contrafacta. The versions in the Dublin Troper are written in two different hands, once on folios 42v and 43r, and the second time on folios 55r-55v. Further to the two versions of

Letabundus exultet, there is a contrafactum in the Dublin Troper with 'Letabundus' as its first word, though the overall text is not the same: *Letabundus decantet* is a sequence in honour of St Patrick, but uses the same melody as *Letabundus exultet*, so it has been included in a separate column in Table 52 for notational comparison. As shown above, *Letabundus decantet* has almost exactly the same amount of variance from the Trinity version as the second *Letabundus exultet* in the Dublin Troper. This is similar to the case of *Spe mercedis* and *Hodierne*, discussed in the previous section. The similarities in the amounts of variance specifically when dealing with concordances and contrafacta in the Dublin Troper raise the question of whether the notation in a manuscript which is specifically dedicated to musical content might have a more standard process of transmission on a syllabic level, even if a pair of contrafacta are not notated in an identical fashion.[230] Other than the textual differentiation, which will not be examined here, the only major difference between the second *Letabundus exultet* and *Letabundus decantet* is that the latter has an extra verse at the end of the song.

The opening stanza of the two versions of *Letabundus exultet* from the Dublin Troper can be seen in Figure 136, below the version from *GB-Otc* 34.

---

[230] The relationship between notation, variance, and types of sources will be discussed further in the conclusion to this chapter.
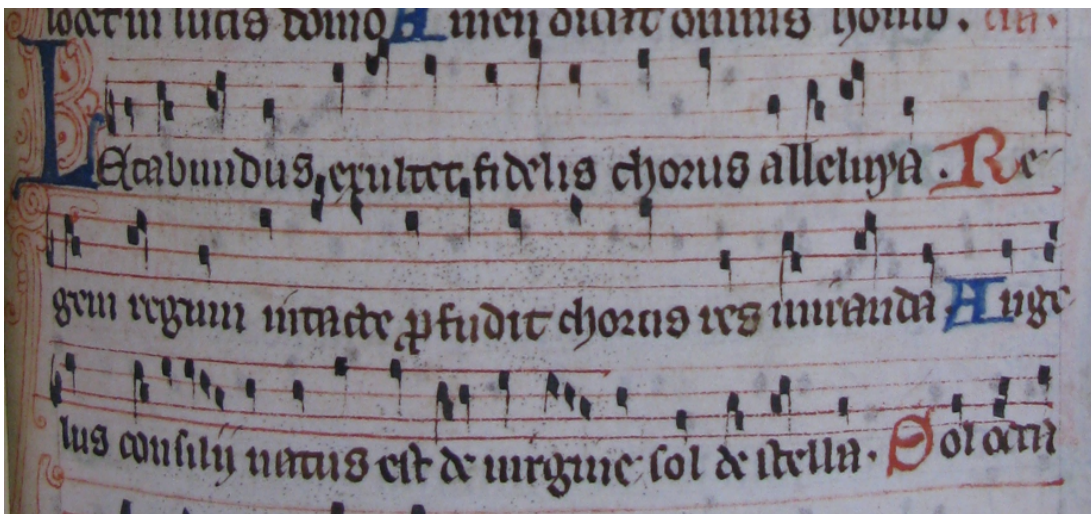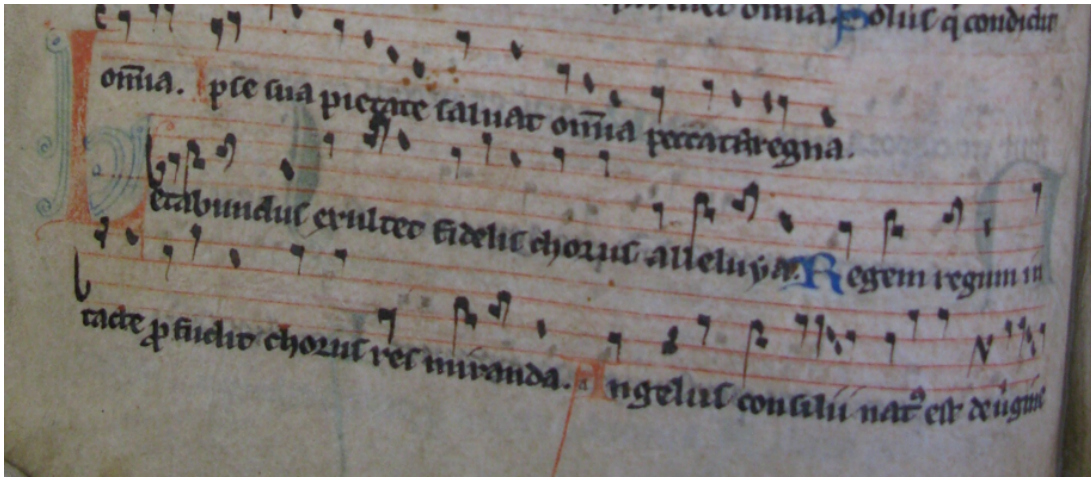
Figure 136: Opening stanzas of *Letabundus exultet fidelis chorus*, from *GB-Otc* 34, f.154v (top), and the two versions from *GB-Cu* Add. 710, f.42v (middle) and f.55r (bottom).

The relationship with the least amount of overall syllabic variance is between the second

Dublin Troper *Letabundus* and the version from Trinity College, with only 31.5% variation

overall. The overall syllabic variance between the Trinity version and the first Dublin Troper

Letabundus is 40%, and there is 36.6% overall syllabic variance between the two versions of

Letabundus from the Dublin Troper. The notation of the first *Letabundus* is very different from the other contents of the Dublin Troper examined in this thesis. This is because there are definite changes in notational style at different points throughout the manuscript, the first of which begins on folio 44: after the first *Letabundus,* but before the second. Among other specific differences in writing style, this first major notational change coincides with the way the three-note descending form is written: between folios 32 and 43 the climacus form is used, but after the notational change at folio 44, the English conjunctura is used. The one exception to this stylistic division can be seen in Figure 136: in the second *Letabundus*, at 'Angelus consiLIi', the scribe writes a climacus, then switches back to English conjunctura at 'virGIne', and continues to use the English conjunctura for the rest of the piece.

The music hand of the first *Letabundus* in the Dublin Troper is less square than the second, and also smaller, possibly to accompany the smaller text hand. There is less textual variance between the first Dublin Troper *Letabundus* and the version in *GB-Otc* 34: only 1.7%, compared to 3.4% textual variance between the second *Letabundus* and the Trinity source, and 3.4% variance again when comparing the text of the two Dublin Troper versions of *Letabundus*. This low amount of textual variance is in keeping with the variance found in the text of the other concordances between the Dublin Troper and *GB-Otc* 34: of the four songs examined from the Trinity manuscript, the range of textual variance is between 0.4% and 3.4% overall.

3.2.v: Scribere proposui

		%
Total Number of Syllables	56* (266 text)	N/A
Total Syllabic Variance	32	57.1
Syllables With Variance in Note Forms	25	44.6
Syllables With Pitch Variance	27	48.2
Syllables With Both Pitch and Note Form Variance	21	37.5
Syllables With Textual Variance	111	41.7

Table 53: Total amount of variation between *F-Pn* fr. 25408 and Add. 710 sources of *Scribere proposui* (verse 1 and refrain only).

Like *Omnis caro peccaverat*, discussed in section 3.1.v, *Scribere proposui* is not a sequence melody, but rather a Latin song. In the version found in *F-Pn* fr. 25408 (shown below, in Figure 137) only one verse is notated, but, unlike *Omnis caro*, the subsequent verses are written in a block beneath the music staves, rather than underlaid in alignment with the notated verse. Due to this layout, the data on pitch and note form variance in Table 53 is compiled from the notation of the first verse (42 syllables) and refrain (14 syllables). The data for textual variance will be based on the entire 266 syllables of text present in both sources (hence that number's inclusion in brackets within the table above). However, the 266 syllables do not include the extra verse at the end of the version in the Dublin Troper (shown below, in Figure 138). The textual variance between the sources is quite high, mostly due to a difference in verse order: the third and fourth verses of fr. 25408 are reversed in the Dublin Troper version, which can be seen in the figures below. The melody remains intact in both versions, even with the high amount of variance (between 30% and 50% for all of the categories).

Figure 137: *Scribere proposui*, from *F-Pn* fr. 25408, f.120r.

Figure 138: *Scribere proposui*, from *GB-Cu* Add. 710, f.127v.

As seen in the figures above, the notation of fr. 25408 has frequent hairline ascenders, and features both virgae and puncta, as well as liquescence and the English conjunctura. The notation of *Scribere* in the Dublin Troper is uncharacteristically messy, with ink smudges and frequent erasures, and the notation has been written in a different music-hand from the preceding song on the folio, *In ecclesiis celi gloria*, whose notation resembles the majority of the material in the proser. This distinction is also evident in the lack of puncta in the Dublin Troper version of *Scribere*, contrary to *In ecclesiis*, which features puncta alongside the virgae.[231]

Even within the Dublin Troper witness of *Scribere* there seems to be some notational discrepancy, especially in the shape of the virgae and in the formation of the cephalicus. The virgae in the first stave have much more squared heads, while the virgae in the second and third staves have downward-sloping heads, as if there was not quite as much distinction made between the two strokes (one to the right for the note-head, and one downward for the stem) that normally make up the form. The cephalicus forms in the second and third staves look substantially different from the liquescent form in the first stave, which is written in the 'shepherd's crook style': in the second and third staves, the right-hand descenders are longer than the left-hand 'stem', and the forms are much flatter on top than the first cephalicus. There are also three epiphonus forms in the second and third staves, but not the first. The presence of the ascending liquescence is another reason to look more closely at the notation of *Scribere*, because epiphonus forms are extremely uncommon throughout the rest of the manuscript. The notation in the second and third staves of *Scribere* almost looks as if it was written in a different hand than the notation in the first stave, due to the specific formal

---

[231] Though *In ecclesiis celi gloria* has a concordance with the version in *GB-Ob* Digby 2 (no. 100 in *MB* 95), that song was not included in this section, as *Scribere* offers more notation to be examined, as well as unique notational elements. The songs are similarly represented in terms of layout, with only one notated verse and subsequent verses underlaid. For further information on *In ecclesiis*, see *MB* 95, 216.

differences listed above; there is also an overall curvature to the hand that is not present in the first stave. It is of course possible that the difference in overall hand could have been caused by any number of reasons (including a dull pen-nib or even a scribe becoming tired), but the fact that this stylistic change coincides with a differentiation in the way that specific forms were written seems slightly more than coincidental.

The comparison between songs with a single-notated verse and songs for which the notation of all verses is written out in full raises another issue in terms of collecting data on variation, regarding the relationship between available notation for comparison and the rates of variability. This issue will be discussed further in the conclusion to this chapter, specifically in regard to song length, text, and overall data on variation.

3.3: External Concordances in Sources of Trouvère Song

Of the 111 songs examined in this thesis, there are 13 which have Anglo-Norman French texts (three of these are contrafacta). However, there are only two songs which have multiple concordances and contrafacta in the existing sources of trouvère song: *Bien deust chanter* and *S'onques nuls hoem*. These songs will be examined in a similar fashion to the comparisons offered in sections 3.1 and 3.2, but the nature of the collected examples requires that the method be slightly adapted. Unlike the previous sections, which examined multiple songs found in two or three sources, this section will feature only two songs, but with larger numbers of witnesses. Therefore, syllabic comparisons between individual songs would be less helpful than in previous sections, due to the higher volume of sources examined. Data on variation will be provided, but explained; for example, the higher number of sources often results in a large amount of variation on the syllabic level. In these cases, it is essential to offer further information to ensure that the data is not falsely indicating a degree of variation that does not exist. Similarly, most of the comparative examples in sections 3.1 and 3.2 were written at the same pitch-level and with the same clef. That is not always the case with the trouvère sources, which have a range of starting pitches, and which are written using a variety of clefs. Therefore, variation in pitch will be based around relative intervallic motion; a leap of a fourth will be a leap of a fourth, and so on, rather than being based on written pitch (though the written pitch differentiation will be discussed).

Scholarly comparisons of trouvère song exist, though most studies present these comparisons in modern musical notation which has been edited. Hans Tischler's complete comparative edition of trouvère lyrics, while extensive, presents the various melodies aligned and grouped together according to melodic structure.[232] However, the melodies are presented in modern, rhythmic notation, a practice which has been called 'controversial' in regard to its

---

[232] Hans Tischler, ed., *Trouvère Lyrics With Melodies: Complete Comparative Edition*.

approach to mensural notation.[233] Subsequent studies have offered updated melodic editions,

as well as compelling arguments for the availability of such editions, which this thesis does

not dispute, which have in turn spurred conversations about trouvère melody, and more

specifically, the large amount of variation between sources of trouvère song, and how an

editor might approach collecting these varying witnesses in order to produce a single edition

of a song.[234] While the compiling of sources to create an edition is not the aim of this thesis,

the discussion of variance is of high importance, especially in the regard to its identification,

and the classification of its significance. The relationships between individual trouvère

sources have been discussed at length, especially in regard to the amount of variance between

the versions transmitted within each source, and this thesis will not attempt to reconfigure

any existing interpretation.[235] Instead, I will focus on the notation used in the sources, and

explore how the notation may be related to these concepts of variance.

In this section, I will present the two songs which have witnesses in trouvère sources.

Within each subsection I will examine the notation used to write the song being examined,

with a specific focus on notational relationships between the sources. I will also discuss the

---

[233] Daniel E. O'Sullivan, *Marian Devotion in Thirteenth-Century French Lyric* (Toronto, Buffalo, London: University of Toronto Press, 2005), 117.

[234] Daniel E. O'Sullivan, 'Editing Melodic Variance in Trouvère Song', in *Textual Cultures* 3, no. 2 (2008): 54-70

[235] The methodology of constructing stemmata has long been applied to scholarship on trouvère songs and sources, and often is the basis for studies of transmission of trouvère song. Studies using this method (either directly or as a basis for comparison between sources and/or melodic variants) include Elizabeth Aubrey, *The Music of the Troubadours* (Bloomington and Indianapolis; Indiana University Press, 1996), esp. her discussions of transmission and concordant readings in Chapter 2; Marcia J. Epstein, *Prions en Chantant: Devotional Songs of the Trouvères* (Toronto, Buffalo NY, and London: University of Toronto Press, 1997), esp. Chapter One; Theodore Karp, 'The Trouvère Manuscript Tradition', in *Twenty-Fifth Anniversary Festschrift of Queens College, New York*, ed. Albert Mell (New York, NY: Queens College Press, 1964), 25-52; Mary O'Neill, *Courtly Love Songs of Medieval France: Transmission and Style in the Trouvère Repertoire* (Oxford: Oxford University Press, 2006); Judith A. Peraino, *Giving Voice to Love: Song and Self-Expression from the Troubadours to Guillaume de Machaut* (Oxford: Oxford University Press, 2011), esp. Chapter Three; Eduard Schwan, in *Die altfranzösischen Liederhandschriften: Ihr Verhaltniss, ihre Enstchung und ihre Bestimmung* (Berlin: Wiedmannsche Buchhandlung, 1886); and Hendrik Van der Werf, *The Chansons of the Troubadours and the Trouvères: A Study of the Melodies and their Relation to the Poems* (Utrecht: A. Oosthoek, 1972).

amounts of variation that exist between the witnesses, and compare the ways in which the notation in the Continental sources relates to the notation used to write insular song.

3.3.i: Bien deust chanter/Bien doit chanter qui fine amours adrece

Bien deust chanter is one of 11 songs from *MB* 95 which are found in *GB-Lbl* Arundel 248.[236] The version of *Bien deust chanter* in the Arundel source is a contrafactum of *Bien doit chanter qui fine amours adrece*, the decasyllabic text of which is widely transmitted among trouvère sources, with multiple melodies.[237] Seven of the trouvère manuscripts attribute this song to Blondel de Nesle, a French trouvère who is thought to have lived in the second half of the twelfth century.[238] No attribution is offered in the Arundel source. In this study I will focus on the ten trouvère sources which transmit roughly the same melody as the Arundel source. The list of sources (in alphabetical order, by trouvère manuscript siglum) can be seen below, in Table 54, including clefs used and any attribution from the source.

---

[236] *Bien deust chanter/Bien doit chanter* is listed as RS482, L24-5, and *MB* 95 no. 76. Robert W. Linker, *A Bibliography of Old French Lyrics* (University, MS: Romance Monographs, 1979); Hans G. Spanke, *G. Raynauds Bibliographie des altfranzösischen Liedes: Neu bearbeitet und ergänzt von Hans Spanke* (Leiden: E.J. Brill, 1955).

[237] These melodies can be seen in Tischler, vol. iv, no. 277 (in edited form), and in Donna Mayer-Martin (with Dorothy Keyser), *Thematic Catalogue of Troubadour and Trouvère Melodies*, Thematic Catalogues in Music No. 18 (Hillsdale, NY: Pendragon Press, 2011), nos. 518, 1577, 1848-50, 1852, 1918-19, 1929-30, 2498.

[238] Attribution to Blondel is found in manuscripts *a, K, M, N, P, T*, and *X*. For further information on the trouvère, see Theodore Karp, 'Blondel de Nesle', *GMO*, Oxford University Press, http://www.oxfordmusiconline.com/subscriber/grove/music/03303, accessed 24 March 2016.

Manuscript	Folio(s)	Clef(s)	Attribution
GB-Lbl Arundel 248	f.155r	C, B flat	None
F-Pa 5198; MS *K*	pp.112-13	C, B flat	Blondiax de Neele
F-Pn fr. 844; MS *M*	ff.139r-v	C, B flat*	Blōd.
F-Pn fr. 845; MS *N*	ff.41v-42r	C, B flat	Blondiax
F-Pn fr. 847; MS *P*	ff.40r-41r	C, B flat	Blondiau de Neele
F-Pn fr. 1591; MS *R*	ff.125v-126r	C	None
F-Pn fr. 12615; MS *T*	ff.88v-89r	F, C	Blondeaus
F-Pn fr. 20050; MS *U*	ff.11v-12v	C, B flat, F	None
F-Pn fr. 24406; MS *V* (1)	ff.106r-v	C, B flat	None
MS *V* (2)	ff.115r-v	C, B flat	None
F-Pn n.a. fr. 1050; MS *X*	ff.79r-80v	C, B flat	Blondel de Nelle
I-Rvat Reg. Lat. 1490; MS *a*	ff.89r-v	C	Blondiaus de Neele

Table 54: Melodic concordances of *Bien deust chanter*/*Bien doit chanter* in existing trouvère manuscripts.[239]

As shown above, most of the sources use the C and B flat clefs; MS *M* has an asterisk by the indication of 'B flat' in the Table, because, while that source features a B flat, it is written as an accidental, rather than as a clef at the beginning of a stave line.

The notation contained in Arundel 248 has been discussed in Chapter Two, in regard to specific forms and their use within the manuscript. The full notation of *Bien deust chanter* can be seen below, in Figure 139.

---

[239] The witness in MS *U* is written using Messine neumes, and will not be used for notational comparison. Though the notational system is very similar to the square notation seen in the other trouvère manuscripts, there are certain elements (such as the distinction between virgae and puncta, or identification of liquescence) that are impossible to determine due to the imprecise nature of the note forms. Pertinent information will be included in footnotes.
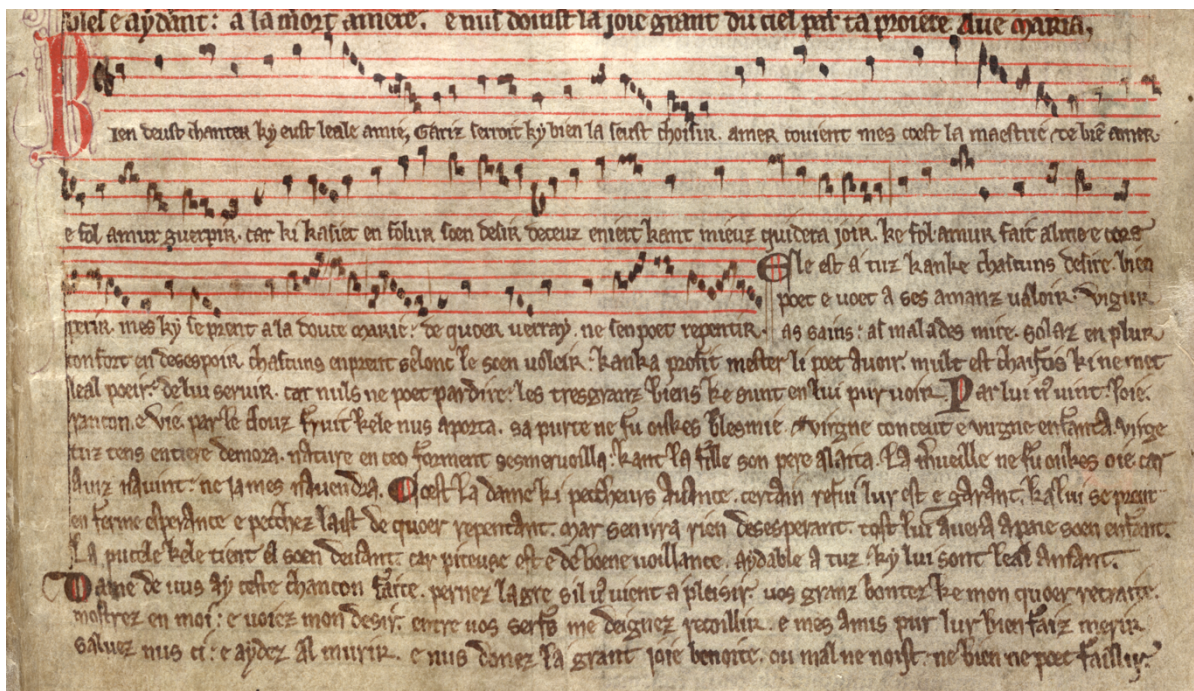
Figure 139: *Bien deust chanter*, from *GB-Lbl* Arundel 248, f.155r.

The song is written in a casual hand, possibly with a dull pen nib, given the relative

roundness of the note heads. Both the virga and punctum are present, though (like most of the

songs in *MB* 95) the punctum is rarely used. All adaptations of the three-note descending

form are present: the extended clivis (leale amiE), the English conjunctura (coest la

MAEStrie), and the climacus (car ki KAsiet). Several less commonly used forms are also

found in this version of the song. The wave note is present both as the lower note of a pes

(LA seust choisir) and as the upper note of the clivis (deceuz enIERT), as is the combined

single note+cephalicus (bien deust CHANter), and the epiphonus (CAR ki kasiet). *Bien deust*

chanter is presented in a single-column layout, unlike most of the trouvère sources, which are

written in two columns. The only exception is manuscript *T*, which is written in single-

column format.[240]

The notation found in the trouvère sources is overwhelmingly square, though the

general appearance of the notation varies among the sources. The virga is the preferred form

---

[240] The version in manuscript *U* is also in single-column format.

244

used to write single notes, although in several of the trouvère sources, the virga stems are so thin that they have faded, leaving forms which resemble puncta in their 'lack' of stem. The notations found in manuscripts *K*, *N*, *P*, and *X* are examples of this particularly squared style, and are shown below, in Figure 140.

Figure 140: The opening of *Bien doit chanter,* from (clockwise from top left) trouvère manuscripts *K* (p.112), *P* (f.40r), *X* (f.79r), and *N* (f.41v).

As shown above, the notation used to write *Bien doit chanter* in trouvère manuscripts *K*, *P*, *N*, and *X* is quite similar, both in the general appearance of the hand, as well as the specific

245

note-forms being used. All four scribes use the virga exclusively to write the single-note form, though several of the virgae in the example above from *K* could be interpreted as puncta. This is due to the initial virgae forms being written with very thin tails (many of which have faded and are quite difficult to see), alongside some of the heads having a slight slant downward to the right. However, a comparison between these single-note forms and the puncta used to make up the climacus form in that same manuscript shows that the 'genuine' puncta are much more diagonally slanted. Of these three examples, manuscript *X* (bottom right image) is the only example in which the notator does not use any combinations of single-note forms followed immediately by another form. In the case of the first three manuscripts (*K*, *P*, and *N*), each scribe uses the combined virga+clivis at least once in the examples shown above. Out of the 11 manuscripts examined in this section, the only sources whose notators do not use this type of notational doubling (combining a single-note form and another form over a single syllable) are *R*, *V* (both versions), *X*, and *a*. The doubling found in the other manuscripts (*M* and *T*) combines similar forms: virgae alongside the clivis or cephalicus form. Examples of doubling from these versions can be seen below, in Figure 141).
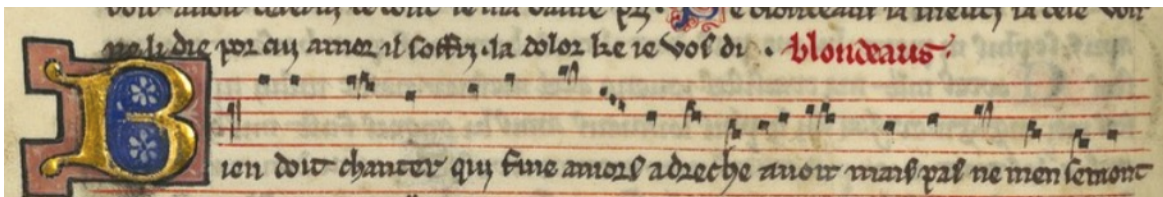
Figure 141: Scribal use of doubled note forms in *Bien doit chanter*, from (top to bottom) trouvère manuscripts *M* (f.139r) and *T* (f.88v).

Like the examples from Arundel 248, *K*, *N*, and *P*, the scribes of *M* and *T* combine single-note forms with clives and descending liquescent forms on a regular basis.[241] It is particularly interesting that both scribes use doubling at CHANter and Amours, though the scribe of *T* uses a virga+clivis where the scribe of *M* uses a virga+cephalicus (at CHANter).

All of the versions of *Bien doit chanter*, including Arundel 248's *Bien deust chanter*, use the cephalicus form regularly.[242] The epiphonus, however, is found in less than half of the versions examined in this section (including Arundel 248), and is used sparingly in those sources.[243] Figure 142 shows examples of epiphonus use in the trouvère sources.

---

[241] The scribe of manuscript *U* uses doubling as well, but there are no virgae or puncta to distinguish between, as there is only one type of single-note form present, as far as I can tell, and it is impossible to tell whether it would be analogous to the virga or punctum form.
[242] The only exception would be manuscript *U*, for the reasons noted above.
[243] The same low rate of use of the epiphonus form was seen in the insular sources, discussed in section 2.2.ix.

Figure 142: Epiphonus use in trouvère sources (clockwise from top left) *M* (f.139v), *V* (1, f.106v), *a*, and *V* (2, f.115v).

Of the five sources containing epiphonus forms, manuscript *M* has five, which is by far the most frequent use of the form. The scribes of Arundel 248 and *V*(2) use the form twice, while the scribes of *V*(1) and *a* only use a single epiphonus. In all five sources, however, at least one epiphonus is found either in the song's final ten-syllable phrase (Arundel, *M*, *a*), or in the penultimate ten-syllable phrase (*V* 1 and 2).

Manuscript *R* features a diagonal descending form which resembles the ligatures used in mensural notation, shown below in Figure 143.[244]

---

[244] A similar ligature-type form was discussed in section 3.1.iv, in regard to its presence in *Omnis caro peccaverat*, from *GB-Cgc* 240/126 (see Figure 126).
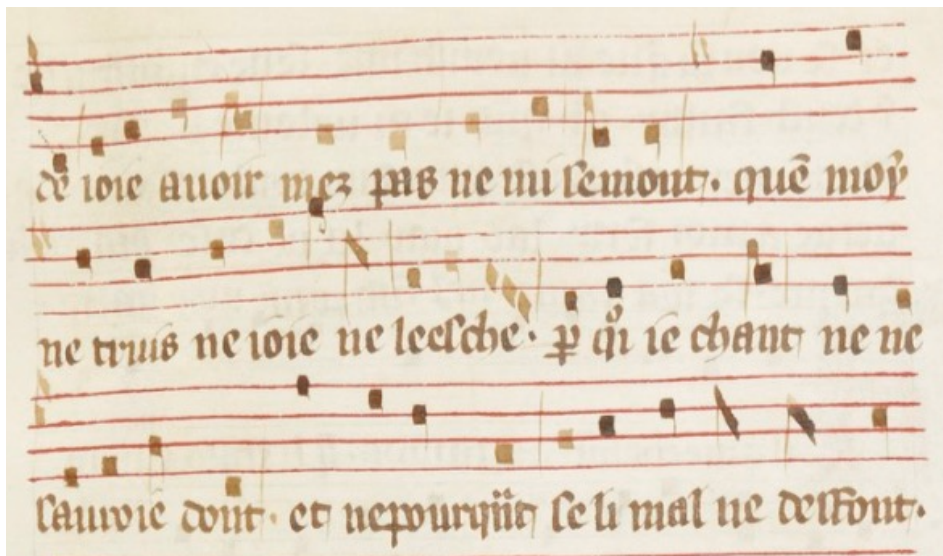
Figure 143: Ligature-esque forms in trouvère manuscript *R*, f.126r.

This form is not found in any of the other songs examined in this section, and from an examination of manuscript *R* alone, it is unclear whether these forms are meant to resemble two pitches a third apart, or three descending pitches.[245] The scribe also uses a clivis to write a descending third at SEmont, and uses three puncta to write the three-note descending form at leeSCHE, making it unclear whether this ligature is meant to be used interchangeably with either the descending-third clivis or the three-note descending form. A comparison with the notation being used in the other sources at this point at the song indicates that it is likely that these ligatures are meant to represent three notes descending, because on the syllables 'ne' and 'des' (and the corresponding syllables of text in Arundel 248, 'soen' and 'de') all of the ten other sources feature either two or three adjacent descending notes on 'des'. All but the two versions found in manuscript *V* feature two or three adjacent descending notes on 'ne'. None of the sources feature a descending leap of a third.

As noted in the introduction to this section, syllabic comparisons become more difficult as the number of witnesses increases. For the syllabic comparisons between *Bien deust chanter* and the contrafacta, there will be several guidelines that are specific to the

---

[245] Along with trouvère manuscript *R*, this form can be seen in *GB-Cgc* 240/126 and MS *A*.

sources examined. Spelling differences will not count toward textual variation; if spelling were to count toward the variation, almost every single syllable would feature textual variance, thereby causing the data set to imply a level of variance that does not exist. Therefore, only content-based textual differentiation will be counted. Similarly, because of its status as a contrafactum, the text of Arundel 248 will not count toward the textual variance. The most substantial difference between the approach to the trouvère concordances and the insular concordances will be in the analysis of variance in pitch. Again, due to the number of sources examined, the variation in pitch will not be examined at the syllabic level overall. Instead, I will present and discuss trends in pitch variation between these sources, including the ways that certain sources are related on the syllabic level, and how those relationships in variance may affect how the sources are grouped together when discussing this song.

Table 55 shows the notational and textual variance with the parameters listed above applied to the process of data collection.

		%
Total Number of Syllables	92	N/A
Syllables With Variance in Note Forms	55	59.8
Syllables With Variance in Text	17	18.4
Syllables With Variance in Note Forms and Text	10	10.8

Table 55: Notational and textual variation between sources of *Bien deust chanter* and *Bien doit chanter*.

As shown above, when spelling is removed from the equation, the textual variance among trouvère sources of *Bien doit chanter* is actually relatively low (less than 20%). The notational variance is high, almost 60%, which falls toward the higher end of the scale in

250

comparison with the concordances discussed in sections 3.1 and 3.2.[246] Most of the variation

between these sources happens at the end of the ten-syllable phrases, though there is some

variation at the beginning of phrases. In the nine ten-syllable phrases that are notated across

all of the sources examined in this section, the lowest amount of variance is seen in the

middle of the phrases, particularly on the fifth and sixth syllables. This may be a result of the

melodic makeup of the song more than anything else, but lack of variance both in pitch and in

notation can, at times, be an indicator of a song's structural characteristics, in this case

indicating that the melody contains structural points in the middle of phrases that are less

suitable for individual interpretation or ornamentation by a performer or a scribe.

3.3.ii: S'onques nuls hoem

S'onques nuls hoem is found in eleven manuscripts, including *GB-Lbl* Harley 3775.[247] It is

the only musical item found in the Harley manuscript, and is dated to the second half of the

thirteenth century.[248] The spelling of 'S'onques nuls hoem' varies between the sources, so for

the purposes of clarity the spelling from Harley 3775 will be used to refer generally to the

song throughout this thesis, while references to specific versions will use individual spellings.

The other ten manuscripts containing concordances for the Harley source are trouvère

manuscripts *a*, *A*, *D*, *K*, *O*, *P*, *R*, *T*, *V*, and *X*. Tischler includes sources in *M* and *N* in his list,

but notes that these have been lost.[249] Of these eleven sources, *S'onques nuls hoem* is

preserved with a different melody in *R*, so that source will not be used in this comparison.[250]

---

[246] A comparison of all the songs examined in this chapter will be provided in its conclusion, along with discussion and analysis.

[247] *S'onques nuls hoem* is listed as RS1126, L117-7, and *MB* 95, no. 89.

[248] *MB* 95, 209. Stevens has suggested that the decasyllabic poem likely refers to the Fourth Crusade, dating 1202-1204. Stevens, 'Alphabetical Check-List of Anglo-Norman Songs c.1150-c.1350', 17.

[249] See Tischler, *Trouvère Lyrics With Melodies*, vol. vii, no. 648.

[250] For a transcription of the melody in *R* alongside an editorial transcription of the basic melody contained in the rest of the sources, see Joseph Bédier and Pierre Aubry, *Les Chansons de Croisade* (Paris: Librairie Ancienne, 1909), 124-5.

The version in *D* is unavailable in digital or facsimile format, so its presence will be limited, as an examination of the notation was not possible. Available transcriptions suggest that the melody of *D* is similar to that of *A*. While the melody preserved in *V* is less 'different' than the melody in *R*, it is my opinion that the melody in *V* is still too divergent to be considered a musical concordance of the version found in Harley 3775, so it will be excluded from this discussion as well.

For the most part, my examination of the notation and variance between these sources will follow a similar method as the one used in section 3.3.i in regard to the evaluation of what constitutes a variation between sources. However, there will be a slight differentiation in regard to the comparisons of variance, because (unlike *Bien doit chanter*) the eight sources of *S'onques nuls hoem* can be divided into two groups: those with a final on C, and those with a final on G.[251] The finals are shown in Table 56.

Manuscript	Folio(s)	Clef(s)	Attribution	Final
GB-Lbl Harley 3775	ff.14r-v	C, B flat	None	C
F-AS 657; MS *A*	ff.158v-159r	F, B flat*	None	C
F-Pa 5198; MS *K*	pp.106-7	C	Li Chastelains de Couci	G
F-Pn fr. 846; MS *O*	ff.131r-v	C, F ♮	Chastelains de Coucy*	G
F-Pn fr. 847; MS *P*	ff.38v-39r	C	Li Chastelains de Cōci	G
F-Pn fr. 12615; MS *T*	f.103v	F	Me sire Hughes de Bregi	C
F-Pn n.a. fr. 1050; MS *X*	ff.75v-76v	C	Li Chastelains de Couci	G
I-Rvat Reg. Lat. 1490; MS *a*	ff.26r-v	F, B flat*	Mesire Uges de Bregi	C

Table 56: Melodic concordances of *S'onques nuls hoem* in existing trouvère manuscripts, and their finals.

---

[251] This division is based on groupings suggested by Fiona McAlpine in 'Authenticity and "Auteur": The Songs of Hugues de Berzé', *Plainsong and Medieval Music* 4, no. 1 (1995): 13-32; 28-9.

As in the previous section, asterisks are used to denote the presence of B flat which are used to mark individual instances of B flat, rather than written at the beginning of staves. The attribution in MS *O* has been marked with an asterisk as well, because a different (later) hand has written the attribution.

The notation found in Harley 3775 is much less ornamented than the notation of the Arundel source discussed in the previous section. The version of *S'onques nuls hoem* from Harley 3775 is shown below, in Figure 144.

Figure 144: *S'onques nuls hoem*, from *GB-Lbl* Harley 3775, f.14r.

Like most of the trouvère sources, the single-note forms in Harley 3775 are all virgae. The clivis and pes forms are present, the three-note descending form is written as the extended clivis, the scandicus is written as a unique 'ascending clivis' form, and compound forms are written in the M-H-M-L style of connecting square notes together. The song is laid out in a single column, as is manuscript *T*. All of the other versions from trouvère manuscripts are written in two-column format. None of the trouvère sources of *S'onques nuls hoem* examined

in this section possess the type of Messine notation that was found in manuscript *U* in the previous section of this thesis. However, the scribe of manuscript *T* uses an interesting note-form several times, shown below in Figure 145.
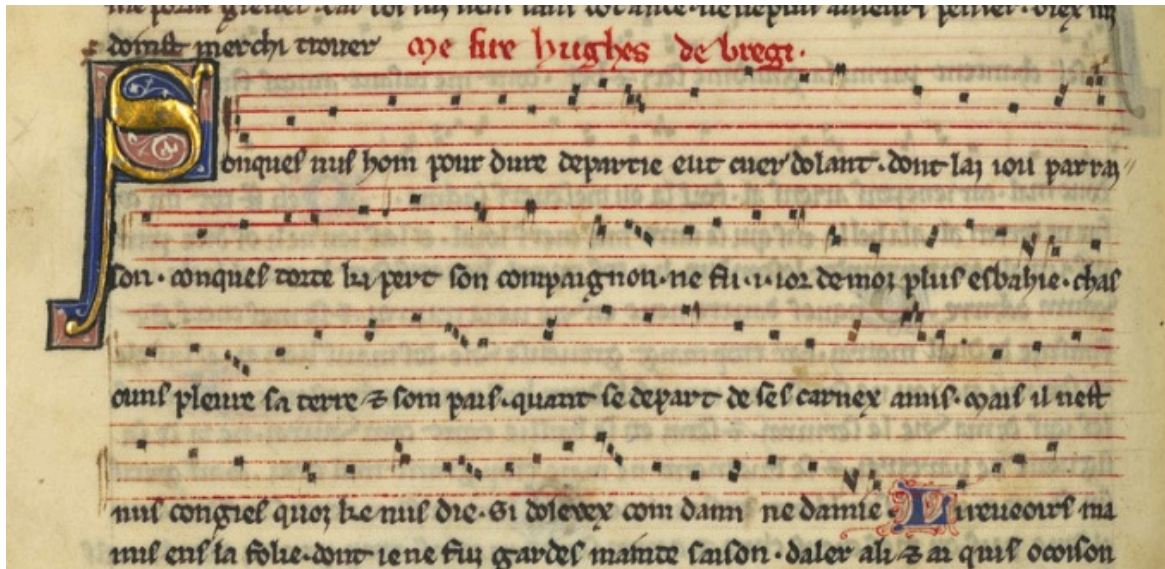
Figure 145: *S'onques nus hom*, from trouvère manuscript *T*, f.103v.

The figure in question is used two times, on doLANT and COMpaignon. It resembles a doubled cephalicus form: a left hand stem and a cephalicus-type note-head that connects to a second note-head via a deep curve in the middle, and is followed by a descender on the right-hand side. If this is a doubled figure, it may have been written in a hurry, because the scribe of *T* uses doubled figures over IOR and dePART later in the song, which are much more clearly made of a virga followed by a cephalicus. It is possible that this is a form of the wave note, though if that were the case, it would be the only instance that the wave note is used in any of the trouvère examples examined in this thesis. The form is similar to ones found in *Spei vena melle plena* and *Veine pleine de duçur*, both from *GB-Lbl* Arundel 248, shown below in Figure 146.
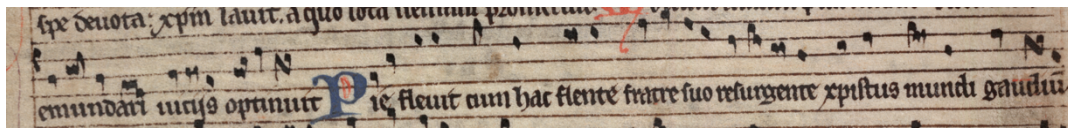
Figure 146: Doubled forms used in *Spei vena melle plena* (top, f.154v), and *Veine pleine de duçur* (bottom, f.155r), from *GB-Lbl* Arundel 248.

The examples from Arundel 248 lack the long, thin, left-hand tail present in manuscript *T*, but they are otherwise quite similar, both in their form, and in their presence among other, more easily identifiable doubled forms. As shown above, the doubled forms are sometimes separate (as in the example from *Veine pleine de duçur*, in the top voice, over the word CONfort), but they tend to run together, as they do in *Spei vena melle plena*, over the word FLENte. It is uncertain whether this double form should be two single notes, or if the second is a liquescent form for which the scribe has drawn a particularly thin tail.

The version of *S'onques nuls hoem* in *T* is similar to the version in manuscript *A*, shown below in Figure 147.
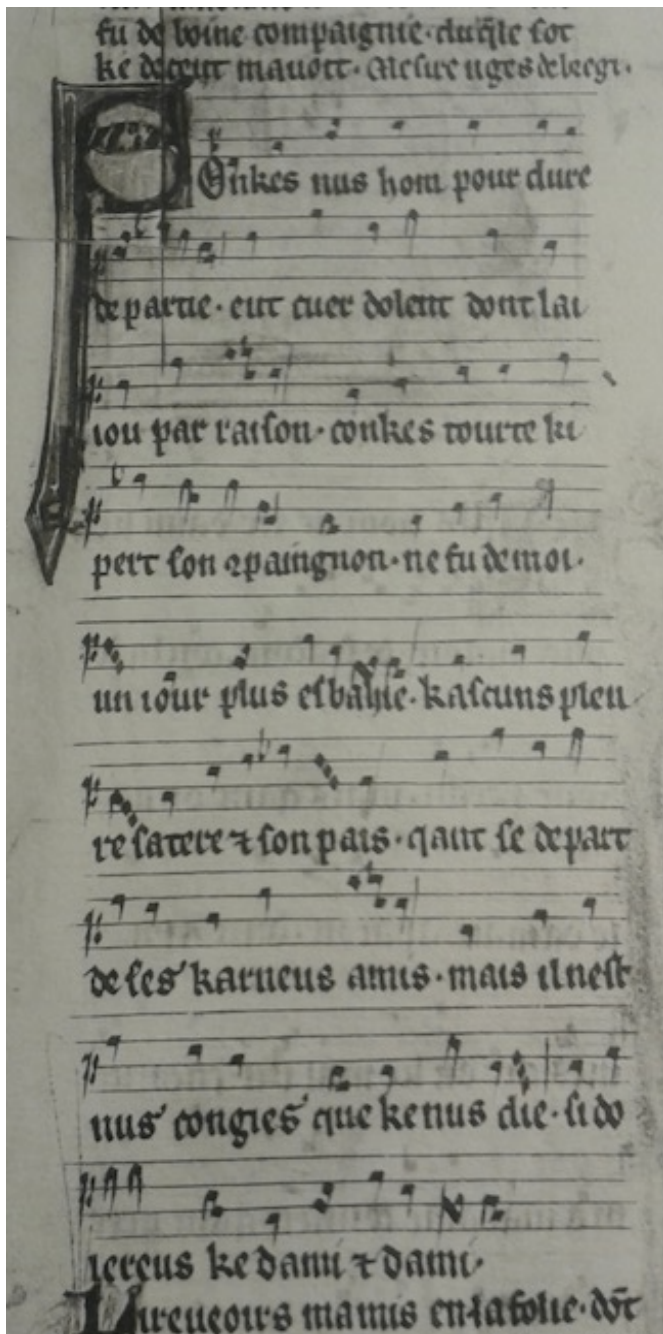
Figure 147: *S'onkes nus hom*, from trouvère manuscript *A*, f.158v.

A comparison of the two sources shows that the scribe of *A* has used a cephalicus form in both places that this 'double cephalicus' appears in *T*, leading to the possible conclusion that this is simply how this scribe has chosen to write the cephalicus form in these instances. In the case of *S'onques nuls hoem*, *T* is the only source to feature doubling; while most sources of *Bien doit chanter* featured regular single-note doubling, it only occurs twice in manuscript *T*, and is not present in any of the other versions.

As shown in Table 56, the versions found in Harley 3775 as well as manuscripts *A* (both versions), *T*, and *a* have C as their final, while the versions in manuscripts *K*, *O*, *P*, and *X* have a final on G. Because the group can be easily divided based on final, I chose to present the data on variance between the versions of *S'onques nuls hoem* based on this division by final. My hope was that an approach to variance between trouvère manuscripts might yield some insight on the relationship between variance and actual notated pitch; namely, whether a comparison based on written pitch was more or less of an indicator of variance than a comparison based around relative melodic motion (than there was between the same sources for *Bien deust chanter*).

Visually, the main difference between the concordances is their layout. Of these eight sources, two present the song in single-column format (Harley 3775 and *T*), while the rest are laid out in double columns. Besides sharing the final on G, the *KOPX* group all attribute the song to the Chastelain de Couci (*d*. 1203), as noted above. Of the group with C for a final, *T* is the only manuscript to offer attribution, not to the Chastelain, but to Hugues de Berzé (*d*. before 1220). Spelling and slight word variations aside, the concordances all preserve the decasyllabic poetic lines as well as the rhyme scheme (abbaccaa). Data on textual variance, as well as total variation among the two groups, can be seen in Tables 57 and 58.

	C Final	%
Total Number of Syllables	84 (Harley & *a* have 85)	N/A
Total Syllabic Variance	75	88.8
Syllables With Variance in Note Forms	39	46.2
Syllables With Pitch Variance	58	68.6
Syllables With Both Pitch and Note Form Variance	38	45
Syllables With Textual Variance	22*	30.8

Table 57: Total amount of variation between sources of *S'onques nuls hoem* with C final.

	G Final	%
Total Number of Syllables	84	N/A
Total Syllabic Variance	40	47.6
Syllables With Variance in Note Forms	14	16.7
Syllables With Pitch Variance	25	29.8
Syllables With Both Pitch and Note Form Variance	12	14.3
Syllables With Textual Variance	19	22.6

Table 58: Total amount of variation between sources of *S'onques nuls hoem* with G final.

As evidenced by the tables above, there is a large amount of syllabic variation within the group with C finals, with almost 90% of syllables containing some type of variance, and almost 70% variance in pitch. The manuscripts with G finals, on the other hand, showed less than 20% variance in note forms, and less than 30% variance in pitch. However, the majority of this variance was due to the inclusion of the version in Harley 3775; while there was still variation between the trouvère sources *A*, *T*, and *a*, it was much less frequent. *A* and *a* are known to be related sources, at times included with *T* and *M* by scholars wishing to group the

trouvère sources together.[252] Most of the sources with G finals are manuscripts which are traditionally associated with one another: *K*, *P*, and *X* (*N* is also typically included in this group) are known to be 'relatively homogeneous', while *O* provides much of the variance in this case (although there is a higher amount of variation between the *KPX* group for this song than there was between the sources of *Bien doit chanter*).[253]

The textual variance in the group with the C final has an asterisk because, while there were only 22 syllables with textual variance overall, there were a further 26 syllables with textual variations which were unique to the Harley manuscript. The inclusion of those 26 syllables would have raised the total to 56.8%, which, while indicative of the textual variance between the Harley version and the versions from the trouvère sources, would not have been indicative of the textual variation in the overall group.

---

[252] In this case, Schwan, *Die altfranzösischen Liederhandschriften: Ihr Verhaltniss, ihre Enstchung und ihre Bestimmung*, which is still used as the basis for most modern scholarship on stemmatic relationships.

[253] O'Neill, *Courtly Love Songs of Medieval France*, 14.

Some Conclusions

The process of comparing witnesses often produces results that are used to cement a source's place within a historical context (geographically and/or chronologically), or as a reflection on its contents. For example, comparisons are often used for the process of dating manuscripts, identifying chronological relationships between sources (both in regard to the manuscripts themselves, but also to the musical versions being compared), and identifying stemmata. This process can also be used to support or challenge the reliability of particular witnesses, sources, or scribes. While this is certainly a valuable way to apply the results of such comparisons, the comparisons in this thesis will not be used for any of the more traditional outcomes listed above. Instead, the point of comparing the various witnesses throughout this chapter was to illustrate how the comparative process can result in concrete data that can be used to support existing theories (that, until now, have been mostly speculative) and also provide new information on the types of variation between concordances, as well as the amounts of variation within those categories.

Of the 14 songs examined in this chapter (including their concordances and contrafacta), the average amount of total syllabic variation was 54%. The lowest amount of variation was 7.5%, seen in *Gaude gloriosa morborum medela*, in section 3.1.iv. That song, however, is a special case: the two witnesses are found in the same manuscript, and analysis of the two versions shows that it is highly likely that the second version is a re-structuring of the first. When examined alongside the rest of the songs from this chapter, the low amount of variance between the witnesses of *Gaude gloriosa* stands out as atypical. Table 59 shows the average percentages of variation between all 14 songs for which data on syllabic variance was collected (3.1.ii is not included, as there was no data table for that comparison), as well as the composite averages for each sub-section: internal concordances (3.1), concordances with the Dublin Troper (3.2), and concordances with trouvère sources (3.3).

	Number of (Notated) Syllables	Total Syllabic Variation %	Variance in Note Forms %	Pitch Variance %	Syllables With Both Pitch and Note Form Variance %	Textual Variance %
3.1.i	37	48.2	27.7	26.7	8	20.5
3.1.iii	210	54.3	50	25.7	22.9	1
3.1.iv	144	7.5	7.5	6.2	6.2	0.7
3.1.v	101	59.4	51.5	22.5	14.2	4
3.1.vi	205	74	30.3	31.7	20.7	53.3
3.1.vii	86	87.2	34.9	25.6	25.6	51.2
3.1 Avg	**130**	**55.1**	**33.7**	**23.1**	**16.3**	**21.8**
3.2.i	311	40.2	31.5	19	12.2	1.9
3.2.ii	230	43	40.4	19.7	17.1	0.4
3.2.iii	230	43.8	40.9	18.3	16.2	8.3
3.2.iv	232	35	30.0	15.9	13.4	2.8
3.2.v	56	57.1	44.6	48.2	37.5	41.7
3.2 Avg	**212**	**43.8**	**37.5**	**24.2**	**19.3**	**11**
3.3.i	92	N/A	59.8	N/A	N/A	18.4
3.3.ii (C)	84	88.8	46.2	68.6	45	30.8
3.3.ii (G)	84	47.6	16.7	29.8	14.3	2.6
3.3 Avg	**88**	**68.2**	**40.9**	**49.2**	**29.7**	**17.3**

Table 59: Average percentage of variance for all songs examined in Chapter Three, including composite averages by sub-section.

As shown in Table 59, the trouvère concordances had the highest averages of variation in all

of the categories, except for textual variance, which is unsurprising, given that the textual

comparison of insular songs included spelling variants, while the textual comparison of

trouvère songs did not.[254] The composite percentages of variance between the internal concordances and the concordances with the Dublin Troper were relatively close: the averages for note-form variance, pitch variance, and syllables with pitch and note-form variance remained within four percent of one another. The total syllabic variation in the Dublin Troper concordances was 11.3% lower than the total syllabic variation of the internal concordances, and the textual variation in the Dublin Troper was also considerably lower: 10.8% lower than the textual variation in the internal concordances.

The data from Table 59 can be presented in regard to other attributes of the songs examined in this chapter. A comparison of the average total syllabic variation between sequence-form texts and non-sequence-form texts shows that the sequence-form texts had less variation overall: 46% total syllabic variation, compared to 59.4% total syllabic variation, respectively. In regard to the types of source, the miscellany concordances had higher amounts of overall variation and textual variation than the concordances with the liturgical source (the Dublin Troper). The liturgical concordances had the lowest amount of textual variation, as well as overall variation (possibly due to this group containing the majority of the sequence-form texts in this examination).

In regard to geographic relationships, the internal concordances were closest to the Dublin Troper concordances in total syllabic variation (11.3% difference), while the Dublin Troper concordances were closer with the trouvère concordances in the amount of note form variation (but only slightly: 3.4% difference, as opposed to 3.8% difference between the miscellany sources and the Dublin Troper). The internal and Dublin Troper concordances were also very close to one another in regard to pitch variation: a difference of 1.1%, compared with a difference of greater than 20% between either of the insular groups and the

---

[254] Because of the extenuating circumstances surrounding the collection of data on textual variation (explained earlier in this chapter), it should not be concluded from this table that the insular concordances have 'more' textual variation than the trouvère concordances.

Continental sources. In this respect, it is fair to state that the insular sources (internal concordances and Dublin Troper concordances) maintained closer amounts of variation overall than either group had with the Continental concordances.

Out of all the types of variation, textual variation was consistently the lowest, followed by the syllables with both pitch and note form variation. For the insular concordances, there was less pitch variance than there was variation in note forms, though this was the opposite for the concordances with trouvère sources. Chronologically, the later sources (the Dublin Troper and the trouvère manuscripts) had higher amounts of variation in pitch and in note form, but lower amounts of textual variation.

The number of notated verses available did not seem to have any bearing on the overall variation in the miscellany sources, which showed similarly high amounts of variation throughout, no matter the amount of available notated syllables. In the Dublin Troper, however, the longer songs (*Missus Gabriel de celis, Hodierne lux diei, Spe mercedis et corone, Letabundus exultet*) showed less variation overall, as well as significantly less textual variation than the shorter example (*Scribere proposui*). The longer songs also happen to have sequence texts, whereas the shorter example is a Latin song.

In light of the average amounts of variation often being remarkably high, it is necessary to reflect on the concept of 'sameness' in regard to medieval song. The concept of two songs as having the 'same' melody has been a constant thread running through this chapter, but after considering the data it is evident that high levels of syllabic variation are not necessarily indicative of songs having different melodies. It is possible that the essence of what we think of as 'melody' exists somewhere other than the syllabic, 'building-block' level of a song. In that sense, it is necessary to note that this method of syllabic comparison, while providing large amounts of previously-unexamined data about notation, raises questions about the identification and recognition of witnesses. For example, songs with high amounts

263

of variation are nonetheless recognisable as contrafacta, meaning that, even when text is removed from the equation, our criteria for identifying the 'same' melody is based on something less tangible than syllabic comparison. This type of perception is likely based on higher-level processing of a larger musical shape, in a similar manner to the way that language processing works at different levels when comparing words to phrases or sentences. The problem, however, with such perception is that it is very difficult to quantify; this does not mean that the method described in this chapter should be doubted in any way, but instead that it should be held up as concrete evidence of the high levels of tolerance that humans apply to the process of identifying musical 'sameness' when faced with large amounts of variation at the 'micro' level.[255]

Though this chapter has left many questions unanswered, it has certainly achieved the goal of presenting and examining the intricacies present in the notation of insular song, the variations between witnesses of those songs, and also delving into some of the larger

---

[255] Aural recognition of melody has been investigated within studies of perception and memory, as well as framed within examinations of melody and oral tradition. Studies include J.C. Bartlett and W.J. Dowling, 'Recognition of Transposed Melodies: A Key-Distance Effect in Developmental Perspective', *Journal of Experimental Psychology: Human Perception and Performance* 6 (1980): 501-15; Sylvie Hébert and Isabelle Peretz, 'Recognition of Music in Long-Term Memory: Are Melodic and Temporal Patterns Equal Partners?', *Memory & Cognition* 25, no. 4 (1997): 518-33; Anne Dhu McLucas, *The Musical Ear: Oral Tradition in the USA*, SEMPRE Studies in the Psychology of Music (Burlington VT: Ashgate, 2010), esp. 33-48 and 119-126; Mark A. Schmuckler, 'Tonality and Contour in Melodic Processing', in *The Oxford Handbook of Music Psychology*, ed. Susan Hallam, Ian Cross, and Michael Thaut (2nd ed., Oxford: Oxford University Press, 2016) 143-65; and Cecilia Chu Wang and David W. Sogin, 'The Recognition of Melodic Fragments as Components of Tonal Patterns', *Psychology of Music* 18 (1990): 140-9.

In regard to visual processing of notation, John Sloboda has suggested that the rate of processing is dependent upon the structural characteristics of the text: in the case of sight-reading music, we recognise contour more quickly than individual notes. This idea is supported by Lauren Stewart's study on music-reading, in which she showed that musicians and non-musicians alike were able to process number-to-finger mapping exercises (where numbers represented fingers placed on a piano keyboard: 1 for thumb, 2 for index, &c) more quickly when the numbers were presented in a diastematic fashion that was congruent to the notes on the keyboard. John Sloboda, 'The Eye-Hand Span: An Approach to the Study of Sight-Reading', *Psychology of Music* 2 (1974): 4-10; Lauren Stewart, 'A Neurocognitive Approach to Music Reading', *Annals of the New York Academy of Sciences* 1060 (2005): 377-86, esp. 379-80. Further studies on this topic include Frances E. Truitt et al., 'The Perceptual Span and the Eye-Hand Span in Sight Reading Music', *Visual Cognition* 4, no. 2 (1997): 143-61.

networks of song that existed in the twelfth and thirteenth centuries, and continued into the fourteenth century. The question of human interaction with these songs, however, can be explored further, both in regard to the writing of notation in medieval sources, and our modern experience with these notations as cultural and musical artefacts.

Chapter Four: Notational Pedagogy and 'The Notation of Medieval Song'

Introduction: 'The Notation of Medieval Song' Case Study

As shown in Chapters Two and Three of this thesis, the theory and methodology laid out in

Chapter One can be applied to palaeographic research in order to develop a greater

understanding of the ways in which music was being notated during the twelfth and thirteenth

centuries. However, the concept of a semiotic interpretation of musical notation—and the

subsequent engagement with notation as a writing system—can also be useful when teaching

students about the notation. In this chapter, I will present a case study wherein the

methodology discussed in Chapters Two and Three was applied to the design, development,

and execution of an undergraduate notation course called 'The Notation of Medieval Song',

which ran in the spring term of 2015 at Royal Holloway (hereafter referred to by its course

code, MU3423).

In Chapter One, I presented an historiographic overview of palaeography's presence

in musicology, which included many of the reasons I initially felt merited an updated

approach to the paleographic study of music notation. Throughout this chapter, student

responses will be used to highlight how certain assumptions about notation are still prevalent

within the academic community, specifically those related to 'Dark Ages' concepts of

medievalism, as well as ideas which are built on the foundation that there is a direct

relationship between notations used in the twelfth and thirteenth centuries and the modern

notations that students are accustomed to using today. The focus on such responses is not

meant in any way to critique the students—as the chapter will show, such previously-held

presumptions do not prevent the students from eventually making very sound, well-

researched hypotheses about the notation being studied—but to show some of the ways in which this course aimed to discourage students from applying these assumptions to the study of medieval music notation.

In the first section, I will discuss the foundations from Chapter One as they were applied to the notation course. I will also examine current trends in regard to the teaching of early notation to undergraduate students (including digital tools and teaching methods), and how the course in the case study compares to these existing methods. In the second section, I will break down the delivery of the course, including the learning outcomes and goals set, and discuss the tools used in the course delivery (both in and out of the classroom). Finally, I will discuss the course assessments and the way that students (and course supervisors) gave and received feedback. Throughout this chapter, I will refer back to the theory presented in Chapter One, as well as continue to illustrate examples using the flow charts presented in that chapter (adapted from Kurkela).

For the purposes of this thesis, students will be given a unique identifying number, 1 through 17, to ensure anonymity. For this same reason, gendered pronouns will not be used, and will be replaced by the gender-neutral plural pronoun 'their'.[256]

---

[256] In accordance with Royal Holloway's Research Ethics Guidelines, students were made aware at the onset of this course that the design and execution of MU3423 were part of my ongoing research project, as well as counting fully towards their own departmental requirements and meeting all departmental course standards. All student names have been redacted to safeguard their anonymity and confidentiality. Any ideas expressed by students in examples used in this thesis will be disclosed as such and remain the full intellectual property of the student. For college Research Ethics Guidelines in place at the start of the research undertaken for this thesis, please see: https://www.royalholloway.ac.uk/iquad/collegepolicies/documents/pdf/research/researchethicsguidancenotes.pdf (accessed 1 February, 2016).

4.1: Foundation and Course Design

To apply a semiotic approach to the process of teaching medieval notation, the pedagogical method must first be broken down into manageable steps. It is one thing to engage in research that avoids potentially false 'translations' of early notational forms into more recent supposed equivalents, but it is another thing entirely to communicate that methodology to students via pedagogic practice. Furthermore, if digital tools are to be used effectively, the integration of these tools into the teaching process must be included within these methodological steps, to ensure that the technology is being used for specific purposes related to the educational intent. In section 4.1.i, I will discuss these steps and their application to MU3423. In 4.1.ii, I will examine current trends in notational pedagogy and their application to MU3423, and finally, in 4.1.iii, I will discuss digital methods being used in teaching notation, and how they compare to the process used to design and deliver MU3423.

4.1.i: Foundations in Theory: Representation, Notation, and Manuscript Studies

Rather than developing an entirely separate educational methodology to accompany the theoretic approach outlined in Chapter One of this thesis, in this section I will show how the theory from Chapter One can itself be used as the foundation of an educational method. First, I will discuss my approach to language: specifically, how it relates to notation and how it is used to interact with notation. Second, I will engage with the use of digital images for pedagogical purposes, and the effect that the use of these images in a classroom setting can have on a student's perception of the materials being examined. Finally, I will look at the larger picture: how these approaches can add to a student's overall understanding of the material and cultural aspects of a specific style of musical notation.

Chapter One of this thesis introduced Charles Seeger's concept of musicology as a type of verbal interaction, and discussed the ways in which one might navigate the inherent incongruence between external communication, such as language, and the 'inner knowledge of music'.[257] There is a similar distinction between verbal and written communication—both of which are external forms of communication—and individual interaction with music, a largely internal process which can involve comprehension, interpretation, and execution of a performative process. To return to Kurkela's model of notational use (as discussed in Chapter One), the cyclical structure I suggested as being more indicative of medieval notation raises a difficult question of where a person's process of engaging with music notation actually begins.[258] While the semiotic approach laid out in Chapter One can reflect the function of written notation in a linguistic manner, it also raises questions about the intersection between notation and language, and how individual understandings of music are often discussed with borrowed vocabularies in the absence of specific, tailored terminology. In regard to the material being used in this study, the most straightforward example of this borrowing is found in the naming of the individual neume forms, which has been discussed at length in the introduction to this thesis.[259] The lack of an individual vocabulary results in any and all scholarly discourse being based upon a terminology which does not accurately represent what is being discussed; for the music notation being examined in this thesis, the notation itself is borrowed from systems of chant, and any new symbols were created (out of necessity) from the existing visual system, which came with its own history of representing sound.

The question remains, then, of how to approach the language of notation in an educational sense. Certainly one of the first barriers to be crossed when teaching or learning an unfamiliar system of notation is its individual vocabulary, which is dependent on the time

---

[257] See section 1.3.i.
[258] See section 1.3.ii.
[259] See Introduction, 'An Explanation of Neume Forms'.

and place in which the notation was used. In the case of teaching the notation of insular song in the twelfth and thirteenth centuries, the basic terminology was the first step in the process of teaching it to students who had not previously engaged with this notation. However, the vocabulary communicated to the students was intentionally limited. Students were given the names of the basic neume forms, but with the caveat that this was a borrowed vocabulary. This was in order to prepare students for the possibility that, when searching for secondary source material, they might encounter these terms used in their original contexts, which would not be useful in the context of their work for MU3423.

This points to another problem with the lack of unique vocabulary for this material: generating new scholarship using this type of vocabulary might be ill advised, considering it is building on existing scholarship which uses the same terminology, but with different meanings. Teaching this vocabulary to students may be perpetuating a cycle that is inherently confusing. However, as discussed in the Introduction to this thesis, the possibility of using a non-traditional terminology was considered during the process of developing this project. In the end, however, the choice to carry this vocabulary over from previous traditions seemed fitting, since music scribes were engaging in a similarly 'borrowed' writing process (as noted above), and the possibility of creating a unique vocabulary seemed unwise. One possible system of referential vocabulary included what was essentially using pitch relation to refer to specific forms: this technique is still used in this thesis to refer to many of the compound neumes in the form of the 'H-M-L system' (discussed at length in section 2.2.xi). While the H-M-L system works for ad hoc, compound neumes, allowing forms to have unique names was preferable in most cases, due to the high volume of forms which involve multiple notes

with similar pitch relationships to one another, yet are written in ways which are visually distinct from one another.[260]

In order to address the issue of vocabulary in MU3423, students were offered traditional codicological vocabulary to work with, to facilitate discussion of material elements like page preparation and layout, but were intentionally not given the type of technical palaeographic vocabulary that is often used to write about specific elements of written forms. This decision was made for several reasons: first, because a single, unified palaeographic nomenclature simply does not exist. Depending on the approach used, the terminology may vary, and the growing intersection of traditional and digital methods of palaeographic research adds another set of terms to the mixture. Projects to create a unified palaeographic terminology have been suggested within subject-specific groups, such as the *Comité internationale de paléographie latine*, an attempt to create a compendium of French codicological vocabulary, published by Denis Muzerelle in 1985.[261] Initially intended to be multilingual, the project currently exists in an online form which, according to the home page, was last updated in 2002-03. Michelle Brown has contributed to the idea of a general palaeographic terminology (using Latin terms, but written in English), with *A Guide to Western Historical Scripts from Antiquity to 1600*, in which she offers a method for referring to Gothic scripts.[262] Brown's method, based on previous and existing scholarship in the field, allows scholars to use Latin terms to break down a sample of handwriting into categories based around attributes, beginning with more general characteristics (does the language use letters? Is it written using capital or small letters, or both? &c.) and becoming more and more

---

[260] For examples of various compound neume forms (and further discussion of the 'H-M-L system'), please see section 2.2.xi of this thesis.
[261] Denis Muzerelle, *Vocabulaire codocologique: Répertoire méthodique des termes français relatifs aux manuscrits*, Histoire du livre et des textes, i (Paris: Rubricae, 1985), http://vocabulaire.irht.cnrs.fr/.
[262] Michelle P. Brown, *A Guide to Western Historical Scripts from Antiquity to 1600* (London: The British Library, 1990).

specific in regard to chronological styles and clarity of the individual hand, in a manner that is similar to the widely-known system of taxonomic rank used for biological classification (Kingdom, Phylum, Class, Order, &c.), though Brown's system is not as explicitly structured. Less specific to script (and academic usage) is Brown's *Understanding Illuminated Manuscripts: A Guide to Technical Terms*, which is reproduced on the British Library's Online Catalogue of Illuminated Manuscripts.[263] Unlike *A Guide to Western Historical Scripts*, the *Guide to Technical Terms* is accessible by a non-specialist audience: for example, a person wishing to look through the British Library's online manuscripts collection. Brown's work is useful, but both texts are specific to one discipline. For example, *Understanding Illuminated Manuscripts* is useful for manuscript studies in general, but vocabulary-based difficulty tends to arise with very specific work.

If language-specific palaeographic studies require their own terminology, it follows that musical notation would require its own as well, and this is the second reason I chose to refrain from introducing students to commonly-used palaeographic terminology. Rather than attempt to introduce students to the existing styles of palaeographic vocabulary developed with the purpose of examining text, I thought it would be interesting (and empowering) to allow them to create their own system of describing the hands used to write music notation, and possibly reveal quite a bit about the nature of modern perceptions of early notation in the process. The students would use the existing names of note forms, and some basic codicological terminology, and combine those with the words that they deemed appropriate in the context of their work. Then, when coming together as a class to discuss work done

---

[263] Brown, *Understanding Illuminated Manuscripts: A Guide to Technical Terms* (Malibu, CA: J. Paul Getty Museum, and London: The British Library, 1994); *Catalogue of Illuminated Manuscripts: Glossaries*, https://www.bl.uk/catalogues/illuminatedmanuscripts/glossary.asp, accessed 15 March 2016.

independently, one student could choose to use another student's contribution (and so on), creating a group vocabulary, akin to a classroom glossary.

Just as students were encouraged to engage with this notation in an independent linguistic context, they were also encouraged to engage with the notation independently of any modern transcription. Students were never asked to transcribe or translate notation, nor were they ever shown transcriptions of modern notation. As I will show in section 4.1.ii, this is a unique approach to the teaching of early notation at the undergraduate level. The use of modern notation encourages students to falsely equate two types of music-writing that are not analogous, and also results in an interpretation of early music notation that is coloured by knowledge of modern, printed music. I acknowledge that it is impossible to remove all traces of students' previously-held knowledge of notation, nor would I attempt such a removal. However, I believe that an approach which allows students to engage directly with the source material results in a deeper understanding of the material being studied, and certainly does not negate the possibility of a student using the skills developed in this course to independently engage in the process of transcription in the future, if that is their wish.

Beyond navigating the intersection of music, language, and music as language, the teaching process required students to engage with digital images of manuscript sources. It is in this respect that the semiotic idea of representation—a term originally denoting the signifying object in Peirce's tripartite semiotic model—factors into the discourse surrounding digital surrogates.[264] In this sense, the digital image functions as a signifier of the manuscript as well as being an object that merits examination in its own right. Because of the facility with which the digital image functions as an object, it is easy for users to forget that this image is also a digital representation of a physical object. Figure 148 shows a flow chart

---

[264] This concept is discussed at length in the introduction to section 1.3.

initially used in Chapter One to represent the basic relationship between medieval notation and sound events.
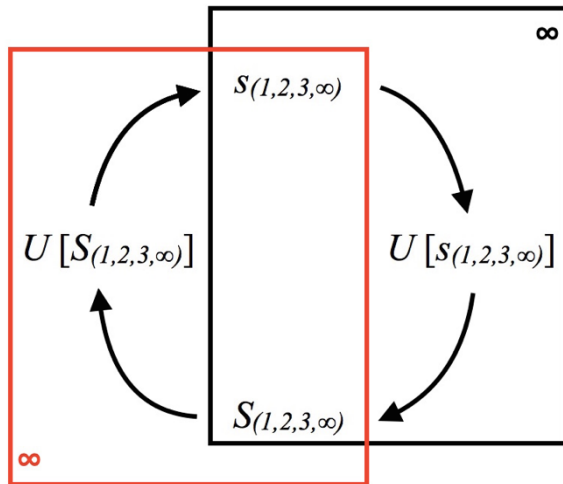
Figure 148: Flow chart representing the basic relationship between medieval notation and sound events. Originally used in Chapter One of this thesis.

In the system of the Kurkela-inspired flow charts, the large S is the 'score', and the small s is the sound event, while U functions as 'understanding'. When considering how digital surrogates might fit into this type of flow chart, it is important to acknowledge the existence of S, even though it may not be present in the action being represented by the flow chart. In this case, a digital surrogate will be represented as $(S)d$. Figure 149 shows the transition from manuscript to digital surrogate, with classroom engagement (C) as the final result. D represents the digitisation process.

$$S \xrightarrow{D} (S)d \rightarrow U \rightarrow C$$

Figure 149: Flow chart representing the transformation from manuscript to digital surrogate, including user interaction.

The use of digital images both for individual research and classroom-based activities is becoming commonplace, but less attention has been given to how use of such images might

alter a student's perception of the source material. Though facsimile representation has been common for some time now, there are specific questions of perception that are unique to digital imaging. Printed facsimiles, like most original source material, are books; no matter the difference in size or construction, a printed facsimile is a physical object, and its materiality serves to remind users that the facsimile is a representation of another physical object.[265] An understanding of the physicality of manuscript culture is inherent to the study of any type of palaeography, and musical notation is no exception; written text, be it language-based or musical, is inextricably linked to the page upon which it is written. In the case of the process shown in Figure 149, *U* takes on an extra function that is not required of it in a flow chart representing engagement with a physical manuscript: understanding the relationship between *S* and *(S)d*. By building the use of digital surrogates directly into the structure of the course, students not only have access to the manuscript content being represented through the images, but they receive guided tutorials on how to conduct academic research using these surrogates (basically, how exactly to go about the process of *U*). Course lecturers are able to remind students of the physicality of these objects, since oftentimes the clarity of digital images can result in cognitive dissonance between the image being projected (often on a projector screen many times larger than the actual folio), and the object being represented.

In MU3423, I wanted the students to experience approaching an unfamiliar system of music notation without the distraction of borrowed vocabulary. This allowed them to examine this notation within its context as a writing system. The use of digital images supported the examination of this notation as it was written, and the guidance offered to the students meant that they were able to approach digital images with a critical eye (as will be shown in greater

---

[265] This line of thought is a continuation from an unpublished essay, 'Modern Representations of Music Manuscripts: A Comparative Study of the Use of Facsimile Editions and Digital Image Collections', which I submitted for the partial requirement of the Master of Studies degree in Musicology at Oxford University in 2012.

detail later in this chapter, especially in section 4.2.ii). These are skills that the students of

MU3423 can use beyond the confines of this particular course. The examples above are

unique to the notation examined in this thesis, and in MU3423, but both pedagogical aspects

(language- and image-based) are transferable to other musicological endeavours. Therefore,

the design of this course not only prepares students for an examination of insular song

notation in the twelfth and thirteenth centuries, but gives them the skills that they will need if

they encounter other early systems of music notation in a more independent (non-classroom)

setting.

4.1.ii: Current Trends in Notational Pedagogy

While there is an abundance of scholarly discourse on the teaching of modern musical

notation (either as its own process or under the umbrella of music education), scholarship on

teaching early music notation in higher education institutions is virtually non-existent. The

two fields are not necessarily parallel—the pedagogical focus when teaching music notation

is typically on modern notation, and is often part of a curriculum for younger children, while

students entering into an undergraduate music department are expected to already have the

ability to read modern notation—but the range of scholarship about the process of teaching

modern music notation is not always centred on praxis. Studies on teaching modern musical

notation can involve the integration of technology,[266] disability studies,[267] and the

introduction of new and alternative teaching methods (including alternative notational

systems) to support music learning.[268]

Within most university music departments, if early notation is taught, it is either

mentioned within a music history survey course (frequently in discussions of the *Ars Nova*)

or as a specific notation course, usually offered at the postgraduate level, and often with

proficiency in editing as the ultimate goal. Specialised undergraduate notation courses, like

their postgraduate counterparts, tend to cover all 'early' Western notations, and similarly

approach the learning of such forms of notation from an editorial perspective. There are

currently 51 universities in the United Kingdom which have dedicated departments of music.

Out of those 51 universities, only 14 offer undergraduate courses in which students are taught

notation.[269] Of these 14 departments, only seven offer courses which contain 'Notation' in the

course title; the other seven teach notation within the context of a larger field of study, such

as introductory modules which cover 'Medieval Music' as a broad topic, or which focus on

---

[266] William I. Bauer, *Music Learning Today: Digital Pedagogy for Creating, Performing, and Responding to Music* (New York: Oxford University Press, 2014); Maria del Mar Galera et al., 'Music Notation Software as a Means to Facilitate the Study of Singing Musical Scores', *Electronic Journal of Research in Educational Psychology* 11, no. 1 (2013): 215-38; Liow Bee Teen et al., 'Raising Interest with Software Integration in Music Notation Learning', *Procedia - Social and Behavioral Sciences* 143 (2014): 379-83; Peter R. Webster, 'Key Research in Music Technology and Music Teaching and Learning', *Journal of Music, Technology, and Education* 4 (2012): 131-47.
[267] Toby W. Rush, 'Incorporating Assistive Technology for Students with Visual Impairments Into the Music Classroom', *Music Educators Journal* 102, no. 2 (2015): 78-83; Karen Salvador, 'Music Instruction for Elementary Students with Moderate to Severe Cognitive Impairments: A Case Study', *Research Studies in Music Education* 37, no. 2 (2015): 161-74.
[268] Yi-Ting Kuo et al., 'A Proposal of a Color Music Notation System on a Single Melody for Music Beginners', *International Journal of Music Education* 31, no. 4 (2013): 394-412; Pao-Ta Yu, et al., 'Using a Multimodal Learning System to Support Music Instruction', *Educational Technology & Society* 13, no. 3 (2010): 151-62.
[269] This is provisional data, having been gathered via the Royal Musical Association's list of UK music departments and the information available on departmental web sites. http://www.rma.ac.uk/resources/he-departments.asp, accessed January 2016. Data is therefore reliant upon the amount of information available on departmental web sites and the frequency at which they are updated. These statistics should be interpreted with this in mind.

early performance; notation is covered, but is not the main focus of the course. The editorial-based approach to music notation is reflected in the abundance of scholarship on the editing of early music,[270] as well as the continued musicological focus on the creation of scholarly editions.[271]

As noted in Chapter One of this thesis, there is a lack of dedicated scholarship on the palaeographic approaches to notation, and therefore it is fitting that any type of 'standard' educational approach would be difficult to determine. As it stands, palaeographic and codicological skills are passed down in a type of oral tradition, from student to teacher, resulting in certain (unofficial) schools of thought that are often geographically centred, both in regard to University systems and to countries.[272] These skills are regularly used by students and teachers alike, but neither the skills themselves nor approaches to their transmission have been the subject of dedicated study in regard to early music notation. Because of the lack of published material, the design of MU3423 drew from a combination of my own experiences as a learner, and the information collected in my research for Chapter One.

---

[270] Significant publications on this topic include Margaret Bent, 'Editing Early Music: The Dilemma of Translation', *Early Music* 22, no. 3 (1994): 373-92; Philip Brett, 'Text, Context and the Early Music Editor', in *Authenticity and Early Music*, ed. Nicholas Kenyon (Oxford and New York: Oxford University Press, 1988), 83-114; John Caldwell, *Editing Early Music* (Oxford: Oxford University Press, 1995); James Grier, *The Critical Editing of Early Music: History, Method and Practice* (Cambridge: Cambridge University Press, 1996).

[271] Major ongoing edited series include *Corpus Mensurabilis Musicae*, 112 vols. (Rome: American Institute of Musicology, 1997-); *Early English Church Music,* 56 vols. (London: Published for the British Academy by Stainer and Bell, 1963-); and *Musica Britannica*, 99 vols. (London: Published for the Musica Britannica Trust by Stainer and Bell, 1951-). Digital editions are growing in popularity as well, such as *The CMME Project: Computerized Mensural Music Editing*, which currently has two completed projects and three more 'in progress', with four more listed as 'forthcoming': http://www.cmme.org.

[272] For example, Thomas Schmidt's observation that discussions of the 'iconic turn' have been mostly relegated to German-speaking scholarship (cited in section 1.3.i), as well as the preference for scholarship on quantitative palaeography in Continental Europe shown in section 1.3.iv.

4.1.iii: Digital Musicology and the Classroom

The use of digital tools is becoming ubiquitous in many areas within the field of

musicological research, including certain aspects of undergraduate teaching. Lecturers often

use tools like PowerPoint, as well as digital audio examples, to enhance class lectures, and

use digital platforms like Moodle to deliver course content such as syllabi and PDFs of

reading materials.[273] In the field of musicology, many professors use digital surrogates and/or

images of facsimile editions to give students visual examples of manuscript content.

However, the tools discussed above are mainly used to supplement traditional methods of

delivering educational content, such as lecturing. In this section, I will discuss several reasons

for incorporating further digital tools into the process of teaching early notation (both in and

out of a classroom setting), give some examples of how such tools are already being used to

teach early notation, and consider problems that may arise (and have already arisen) from this

type of technological integration.

Notation courses involving digital technology are rare. As part of an AHRC grant for

the Digital Image Archive of Medieval Music (DIAMM) in 2011,[274] Elizabeth Eva Leach

developed an online introductory course where users can learn the basics of fourteenth-

century French notation.[275] According to the DIAMM introductory page, Leach's course is

the first ever medieval musicology Virtual Learning Environment (VLE). The course is

hosted on the DIAMM Moodle site for the Faculty of Music at the University of Oxford,

though it is open to all users, not just those affiliated with Oxford.[276] According to the

---

[273] The Moodle platform will be discussed further in Section 4.2.ii, in regard to its use in MU3423.
[274] DIAMM will be discussed further in Section 4.2.ii, in regard to its use in MU3423.
[275] 'Medieval Musicology VLE', *DIAMM*, http://www.diamm.ac.uk/resources/medieval-musicology-vle/, accessed 15 March 2016.
[276] http://diamm.nsms.ox.ac.uk/moodle/, accessed 15 March 2016.

description, the course is designed for 'musicians who can read modern notation but have no knowledge of medieval notation', and who desire the ability to 'understand the sorts of decisions that modern editors have made, check available editions against original notation, [and] sing directly from original notation'.[277]

Leach's course is designed to give users the basic skills needed to move on to the more advanced studies needed to independently edit music written in this notation. Leach also includes a disclaimer which states that the tutorials are not intended to teach the specialist editorial skills one might need to edit newly-discovered music of the fourteenth century, 'not least because most new discoveries are fragments in fairly illegible condition'. The detailed learning outcomes are meant to ensure that a user does not assume that, once the tutorials are complete, he or she will be able to approach any music of the fourteenth century with fluency. As the course title suggests, it covers the basics.

After completing the free registration, a user can navigate through 12 different topics including note shapes, mensuration, ligatures, coloration, text, and accidentals, as well as further resources which are relevant to the course. Each topic comes with multiple tutorials, divided into prose explanations and illustrated examples which include images from manuscripts as well as transcriptions into modern notation. The transcribed examples are presumably a necessary tool when attempting to teach the principles of mensuration, as it is very difficult to discuss rhythm outside the context of modern vocabulary. The transcriptions are only for reference, however; learners are never asked to transcribe in any of the quizzes (though they are given tips on the process of transcribing text in Tutorial 10a, with the caveat

---

[277] Elizabeth Eva Leach, 'An Introduction to the Basics of Fourteenth-Century French Music Notation', http://diamm.nsms.ox.ac.uk/moodle/course/view.php?id=2, accessed 15 March 2016.

that learning to transcribe medieval texts merits its own set of tutorials). The quizzes are included so that users can test how well they are retaining the information being taught through the course, and are available for some (but not all) of the tutorials.

Leach's course is intended for independent use, rather than being designed for a university class about medieval music like MU3423. The DIAMM introduction notes that the impetus for the course's creation was that many universities no longer offered courses in medieval musicology.[278] However, it also notes that there is a 'non-university' audience for this type of learning: users who wish to engage with this type of music, but for whom the 'complexities of the notation' were an obstacle.

More recently, musicologists at Basel University hosted a seven-week online course called *From Ink to Sound: Decoding Musical Manuscripts*, which began on 2 November 2015. The course was delivered using FutureLearn, a learning platform owned by The Open University that has been hosting massive open online courses, or MOOCs, since 2013.[279] According to the 'About the Course' section on the FutureLearn course listings, the course is intended for musicians (professional and non-professional alike) who are interested in palaeography, and for undergraduate students from a broad range of disciplines, including musicology, history, philology, theology, and semiology.[280] According to the course description, after taking the course, users should understand both practical and theoretical principles of reading early notation, as well as how to 'decode and transcribe' these notations.

---

[278] This assertion is reflected in the discussion of available notation courses in UK universities in section 4.1.ii.

[279] *FutureLearn*, 2013, http://www.futurelearn.com, accessed 15 March 2016.

[280] *From Ink to Sound*. Basel University. https://www.futurelearn.com/courses/from-ink-to-sound, accessed 15 March 2016.

Like Leach's course, *From Ink to Sound* is divided into weekly topics, beginning with a general introduction to the course and theoretical approaches such as oral transmission and musical literacy, then moves chronologically, from the ninth century through the sixteenth century. Each week's syllabus features subsections which deliver information via prose articles, videos (including lectures by musicologists Matteo Nanni and Angelika Moths, listed as 'course educators', and also tours and interviews with specialists), as well as manuscript images and musical performances by musicians at the Schola Cantorum Basiliensis. *From Ink to Sound* also aims to develop a user community via course discussions built into the tutorials, asking users to introduce themselves and give some information about their educational and musical experience, but also asking users to give responses to specific questions every week, and encouraging discussion among users (these 'discussion' sections resembled a typical, web-based 'comments' section, which showed each commenter's user name and photo, if available). Because of the weekly discussion questions, *From Ink to Sound* had a specific starting date, and the weekly topics were sent via email (and 'opened') week by week to ensure maximum discussion among the participants. This contrasts with Leach's course, which does not have any type of time requirement (in fact, Leach notes that users are not required to complete the tutorials in order), or a social component. *From Ink to Sound* regularly uses modern transcription within the tutorials, as Leach's course does, but in this case the transcription also features heavily in the quizzes: learners are asked whether or not a transcription is 'correct'. This features more heavily later in the course, especially when dealing with rhythmic and polyphonic examples.

Because *From Ink to Sound* is hosted on FutureLearn, users who complete at least 50% of the course are eligible to purchase a personalised Statement of Participation,

confirming that they have taken part. This is not an uncommon practice for online courses, and is intended mostly for users who intend to add their participation in such courses to their CV, or who plan to use the course for purposes of Professional Development. The course is still accessible once the seven weeks are complete, and users can re-open any of the tutorials (though they cannot re-take quizzes). According to the FutureLearn FAQ, users will be able to access any of the course content for reference in the future.[281]

The design differences between these two courses lend each one positive and negative attributes, depending on the educational outcome desired by the learner, as well as the learner's flexibility regarding the amount of time they are willing to commit to the course. For example, certain users may prefer the independence afforded them by Leach's tutorials, while some might rather experience a more structured, 'school-like' course like *From Ink to Sound*, with opportunities for discussion, and the status afforded to them by the opportunity to receive a statement of participation, as if the course were an accredited qualification. The content of each course varies as well. Leach's course only covers one style of notation, but it delves much more deeply into that particular notation. Users who desire a general overview of multiple early notation systems (as well as a chronological structure) might prefer *From Ink to Sound*.

Both cases present potential problems for both the creators and learners alike. Although *From Ink to Sound* gives users the opportunity to participate in online discussions and to communicate with the course educators through the FutureLearn platform, neither course offers the type of individual instruction one would expect from a course that is held in

---

[281] 'What happens when I complete a course?' *FutureLearn FAQ*, https://about.futurelearn.com/about/FAQ/, accessed 15 March 2016.

a physical classroom. Even with the in-depth tutorials, some of the quizzes on *From Ink to Sound* (particularly once the course delved into notoriously tricky topics like the rules of alteration and imperfection) left me feeling frustrated because I wasn't entirely sure why a particular answer was incorrect. Leach's Moodle quizzes are graded on a sliding scale (the more attempts it takes, the less points are awarded), but incorrect answers receive hints as to why that particular answer was not correct. These challenges are to be expected from independent learning environments, however, and their negative impact is balanced out for many users by their convenience.

At times, however, the convenience of technology comes with a cost. The Moodle platform used to host Leach's fourteenth-century tutorial must be maintained and updated whenever Oxford University updates its Moodle site. This requires site administration, funding for which is not necessarily available when needed. This problem is not limited to teaching resources in musicology, but applies to digital resources in general. Funding is limited, and opportunities to update resources will often run out as host platforms are updated. FutureLearn, on which *From Ink to Sound* is hosted, is a private company, owned by The Open University, a distance-learning university specialising in online education. Because of this affiliation, *From Ink to Sound* comes with a built-in resource management team that is not available for a Moodle course that was created independently by a single scholar, as is the case with Leach's tutorials.

Both projects are examples of digital pedagogy, with an emphasis on free and accessible information to be obtained independently (i.e., outside a university setting) by non-specialist users. Certain aspects of each method are comparable with elements of MU3423: Leach's tutorials focus on one type of notation, and Moodle is used as the VLE, while certain

social elements available in *From Ink to Sound* are available in MU3423's online

platforms,[282] but the major difference with MU3423 is that it has a classroom component.

---

[282] To be discussed further in section 4.2.ii.

4.2: Course Delivery and Tools Used

This section will focus on MU3423's execution, in the Spring term of 2015. In the first sub-section, I will outline the learning outcomes of the course, and in the second, I will focus on specific digital tools that were used during the course. Finally, I will offer a rundown of the course's ten-week structure, showing how the digital tools fit into the weekly schedule.

4.2.i: Learning Outcomes and Course Goals

The major learning outcomes proposed for MU3423 were as follows:

1. To recognise the notational forms being used in manuscripts of medieval song and understand their usage.

2. To sing and/or play songs from sources in the period being studied.

3. To identify and analyse aspects of manuscript layout, script, language, and text relevant to the study of song.

4. To interrogate and compare the approaches of different music scribes as a tool for analysis of song.

5. To draw on a range of skills for the close reading and analysis of handwritten musical scores from any period.

The course aims and content centred around a combination of traditional and e-learning techniques intended to aid students in their understanding of the notation of medieval song. While the spring 2015 run of MU3423 focused on insular notation from the specific period of 1150 to 1300, the course was designed in a way that would allow future incarnations to shift the temporal and geographic focus and examine different types of medieval song notation,

depending on factors such as student interest, research focus of the lecturer, and availability of manuscript images.

4.2.ii: Tools

The traditional academic skills introduced in MU3423 were codicology, palaeography, and musical analysis. However, the design of the course allowed the students to approach these traditional research skills through the use of digital media. Various digital tools were incorporated into MU3423, for use in the classroom as well as for students to use independently as a supplement to lectures and assigned reading. This section will focus on the digital tools used in MU3423. The main three tools that will be explored during this sub-section are Open Rev, student blogs, and quizzes, with a final examination of other digital resources included in the course.

Open Rev

One of the Internet-based tools used was Open Rev, an open-source collaborative annotation tool created by a team of Harvard graduate students intended mostly for use in STEM fields.[283] The impetus for the creation of Open Rev was to provide open access to scholarly scientific publications, and allow users to publicly comment on the uploaded documents, creating a community discussion without the constraints of publishing firewalls. In MU3423, the students used Open Rev to interact with, annotate, analyse, and discuss digital images of medieval manuscripts. A range of privacy settings are available on Open Rev, and for MU3423 I set up a private group—accessible by e-mail invitation only—to avoid copyright violation and ensure that only approved users had access to the manuscript images and

---

[283] 'Open Rev', *OpenRev.org*, accessed 15 March 2016, http://www.openrev.org. Thank you to Nuno Barreiro, Lecturer in Computer Science at Royal Holloway, for bringing this tool to my attention.

student-created content. Figure 150 shows the Open Rev home page, as seen by a logged-in member of the group (in this case, my administrative account).[284]
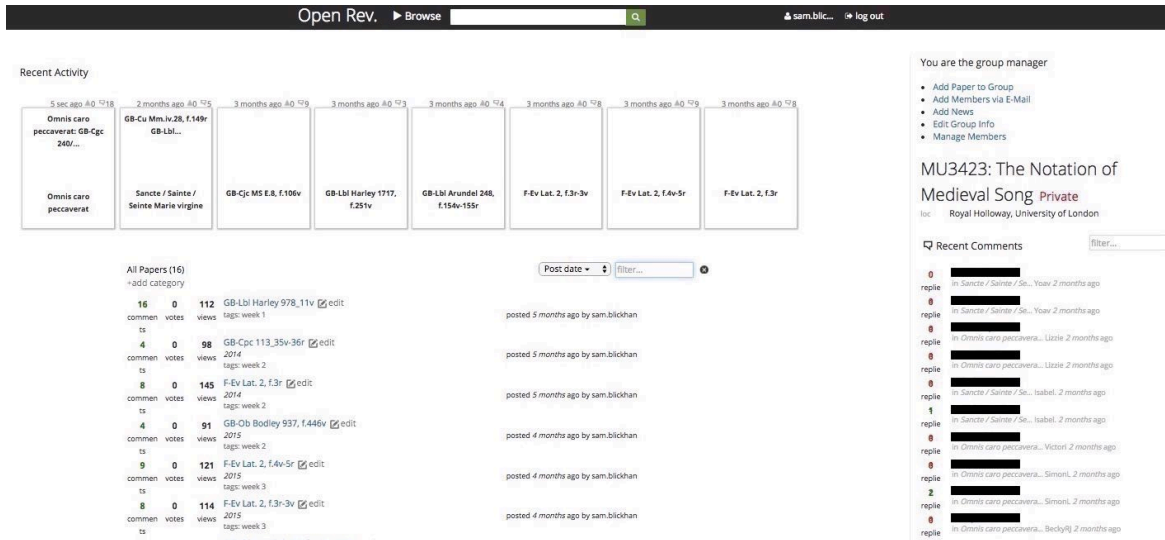
Figure 150: Open Rev home screen for Private Group 'MU3423: The Notation of Medieval Song'.

Once registered with an Open Rev account, the students could enter the private group and see images of the 20 different songs used during the course. The images had to be converted to PDF in order to be uploaded on the Open Rev platform, and often also had to be resized to fit the file upload size limit of 20MB. To put this file size in perspective, digital images of manuscripts are often up to 400MB in size and can even be larger, depending on the file type and quality of the camera used to take the original photographs. The images used for MU3423 were large enough that the students could zoom in and examine the notation in detail, although some files could be viewed more closely than others, depending on the original file size and format. Each PDF was given the manuscript siglum as a file name, and was tagged with the week of term during which it was being used, so that students could easily find images for a particular assignment.[285] These tags can be seen above, in Figure 150.

---

[284] For the entirety of this chapter, all student names (and Open Rev log-in IDs) will be blacked out for privacy.
[285] To see all of the songs assigned for Open Rev tasks (organised by week), please see Appendix II.

In MU3423, Open Rev was used for viewing and interacting with manuscript images both in and out of the classroom. Students were given weekly tasks related to the previous week's lecture; these tasks allowed them to independently practise the skills learned in the lectures, while having access to the comments made by the other members of the course.[286] The tasks were mostly based around manuscript-focused interpretative skills like palaeography and codicology, and each week the tasks became steadily more difficult. For example, during the first few weeks of the course, the students were asked to select a group of notes in one of the songs available for that week, highlight them on the image, and then post a comment that identified the different note forms (using the same chant terminology discussed in the Introduction and used throughout this thesis). This approach gave the students the advantage of working with 'real' examples of medieval notation straight away, rather than some kind of abstract, idealised notational 'standard', such as the printed neume tables discussed in Chapter One. This allowed the students to hone their identification skills while simultaneously learning to cope with the variability of handwriting and—crucially— always seeing the notes in the context of the surrounding notes, underlaid text, and entire manuscript page. At the same time, the students were able to familiarise themselves with the necessary vocabulary early on in the course, and also to develop sufficient knowledge of codicology and palaeography so that they could eventually apply these skills to the two pieces of summative coursework assigned during the term.[287]

The Open Rev tasks were a combination of structured questions with definite answers, and exercises in critical analysis and interpretation. Figure 151 shows an exchange from the Open Rev comments during the second week of the course.

---

[286] A complete list of Open Rev assignments is available in Appendix II of this thesis.
[287] The coursework will be discussed in greater detail in section 4.3.i.
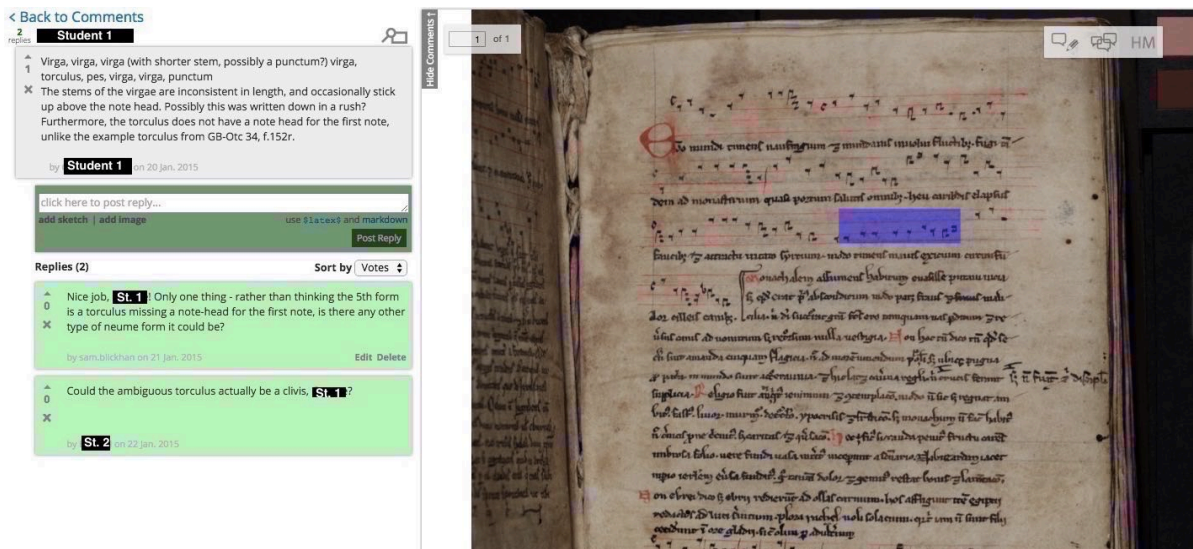
Figure 151: Open Rev comment exchange in Week 2, discussing *Ego mundi timens naufragium*, in *F-EV* 2, f.3r.

In the exchange above, the writer of the original comment (Student 1) mistakenly identified a clivis as a torculus, and criticised the scribe of this song for supposedly having written the torculus in a rush, thus forgetting to write the first note-head. In the first response to the original comment, I asked Student 1 if they had considered whether there were any other possible note forms this could be before jumping to the conclusion that the form has been written incorrectly. In the second response, another student (Student 2) suggested that the form in question might be a clivis. In this case, not only were both students developing knowledge of historical notational forms and their specific vocabulary, but the platform allowed Student 2 to use their knowledge to help Student 1, with prompting from me that did not require me to divulge my own interpretation of the form, ensuring that the students came to this conclusion on their own, with minimal assistance. The Open Rev platform allowed all three of us to discuss the problem outside the classroom setting, using the same visual reference points.

This particular example, from only the second week of the course, is also a good example of students' willingness to apply previously-held assumptions (whether conscious or

not) about medieval music. Student 1 was immediately ready to accuse the scribe of having made a mistake, even though this was only the second week of the course. It is possible to interpret this inherent 'mistrust' of medieval scribes as being directly related to an assumption that medieval culture was somehow less 'evolved' than modern culture. In this respect, the course aimed to present a variety of scribal hands (some more legible than others) in order to show that a characterisation of notation as 'messy' does not always equate to its being incorrect.

Beyond the immediate 'problem solving' at hand in this example, another useful result of the Open Rev comment system was that students could see how the interpretation of certain forms and scribal traits could vary among their peers, and be privy to the various routes taken by their colleagues in order to come to their own individual conclusions, and also to see that there are almost always multiple interpretative possibilities that need to be examined before scribal error can be presented as a well-researched hypothesis. Palaeography, in many cases, can be less about identifying an individual grapheme than about determining what forms within a writing system a specific grapheme is not, and the Open Rev tasks helped to shed light on students' processes of elimination. Figure 152 shows a comment (again, from Student 2) from the second week of the course. The Open Rev task was for the students to choose a group of notes from one of the week 2 images and identify the forms in the group.
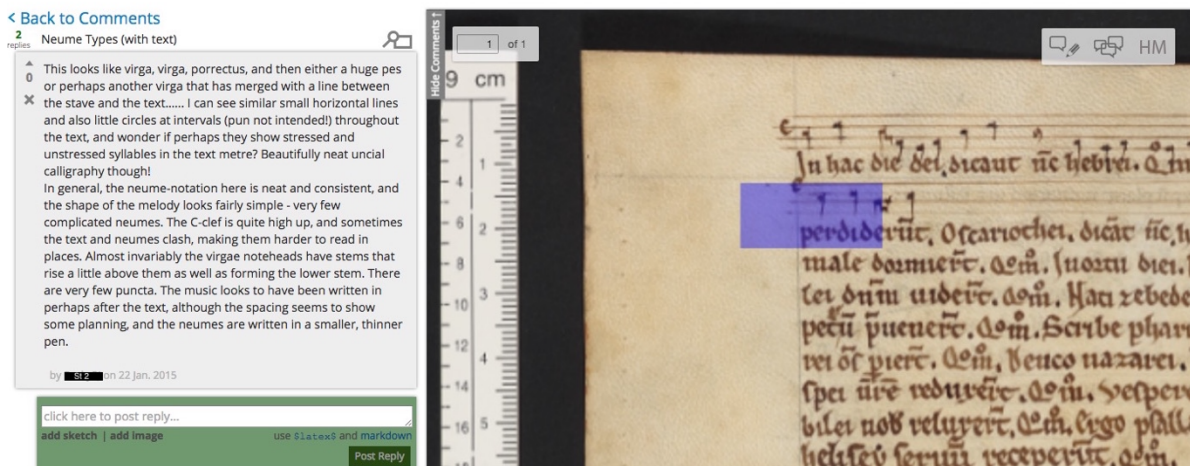
Figure 152: Student comment in Open Rev, Week 2, discussing *In hac die dei*, from *GB-Ob* Bodley 937, f.446v.

In this example, Student 2 noted that the fourth note-form on the second line of music is slightly ambiguous; according to the student, it could either be 'a huge pes' or 'another virga that has merged with a line between the stave and the text'. The student then went on to note that there are other 'small horizontal lines and also little circles' throughout the text of this piece. The basics of textual palaeography, including marks of abbreviation, had not yet been covered in the second week of MU3423, so at this point this student was drawing on the information from the course thus far, and combining that information with the visual information available from the manuscript image in order to make an educated guess about the possible identity of this form. The student's second suggestion is correct; in this instance, the scribe has drawn a virga, the descender of which has run into a horizontal line, indicating the abbreviation of 'perdideRUNT'. The Open Rev platform gave Student 2 the opportunity to detail their thought process in the comment, which then allowed those of us supervising the course (as well as the other students) to see how it was that Student 2 came to these conclusions.

In MU3423, the approach to textual palaeography was similar to the approach to notational palaeography in that, at times, the students needed to eliminate certain possible

292

letter combinations in order to determine what word was actually written on the page. In week four of the course, which was primarily focused on studying the texts of songs, the students were given some initial information (via lecture) based around visual recognition of forms which would then allow them to make larger inferences. For example, the students received a list of some common, unfamiliar letter forms, as well as letters that may help to signify that a specific language is being used. The languages found in the content for this particular course were medieval Latin, Anglo-Norman French, and Middle English, so the introductory information included some tips for successful transcription of an unfamiliar language. For example, if the student did not know what language was being used, they could use certain letters as indicators, such as 'w' as being often indicative of English; and 'z' as being rare in Latin, while relatively regular in Anglo-Norman French, and less so in Middle English. Discussion of specific letters included the 'long s' [ſ] and how it is frequently mistaken for a miniscule 'f,' as well as the common lack of distinction between paired letters like 'u' / 'v' and 'i' / 'j', and some content-specific cursive letters commonly found in this group of songs, such as the cursive 'r' which often follows the letter 'o'. Students were also given information on the Middle English characters that are no longer used in modern English writing, such as *eth* [ð], *yogh* [ȝ], *thorn* [þ], and *wynn* [ƿ].

The students also learned to recognise and identify types of abbreviation (such as truncation, contraction, special symbols such as '&', etc.) and were given a list of some of the outcomes when translating abbreviated forms back into full words, such as the horizontal line from Figure 152 as indicating a missing letter 'n'. By giving the students this information before assigning them an independent, text-based Open Rev task, their process of text transcription could function more smoothly and allow them to focus their attention on the text's relationship to the musical notation, rather than spending a large amount of time attempting a text-only transcription.

I believe that this type of approach to unfamiliar musical texts is beneficial to the structure of MU3423 for a number of reasons. First, because the course is for undergraduate music students (most of whom are focused on performance), many of them will not have the linguistic background normally required for a specialised medieval module. Second, because the main focus is engaging with notation, the impetus behind the textual focus (at least in the context of this week during the course) should not be fluency or translation, but transcription and identification, so that the students can see how the text and notation fit together in regard to syllabification. Finally, the process is helpful in that it prepares students for the possibility of encountering unfamiliar texts; they will have experience recognising visual factors that can help determine language and aid in the process of transcription. This is a transferable skill which will allow them to branch out into textual palaeography involving other languages. Also, because the tasks were completed on the Open Rev platform, the students were able to read their colleagues' comments and take suggestions from their peers, just as they did when first engaging with the note forms.

Using Open Rev allowed the students to communicate with one another about the course's subject matter outside of the classroom; in the Open Rev platform, the students could respond to one another's comments in order to answer questions posed, make suggestions, or question another student's interpretation of a note form or transcription of a word. In one particular instance, two students (Student 11 and Student 13) disagreed on a Middle English letter form. Figure 153 shows Student 11's original comment, which started the discussion.

Figure 153: Student comment on Open Rev, with the student's transcription of the text of *Stabat iuxta Christi crucem/Stand wel moder under rode,* from *GB-Cjc* E.8, f.106v.

Student 11 is forthright from the beginning of the comment, admits to struggling with Middle English—particularly in comparison with Latin—and offers an historical interpretation of why Latin might be easier to engage with for speakers and readers of modern English. After offering a critique of the scribal technique (or lack thereof, according to Student 11—another indication of the students' readiness to characterise the material in a negative way) used for both text and music, Student 11 notes that the 'x' which denotes 'christi' in the Latin line obscures the 'eth' [ð] in 'mother'. Figure 154 shows Student 13's response to this comment, Student 11's reply to Student 13, and my final comment at the end.

295
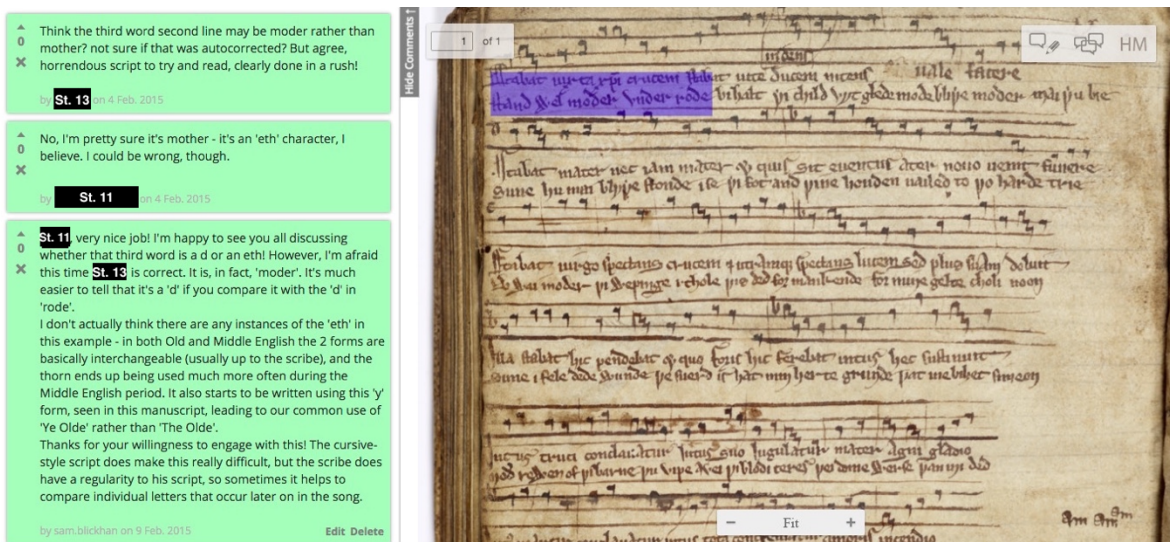
Figure 154: Student responses to comment on Open Rev, discussing the text of *Stabat iuxta Christi crucem/Stand wel moder under rode, from GB-Cjc* E.8, f.106v.

As shown in Figure 154, Student 13 has disagreed with Student 11's interpretation of the word in question as 'mother', and suggests that the word should actually be read as 'moder', even wondering if Student 11 had originally typed 'moder' and been a victim of auto-correct via their computer or smart phone. Student 11 defends the use of 'mother', adding that the form that Student 13 has interpreted as a 'd' is (according to Student 11) an 'eth'.

This exchange is a great example of independent student discourse outside the classroom, but it also shows how Open Rev sometimes requires class discussion to supplement such online discourse. It would have been preferable for Student 13 to have offered more reasoning behind their suggestion that the form was a 'd', rather than an 'eth', and this is the type of reasoning that could effectively be drawn out in discussion (and was indeed discussed in class, as the next paragraph will show). Student 11's thought process is evident in the comment about the tail of the 'x' supposedly obscuring the 'eth'. Actually, it is the tail of the 'x' that is causing Student 11 to believe the form is an 'eth', rather than a 'd'. In my response to this conversation, I noted that it might have been helpful for Student 11 to compare this form to a different letter 'd', if the form was causing some confusion. That there

296

was not another 'eth' anywhere else in the text to use for comparison was also an indication that the 'eth' may not have been the best choice available.

After the students completed each week's task, they discussed the Open Rev comments in class at the start of the following week's lecture.[288] The 'eth' vs. 'd' example from Figures 153 and 154 made for a very interesting class discussion. This was an instance where a previously held awareness of forms used in early English languages had caused Student 11 to misinterpret a form and, ironically, to interpret a word in a modern English spelling due to use of a medieval grapheme. Had the student been unaware of the existence of the 'eth', they may not have encountered this problem. In a sense it is indicative of how deeply ingrained modern writing systems are in the brains of most users of language, both text-based and musical; even though Student 11 was using prior knowledge of early written English letter-forms to supplement the attempted transcription, the recognition of the modern word 'mother' still influenced the interpretation. During the classroom discussion the following week, I suggested to the class that, while prior knowledge and external information is always valuable when working with unfamiliar texts, sometimes an examination of the form in a comparative visual context can be important, too. Supplemental information can inform a reading in positive ways, but in certain cases it is more helpful to simply engage with the source.

Using Open Rev allowed the students of MU3423 to work with primary source material in a collaborative environment, and receive regular feedback from course supervisors on their weekly progress (to be discussed further in section 4.3). My only frustration with Open Rev was the platform's limitation on file upload size (mentioned earlier in this chapter), which at times necessitated that files be re-sized, resulting in slightly pixelated images when fully enlarged. However, the benefits to using this tool far outweigh the drawbacks. Because all of

---

[288] The class discussions of Open Rev tasks will be discussed in greater detail in section 4.2.iii.

the content in Open Rev is based around individual uploads, it can be used for a variety of topics, and the easily navigated framework ensures that all students will be able to complete the required tasks, no matter what level of experience they have working with technology.

Student Blogs

As well as having the Open Rev tasks to complete outside of the classroom, the students were also required to complete six short blog posts. The blogs were used for two main purposes: for students to complete writing tasks which helped them prepare for the following week's lecture and discussion, and for the students to use as a guide to their educational process; a tool for reflection and introspective examination of their own learning.[289] The students would post their written work as a response to the question on the class Moodle forum, continuing with the course's method of allowing student discourse to be public (at least to those enrolled in the course) and interactive. The only time that the students' written responses were not public is when they were assigned a reflection about their assessments; because summative assessments are governed by College rules preventing peer collusion, these reflections— revealing details from the students' work in progress—were submitted directly to the course supervisors (the pre-assessment reflections will be discussed further in section 4.3).

The blogs were hosted on the learning management system (LMS) Moodle, which Royal Holloway uses as a College-wide e-learning tool and method for online delivery of course content. The blog function on the Moodle platform is pre-designed, and though the platform does offer certain choices about the blog management (such as visibility options), the students were able to control the content, but not the layout or design, of their posts. While the blog format does include a social element (specifically the idea that a student's work is in a public—rather than private—format), the blogs in MU3423 were intended to be

---

[289] Please see Appendix II for a full list of blog assignments (organised by week).

individual reflections that complemented the collaborative focus of the Open Rev work. The blogs provided a means for the students to easily deliver their responses to questions posed on the Moodle forum without having to go to a physical location or hand anything in; this was designed to supplement the online community being developed with the Open Rev tasks, and also to encourage the students to make use of the other resources available on the Moodle site. Because the blogs were hosted on Moodle, the students had to access the course page in order to post their responses to the prompts, and therefore became accustomed to logging on to the course site to add their input, not just to receive information about the course. When students were assigned a blog for a particular week, they could enter into the Moodle forum via a link available in that week's section of the course home page. Figure 155 shows how the list of posts appear underneath the topic, with the most recent posts at the top of the page.
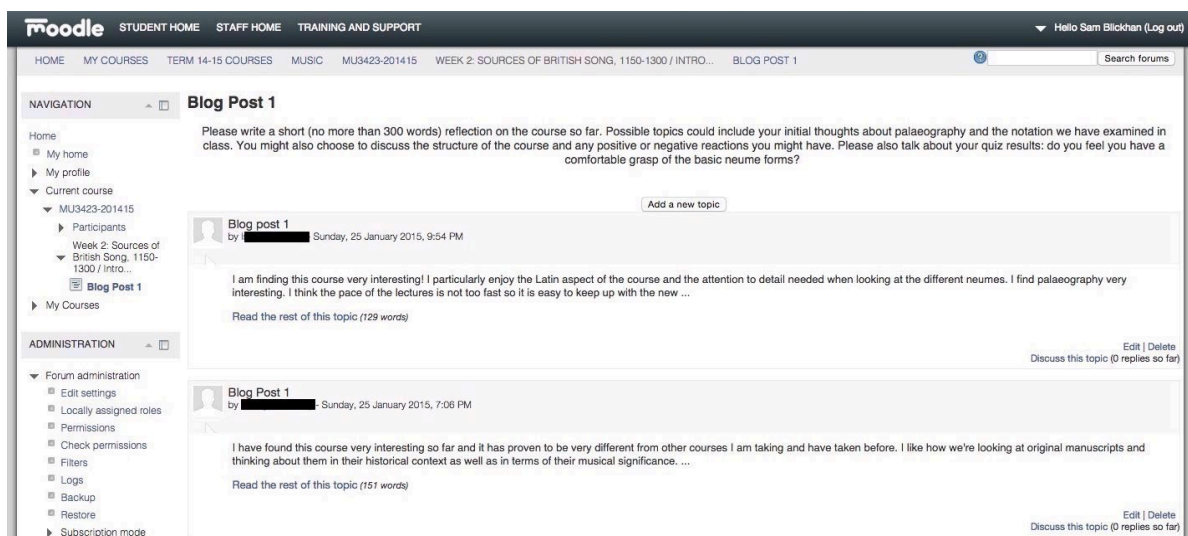
Figure 155: The Moodle forum page showing the first blog assignment for MU3423, with student responses.

Technically, the written responses were not 'blogs' in a traditional sense: the posts were not available to anyone outside the students enrolled in the Moodle site. However, there were several reasons that these pieces of writing were assigned to the students in this particular format. The first reason was so each student could have a record of their perception of their

individual progress; a self-evaluative document that stretches over the entirety of the course. This creates a window into the process of learning; students can tell what they had the most trouble with during the course, and have a record of how they adapted their learning process in order to solve difficult problems or better understand challenging concepts. The reason for making these posts public (at least to the other members of the course) was so that the students could see what topics their peers were having trouble with, and how the other students faced these specific challenges. For example, in the first few weeks of the course, several students wrote about how they were struggling to remember the names of the neume forms. They noted that they had used the quizzes as practice, and that their repeated quiz attempts had been much more successful than their initial endeavours. Some of the students were more willing than others to delve into content. For example, in Figure 156, a student discusses their interpretation of liquescent neume forms.
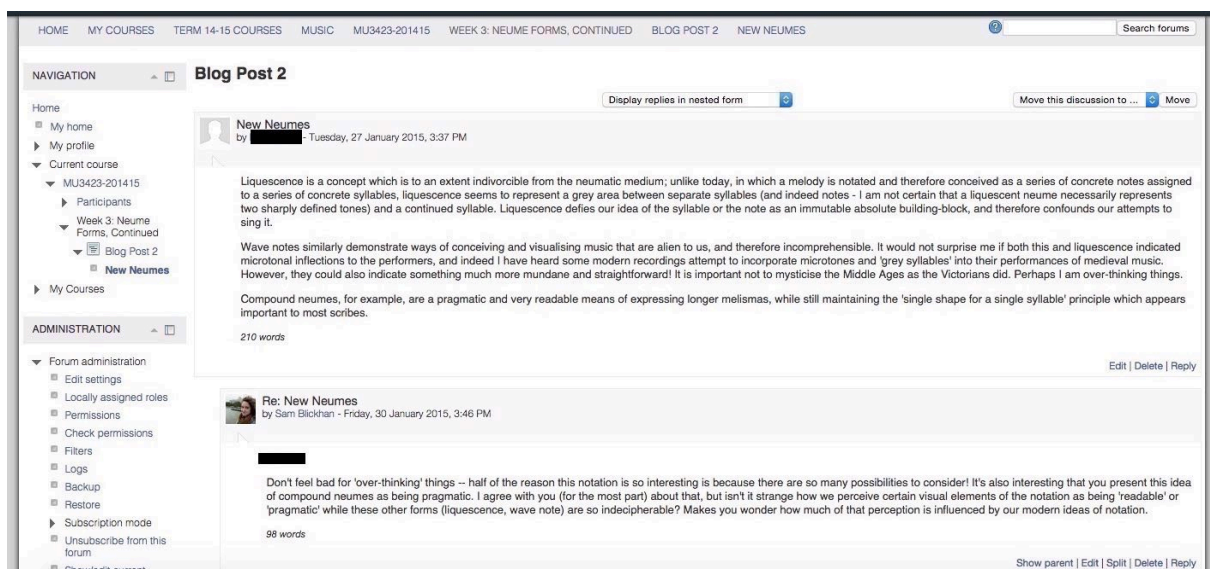
Figure 156: Student 11's blog post about neume forms, from Week 3 of MU3423.

In this blog post, Student 11 reveals quite a lot about the thought process involved in consideration of liquescent neume forms and the wave note, noting various possibilities for interpretation and performance, and even a critique of historical methods of interpretation.

The way that students process new information is not frequently discussed in class, so to have access to the individual thoughts and perceptions of each student in a class can be very helpful for teachers. For example, because of this student's comment on possibly 'over-thinking things', I wrote a response encouraging the student to continue down this line of thinking and suggesting some other topics to consider.

Within their usage in MU3423, I found that the blogs helped the students to develop a critical voice within a limited space. Most of the posts required the students to write fewer than 300 words, and many of the students limited their posts to between 150 and 200 words. The short format of the assignments encouraged students to focus on the post's content, and not worry about including long-form prose techniques such as introduction or conclusion. Students who were accustomed to writing essays had to re-examine their approach to the process of collecting and expressing their thoughts, a process which was intended to help them develop a broad spectrum of writing skills. However, one trend that developed quite quickly was that students who submitted posts closer to the deadline were more likely to follow the writing style set by students who had already submitted their posts. For example, in the second blog post, the first student to respond began the post with the statement, 'I found this first lecture after our OpenRev homework really helpful and insightful'. Of the following blog posts that week, over half of the remaining students began their posts with 'I found' statements. In the fourth blog post, the majority of the students began their responses with the same statement. This is not to say there is anything inherently wrong with using 'I found' to start a personal reflection, it just seems that, over MU3423's ten-week run, many of the students had a strong impulse to follow a set writing style, whether this was a conscious choice made by the students or not. It is unsurprising that they would want to follow a formula; many of the students had never been asked to write a blog for a course before, and it follows that they would want some sort of assurance that they were 'correctly' completing the

assignment. In this case, that feeling of validation may have come from imitating the short-form writing style of their peers.

Although the imitation of language found in the later blog posts might at first glance seem to be clear evidence of the students reading and engaging with each others' posts, in fact, it may have been the case that they were often not reading beyond the first few sentences (which is the amount shown in the preview, like the two examples from Figure 155). For example, the fifth blog post had a longer length requirement: a minimum of 300 words, rather than using that amount as the maximum. Because of the length, a preview of each post would not appear when a user entered the forum; to read the blog posts, students would have needed to actively click on individual posts to see what was written.[290]

After evaluating the use of blogs in MU3423, I believe that it would be more helpful for the students if the course had produced an actual blog, accessible by the public. The reflective questions could still be used, but I think the benefit of a collaborative publication, available for anyone to read, would encourage the students to take greater ownership of their ideas. There were students who were confident making assertions in their comments on Open Rev, but seemed to lose their confident writing tone when it came to the summative assessments, most likely due to nerves. Although the goal of encouraging students to produce critical writing in a shorter, less formal manner did seem to be accomplished overall, I believe a public class blog may have been a better choice. A public blog would have similarly encouraged students to express their thoughts concisely and confidently, but with the knowledge that, while the content would not be marked, it could be read by a wider audience than their peers, and also include the possibility of developing a network of readers who may or may not leave comments (including questions and feedback).

---

[290] Unfortunately, at the time of this course, Moodle did not offer an option to track viewing data for individual blog posts.

Quizzes

In the second and third weeks of the course, the students were assigned two quizzes, to be completed via the Moodle course site. The quizzes were a mixture of multiple choice and short answer questions intended to test how well the students could identify the different neume forms. The quizzes were not included as part of the students' mark for the course; they were purely for practice and self-evaluation. The information covered in the quizzes was delivered over two lectures. The first lecture covered the simple neume forms: virga, punctum, clivis, pes, scandicus, climacus, English conjunctura, extended clivis, torculus, and porrectus. The first quiz only covered these basic forms. The following lecture moved on to compound neumes and liquescence, and the second quiz covered these new forms as well as the basic forms from the previous week.

The quizzes were designed to encourage the students to think about these forms in both their visual and aural incarnations. The visual recognition element, in which students were shown individual neume forms extracted from manuscript images, was supported by questions asking students to identify a specific form (either choosing from a list of options or writing the answer from memory), while the aural recognition came from audio-based questions in which the students would hear a solo voice singing a series of pitches, and were then similarly asked to either choose the best option from a list of forms, or to write the name of the form as a short answer. Figure 157 shows an example of a visually-oriented multiple-choice question from the first quiz.

Figure 157: Sample practice question: Moodle quiz 1, multiple choice (visual).

The question encourages students to associate the form with its Latin name of virga (option a, above), rather than attempting to translate the form into a modern equivalent. The multiple-choice option gives students the opportunity to recognise the correct name, while short answer questions like Figure 158 (shown below) challenge the students' memory of the Latin terms.
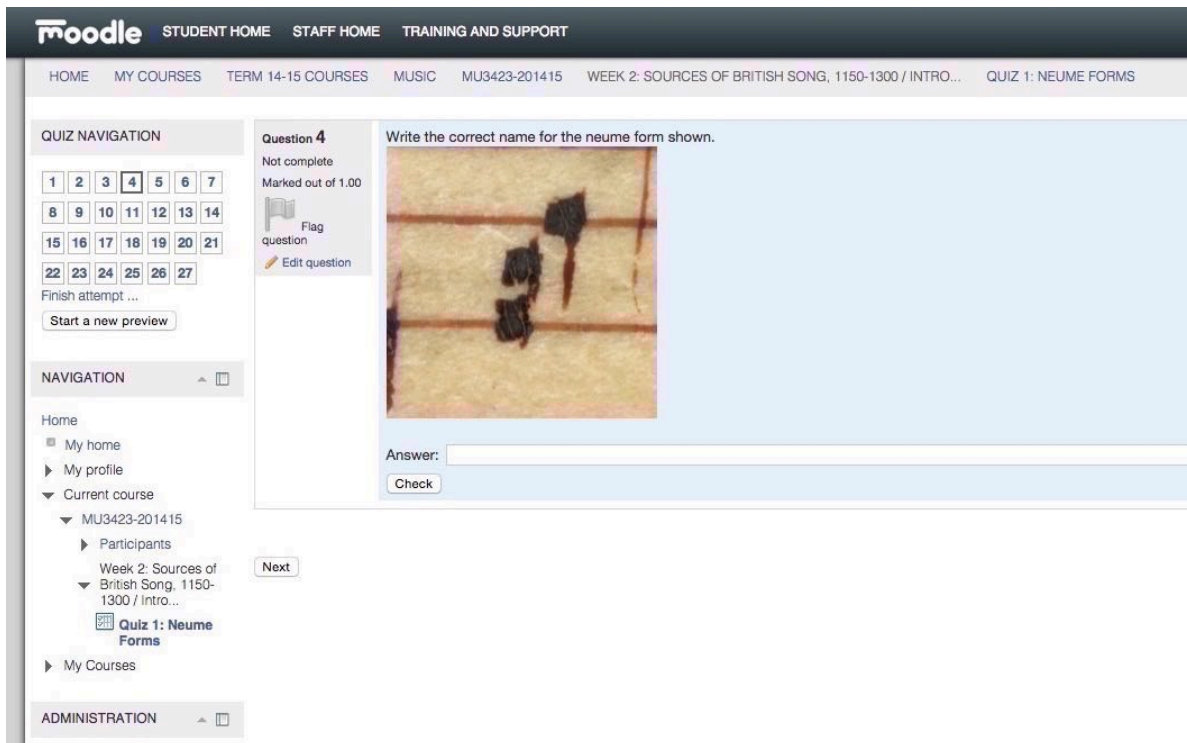
Figure 158: Sample practice question: Moodle quiz 1, short answer (visual).

Like the questions with visual examples, the questions with audio examples also had multiple question formats, where students had to make a choice, or write an answer, based on an audio file. I recorded the (sung) audio examples myself, singing the pitches to a simple [ɑː] vowel. Certain examples, de-contextualised as they were, did not suit themselves to having a single answer, and the quiz dealt with that as necessary. For example, Figure 159 shows the multiple choice options for an audio example of three notes sung in descending order.
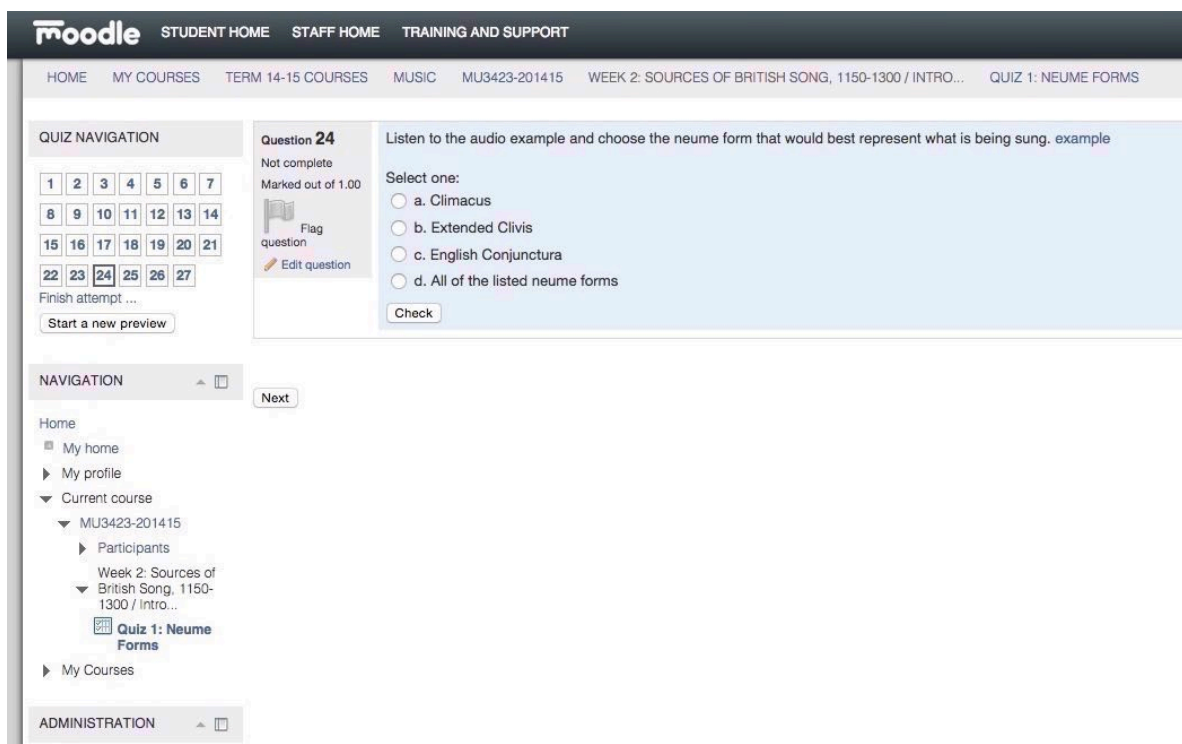
Figure 159: Sample practice question: Moodle quiz 1, multiple choice (audio).

Because the three-note descending form can be represented visually in the three different ways (as discussed in section 2.2.v of this thesis), I made sure that the quiz options reflected all of the possible visual incarnations of this particular sound. The correct answer to this question was 'd. All of the listed neume forms', because a single answer of 'climacus', for example, would not necessarily have been correct; it is impossible to know which form is actually being performed without the visual context. This was not the only type of question that encouraged students to think about the context of a form before making assumptions about its function: the second quiz included a question that similarly engaged students with the idea that notation from this time period cannot be de-contextualised as easily as modern notation, shown below in Figure 160.
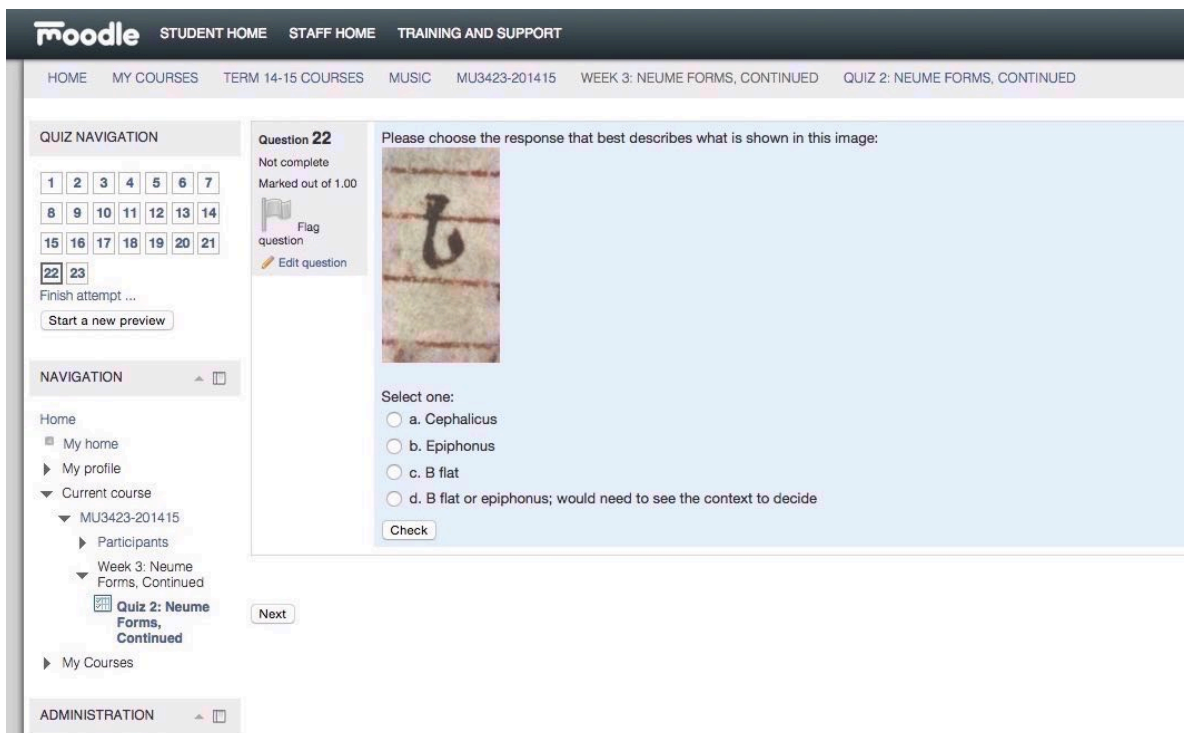
Figure 160: Sample practice question, Moodle quiz 2, multiple choice (visual).

The possible responses to the question include the epiphonus and a B flat clef, each of which could feasibly be this form; the height of the left side of the form might indicate that this is a clef, rather than an epiphonus, but the round body of the b is not fully closed, which leaves the possibility that this could be either form. Certainly, once students learn more about the notation of this time period, they will develop ways in which to determine the identity of tricky forms such as this, but any method of comparison a student might use (either internal comparison, examining the scribe's other forms, or external comparison, placing this form against similar styles during this time period) will require contextualisation. Therefore, 'd' is the correct answer.

The quizzes were intended to encourage students to approach the forms as signifiers, rather than as 'old versions' of modern notational forms, the idea being that if students learn to think of early notational forms as a part of an individual writing system, they will be less likely to attempt to compare it with modern systems of notation. To relate this idea to the concepts discussed in section 1.3.iii of this thesis, the students were encouraged to think of

307

the notational forms used in the quizzes as being representative of individual instances of

sound, which stems from Kurkela's idea of 'basic expressions'. Within the quizzes, a note-

form did not translate directly to the pitches being written, but to the more abstract <u>function</u>

of the form, such as 'two notes descending' or 'three notes ascending'. As noted above, this

'abstraction' was also called to the attention of the students in regard to its limitations; while

abstraction can be useful for learning the forms and becoming a fluent reader of the notation,

context is ultimately required for more substantial interpretation and analysis.

Other Digital Resources

Besides Open Rev and Moodle, the students regularly used other digital resources, both in the

classroom and for independent work. Because of the manuscript-based nature of the course,

the majority of digital resources used were databases containing images of music notation

from medieval sources. The main databases used were the British Library Digitised

Manuscripts database; Gallica, the digital library of the national library of France; and the

Digital Image Archive of Medieval Music (henceforth DIAMM).[291]

Of the three databases listed above, DIAMM was used least frequently. The site often

did not work, or would not load properly, so I did not feel it was fair to assign any out-of-

class work that required the students to use DIAMM.[292] Instead, I encouraged them to use the

site to access images of related manuscripts or look up bibliographical information. DIAMM

was also sometimes used during lectures to show manuscript images.[293]

The British Library Digitised Manuscripts database, while used for the students'

general research, was specifically used in-class for a group examination of a single

---

[291] http://www.bl.uk/manuscripts; gallica.bnf.fr; www.diamm.ac.uk.
[292] This was later discovered to be an issue with the RHUL internet firewall.
[293] Though it was used less frequently than intended as an independent tool for students, the in-class use was regular enough to merit inclusion in this section.

manuscript, *GB-Lbl* Harley 978, which is available to view in its entirety on the British Library Digitised Manuscripts site.[294] In the sixth week of the course, the students were instructed to choose one of the songs from *GB-Lbl* Harley 978 to research for the following week's class. The assignment given to the students was as follows:

> Pick **one** of the songs from Harley 978 (images available via the British Library Digitised Manuscripts) and research it for next week. Try not to examine the other songs in the manuscript. Find recordings, editions and articles (if available). Is there anything in particular about the song you've chosen that makes it stand out? What have researchers typically focused on when writing about this song? Songs will be discussed next week in class; you should each be prepared to discuss your research. Remember: class will be held in the Computer Lab.

The purpose of this assignment was for the students to experience what it is like to study a song outside the context of its source, and then compare it to the act of studying the manuscript as a whole. During the following week's class, the students presented their chosen songs to one another. Each student had access to a computer, where they could see the individual folios being discussed. In their presentations, the students typically began with presenting whatever scholarly information they could find, allowing the existing material to frame their own interpretations. With the exception of *Sumer is icumen in*, scholarly material related to the individual songs of Harley 978 is not abundant; most academic references to these songs are framed within discussions of the contents of the manuscript as a whole. The students had some slight difficulty with the lack of secondary source material—it was one of

---

[294] Harley MS 978, *BLDM*, http://www.bl.uk/manuscripts/FullDisplay.aspx?ref=Harley_MS_978, accessed 14 March 2016.

the few complaints in the course feedback—and therefore the attempts to frame their

observations within an existing scholarly narrative made the assignment quite a bit more

difficult than a traditional research presentation. What was most striking about the students'

presentations on *GB-Lbl* Harley 978, however, was the distinct change in tone between these

presentations and the Open Rev discussions. In the context of the Open Rev work, the

students were confident about their assertions: they put forth hypotheses about the songs

being discussed, and backed up their claims with information gleaned from palaeographic

and codicological observation. Yet, the moment that the students' interpretations had to stand

alongside existing scholarship, they became increasingly reluctant to put forward their

hypotheses, and instead focused more on visual interpretation, such as describing the scribal

hand or the overall appearance of the manuscript page. The existence of secondary source

material, even if only available in limited quantities, immediately resulted in a shift towards

descriptive interpretation; they were simply less willing to say what they thought.

The students used Gallica in a similar manner to the way that the British Library site

was incorporated into the class: in the computer lab, the students accessed images of *F-Pn* fr.

25408 through the Gallica platform.[295] As a group, they examined the whole manuscript,

paying special attention to the songs included at the end. However, because the images on

Gallica are microfilm scans, rather than digital images in colour, the students experienced

what it was like to be misled by technology. They were not initially told that the manuscript

was not written in black and white, and once they learned the truth, there was a group

discussion on how one might go about determining whether certain parts of a manuscript

image are different colours even when the only available resource is monochromatic (e.g. Are

---

[295] http://gallica.bnf.fr/ark:/12148/btv1b9063366p

any specific letters a different shade of grey/black than the others in this image? Are there

places where there is more likely to be colour in a manuscript, based on your knowledge of

other sources? And so forth). Through this process, the students not only learned about the

songs contained in *F-Pn* fr. 25408, but how to critically interpret digital images of a

manuscript.

While not used in the classroom, students were also given a list of resources which

were intended to help with textual palaeography. This list included Harvard University's

'How to Read Medieval Handwriting' resource; Senate House Library's online Palaeography

course, 'InScribe'; the smartphone app 'Medieval Handwriting', developed at the Institute for

Medieval Studies at the University of Leeds; and Stanford University's online course

'Digging Deeper: Making Manuscripts', which ran from January to March, 2015, the same

time that MU3423 was being held.[296] All of these resources were available to the students

free of charge.

4.2.iii: Course Structure

The weekly structure of the classroom sessions consisted of a forum and discussion based

around an independent assignment involving a digital manuscript image, hosted on Open Rev

(discussed at length in section 4.2.ii).[297] Each student would come to the front of the class and

discuss the comment they had previously posted on the site as a response to the assigned

---

[296] 'How to Read Medieval Handwriting (Palaeography)', Harvard University, http://isites.harvard.edu/fs/docs/icb.topic453618.files/Central/editions/paleo.html; 'InScribe: Palaeography Learning Materials', Institute of Historical Research, http://www.history.ac.uk/research-training/courses/online-palaeography; 'Medieval Handwriting (App)', University of Leeds and agbooth.com, http://www.agbooth.com/apps/#medieval; 'Digging Deeper: Making Manuscripts', Stanford University, https://lagunita.stanford.edu/courses/English/DiggingDeeper1/Winter2015/about. All sites accessed 14 March 2016.
[297] For a full list of materials related to MU3423, please see Appendix II of this thesis.

Open Rev task. These presentations were typically made in small groups, alongside other students who had chosen to comment on the same song, or whose contributions were part of the same larger debate in regard to that week's assignment. After the Open Rev rundown, which typically lasted about 45 minutes, there would be a short lecture and discussion (about 40 minutes and 20 minutes, respectively).

Between the initial student comments on Open Rev and the discussion session the following week, I wrote short responses to each of the comments individually. In my responses I answered questions, pointed out possible errors in identification, and suggested methods through which students might independently resolve difficult questions about the weekly tasks.[298] I also commented on things the students had written which I found particularly interesting or helpful, and at times asked students to be prepared to unpack certain ideas in the discussion at the start of the following lecture. This process allowed the students to have a period of time to reflect on, and possibly revise if necessary, their work in preparation for the Open Rev discussions in the classroom. By the time of the class discussion, the students had received tutor review (from my own comments), and in some cases peer review as well (in the form of other students responding to Open Rev comments).

The Open Rev discussions were designed to bridge the gap between the independent tasks and the classroom work. The students were not giving formal presentations, but rather contributing to a public discussion of the work they had completed during the week. This allowed the students to approach the task of speaking in front of a group in a relaxed and informal manner. As noted above, the presentations were based on a variety of comment criteria. Sometimes the students would be divided into groups based around the song on which each student chose to comment; sometimes students would be grouped together because they had similar problems; sometimes students would be grouped together because

---

[298] As shown in several examples in section 4.2.ii.

they had contrasting approaches to the same challenge. I was especially interested in hearing

about the students' varying approaches to the subject matter, and I made a point to ask

students specific questions about their Open Rev work. For example, in Figure 161, Student

16 discusses their approach to determining the language in which the text of a song was

written.
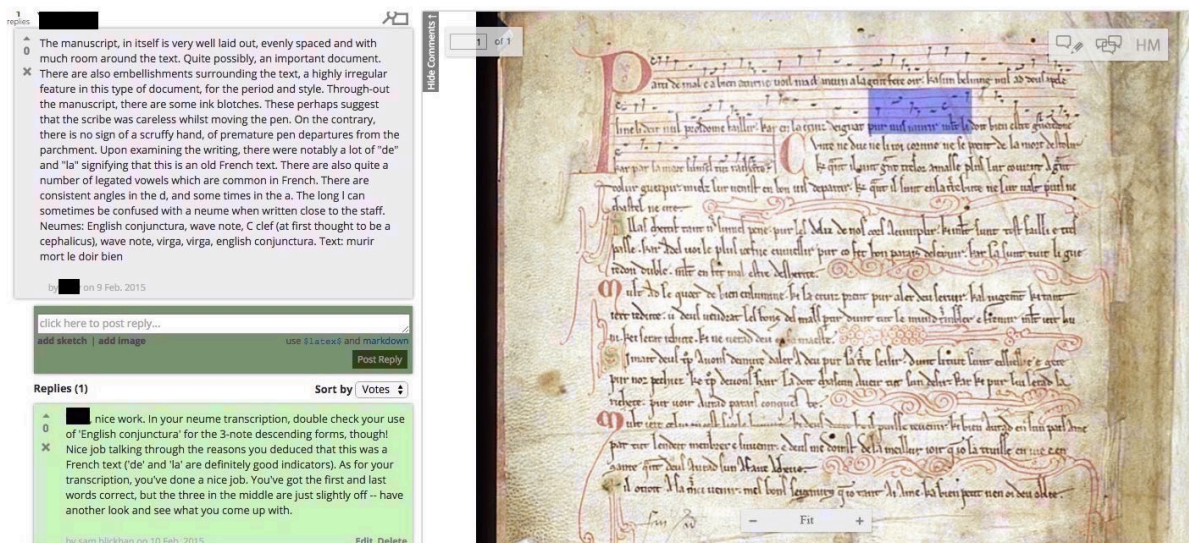
Figure 161: Open Rev comment from Student 16 about the process of determining language in *Parti de mal*, from *GB-Lbl* Harley 1717, f.251v.

Student 16 notes that the text of *Parti de mal* contains the words 'de' and 'la', which are

signifiers of this song's text being in French. In the Open Rev discussions, I often asked

students to expand on their process of deciphering language when working with manuscripts.

This allowed the other students to hear about varying approaches to textual interpretation, and

also helped them to develop the basic skills necessary to recognise and differentiate between

medieval Latin, Middle English, and Anglo-Norman French.

This student-centred approach to interpretation did not only apply to text. If students

had a particularly successful identification of note-forms early on in the course, I often asked

them to talk through their process in the Open Rev discussion. This allowed the other

students to not only witness an example of successful manuscript interpretation, but, similarly

to the textual interpretation, also gave them insight into the learning process or processes that allowed that particular student to be successful. Through this practice, the students learned important information relating to the content of the course (medieval language, medieval song, medieval notation), and also information about forming successful study habits and critical thinking skills.

The lecture component of the course was delivered by Helen Deeming. I was involved in pre-lecture discussions about the content of the lecture, especially in regard to how the weekly tasks would supplement the material delivered in each lecture. The lectures offered ample opportunity for student questions, and group discussion, and often included singing activities, where students would break into small groups and sing through examples from the original notation, then discuss the aspects of this activity that they found particularly challenging. The singing exercises were not introduced as a skill on which the students would be examined, but rather as a skill that they could use individually to complement the process of research. For example, to return to Figure 152, discussed previously in section 4.2.ii, Student 2 may have found it helpful to sing through the piece.
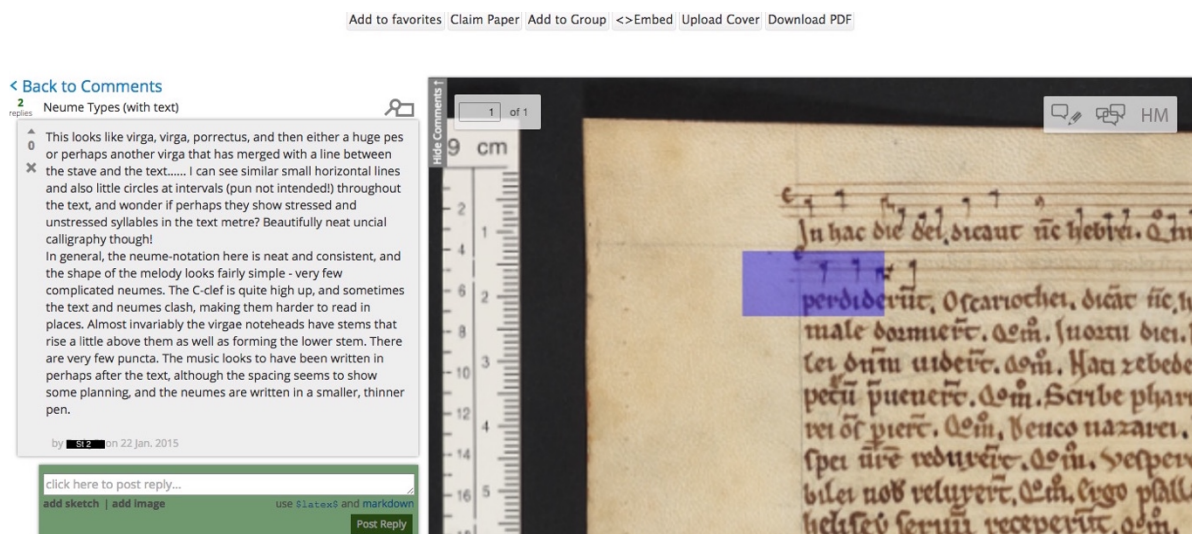
Figure 152: Student comment in Open Rev, week 2, discussing *In hac die dei*, from *GB-Ob* Bodley 937, f.446v (originally shown in section 4.2.ii).

In this example, the student is unsure if the marking over perdideRUNT is a 'huge pes', or a virga that has run into some sort of non-musical marking (in this case, it is the latter). Though the student eventually worked the problem out, and was aided by the eventual introduction of the concept of marks of abbreviation, it may have been easier to deduce that this was unlikely to be a 'huge pes' simply by singing or humming through the melody. The example is mostly stepwise, so two large leaps—possibly down a fourth and up a fifth, depending where the student believed that the lower note of the 'huge pes' may have fallen—in the middle of a mostly-stepwise melody would have been a clear indication that something was amiss in their interpretation of these forms.

4.3: Assessment and Evaluation

In this final section, I will first discuss the summative assignments that were given to the students of MU3423, and how they fit into the overall structure of the course. Then I will discuss the various systems of feedback used within the weekly structure of the course, and what they offered to the course as a whole.

4.3.i: Summative Assignments

In this thesis, the focus on the assessments used in MU3423 will not function as a means of determining the success of this particular methodology; that is, the final marks given will not play a role in evaluating MU3423's inaugural run. Rather, this section will focus on the two pieces of coursework as they were presented during the course, how the assignments were initially developed, and the resulting work produced by the students.

When planning the course, the variety of possible methods of student assessment was a major consideration. It seemed unfair to the students if the course required an entirely language-based (i.e. written) assessment when the course itself touted the benefits of a learning process that was not heavily based around 'traditional' skills of research and academic writing, and the multimedia format of the course invited the exploration of non-traditional forms of assessment. The Royal Holloway Music Department has a specific format for module assessment, to be marked with a specific rubric, and so it was important that the assessment for MU3423 fit into the existing structure. In addition to the existing departmental requirements, the module was aimed at second- and third-year students, which meant that the students would already be accustomed to the current departmental assessment method.

Therefore, to satisfy the departmental assessment standard and to also allow the students a modicum of continuity in their own educational assessment methods, assessments

in the form of two pieces of written coursework were chosen for MU3423, both involving close analysis of source material. The first assignment was to write a description and analysis of the notation of *Alma redemptoris mater*, from *GB-Otc* 34.[299] This piece was chosen specifically because it is not included in *MB* 95, and therefore the students would not have access to an edited version or editorial commentary on the song. The second assignment was similar (to write a description and analysis), but the students were given four groups of songs to choose from. The first two options were different songs from the same manuscript, and students were asked to compare the notation, as well as consider how the songs related to the 'wider manuscript environment'. The second two options involved concordances between manuscripts: students were asked to examine the notation, compare any variance between the sources, and also to consider how the notational variations might relate to the nature of the different manuscripts.

As discussed in Chapter One (and in the introduction to this chapter), one of the difficulties of a semiotic approach to musical notation involves the language used to discuss notation in its function as signifier: divorcing the visual symbol from the referent. Though the assessments were in a written format, the guidelines were slightly more relaxed (in terms of structure) than for a typical essay. The content of the assignments meant that the students would need to describe the source material (and, indeed, writing a description of the notation used was a major component of both assignments), but the students were not constrained to a prose-only format. The students regularly engaged with the language of notation (both spoken and written) in their work and in classroom discussions, but in all cases the result was a combination of language and visual media (in the form of digital images); the language used in the classroom and in the weekly tasks had a direct link with the images being discussed, either because of the physical presence of the image projected on the classroom

---

[299] The full description of this piece of coursework can be found in Appendix II of this thesis.

screen during the discussion, or the proximity of a student's comment to an image in the Open Rev platform on a computer screen. Without the presence of the images, the language would be much less comprehensible. Therefore, the students were encouraged to integrate digital images into their written assessments whenever possible.

Using images in academic writing is not a new concept, but the availability of digital images does make it more convenient than ever to insert image references into a piece of writing, as well as to manipulate images to the best possible effect. For example, students were encouraged to place non-adjacent notational extracts next to one another to facilitate comparison, and to use textual or diagrammatic annotations to highlight certain points. In the first written assignment, the students used an average of 17 manuscript image examples per assignment. The maximum word count for the assessment was 1750, which equals about one image per 100 words written. The highest number of images used in a single assignment was 33, and the lowest was four. For the second assignment, the students used an average of 20 manuscript image examples per assignment. This is a higher average than the first assignment, however the maximum word count for the second assignment was 2750, meaning that the average image-to-word ratio was slightly lower, at one image per 138 words written.

The process of inserting images allowed students to do several things outside the scope of a traditional summative essay. For example, students were able to reserve their word count for analysis and explication, rather than description: instead of describing a specific notational form or other visual elements taken from the manuscript, students could insert an image for reference and continue with content-based language: analysis, critique, reflection. In the first assignment, Student 4 chose to compare side-by-side images of a prick-point (in the left-hand margin of a recto folio) and stave-lines drawn from the same page. The student used these images to support their assertion that the pricking system belongs to the material

318

on the verso side of the folio, because the text- and stave-lines are not aligned with either the pricking or dry-point ruling used.

Though Student 4 evidently felt confident using terms like 'dry-point ruling' and discussing more traditional codicological and palaeographic elements, some students chose to specifically discuss more technological aspects of the available material. In the first assignment, Student 9 used a screen capture of an image zoomed in very closely to show how individual pixels can help determine specific points at which letter-forms overlap with a stave line. Student 9 used this example to show how they had come to the conclusion that the stave lines must have been drawn before the text was added. Student 9's use of technology shows how, by using such referential images, the students are not beholden to a set, academic language; they were free to use non-traditional methods to support their assertions.

In the second assignment, students were given the opportunity to use audio examples to support their arguments. Incorporating audio into a written assessment can allow students to engage in the process of analysis using a combined aural and visual method that is, in some ways, analogous to the collective oral and visual culture during which these songs were written down. In this sense, the understanding of the learner is transferred to the understanding of the educator via both sound and writing. This process is represented as a flow chart in Figure 162.

$$s(S)d$$
$$\nearrow \quad + \quad \searrow$$
$$U_L \rightarrow v(S)d \rightarrow U_E$$
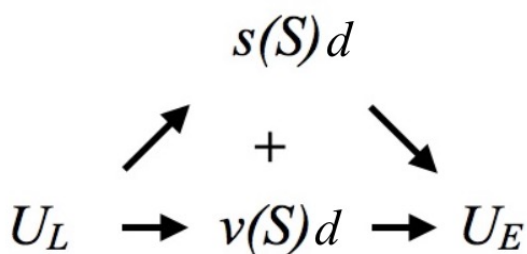
Figure 162: Flow chart representing learner's use of audio and visual media to communicate understanding to the educator.

In Figure 162, the understanding of the learner (the student's ideas, which he or she wishes to communicate through the assignment) is represented by U_L. The learner uses both visual and sonic representation of the source to communicate that understanding. The visual and sonic elements are represented in the flow chart by *v(S)d* and *s(S)d*, respectively, which acknowledge the digital format of each of the types of media used in the assignment (hence, *d*). The sonic and visual elements combine with one another, as well as being transmitted individually, to inform the understanding of the educator (the process of reading and listening to the assignment).

Three of the 17 students chose to include audio examples, all sung, varying between five and six total audio clips. The audio examples varied in length; for example, Student 5's audio examples ranged between 15 and 49 seconds in length, while Student 3 chose to use mostly short clips, between four and nine seconds, with the exception of one clip that lasted 22 seconds. The length of the clips shows that students were using the audio examples for different purposes: Student 3's short clips were illustrating the aural aspect of specific notational forms, while Student 5's examples were included to illustrate how notational variations might change the larger melodic aspects (at the level of musical phrase, and larger) of a song.

Student 10 used the audio examples to illustrate the ways in which variation in notation may affect rhythm. For example, in a piece with a passage of four descending notes, one scribe had written two clives, while the other scribe had used a climacus plus a virga. Student 10 suggested that this may indicate rhythmic variation, and used the audio examples to illustrate the supposed rhythmic changes. Though this interpretation of the notation may not be entirely supported by research in regard to this particular notation, it does show how students can become attached to visual cues from modern notation, and retroactively apply

them to early written music: in this case, interpreting virgae as crotchets, clives as quavers, and a climacus as a modern triplet form.

Before each assignment was due, students had the opportunity to have individual tutorials about their assignments. In each case, they were asked to submit a private blog post before the tutorial, in which they were asked to reflect on their own sense of preparation for the assignment, and include any questions they had about specific elements of their assignments that they wanted to discuss in the tutorials. These tutorials will be discussed further in the next section (4.3.iii).

The assignments and the course activities were intended to complement one another. The Open Rev tasks were designed to be miniature versions of the types of descriptive and analytical material the students were expected to include in their coursework, and for which they received weekly feedback and were able to workshop in the context of a class discussion. Students who did not receive ideal marks for the first piece of coursework were encouraged to redouble their efforts on the Open Rev tasks in order to practise these skills for use in the second piece of coursework. In this way, the digital tools incorporated into the class were not merely being used to support existing pedagogic practice, but they were allowing students to practise a methodology that would be transferable to their graded work in the course.

4.3.ii: Feedback

Although the students in MU3423 were only required to complete two assignments for which they received 'official' feedback (using a coursework feedback form which meets the departmental standard[300]), opportunities to regularly give and receive feedback were built into

---

[300] The Department of Music at Royal Holloway uses a standard feedback form for all coursework, which all students are required to attach as a coversheet for all work submitted.

the structure of the course. This section will examine feedback as a way for students and teachers to communicate during a course, and the ways in which it was used to support the research methods which inspired the creation of MU3423.

There were several types of feedback used in MU3423. The students were given regular opportunities to give feedback to the course supervisors about the course itself, but these were not presented as official 'course feedback'. Instead, the feedback was included in activities which encouraged students to speak about their experiences in the course so far, and to evaluate their own process as well as offering opinions about the structure, design, and content of the course.

Aside from the retroactive, 'official' student feedback given after the final lecture, the most formal option for students to give course feedback was in the blog posts, discussed above in section 4.2.ii. The blogs allowed students to directly offer a critical interpretation of the course itself alongside their self-evaluations in regard to engaging with the content. All of the blog topics required the students to include some form of feedback, either about their own learning practice, or about their experience with the course so far. The blogs were not anonymous, so it is certainly possible that some students did not feel they could be as forthright as they may have chosen to be in an anonymous setting, but for the most part the feedback given in the public blogs was comparable to the feedback received in the anonymous forms at the end of the course.

The students also received weekly feedback on their work through the Open Rev tasks. As noted in section 4.2.ii, I wrote a response to every Open Rev comment posted by the students. These responses, combined with the Open Rev discussions at the beginning of class, allowed students to directly receive formative feedback about their work on a regular basis. This feedback was public, and part of an ongoing class discussion, so students had access to the feedback being given to their peers as well. The feedback was given partially as an

incentive to complete formative tasks; the students were not being graded on the Open Rev work, but the knowledge that they would be critiqued (and also that they would be expected to join in a class discussion the following week) meant that the students knew there was a specific, educational purpose for these tasks, and if they took the time to complete them they would receive guidance.

The students were also able to receive feedback privately in the form of individual tutorials, scheduled before the due dates of each piece of coursework. The students received two individual tutorials during the course, with the lecturer and myself present in these meetings. Tutorials lasted for 15 minutes, and the students were asked to come prepared with questions about the assignment, as well as any general questions or comments about the course that they would like to discuss. The questions and comments were submitted in the form of private blog posts, so that students could share concerns about their own work (or about the course) to which only the course supervisors would have access. This means that during the ten weeks that MU3423 was in session, the students had weekly opportunities to give and receive course feedback, both in public and semi-private settings, as well as deliver anonymous feedback at the end of the course.

The integration of feedback in multiple aspects of the course allowed for the creation of a feedback loop (to borrow an engineering term). Basically, having regular feedback gave the course supervisors the opportunity to edit the weekly structure of the course based around the feedback received. This process is represented below, in Figure 163.
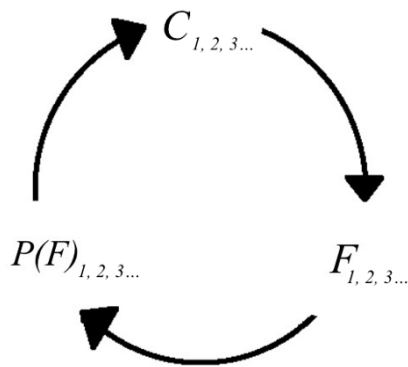
Figure 163: Flow chart representing the process of re-integrating feedback into the planning and delivery of MU3423.

In Figure 163, *C* represents the classroom activity, while *F* represents feedback received from *C*, and *P(F)* represents the planning of subsequent iterations of *C*. The subscript designations '1, 2, 3…' represent the different weeks of the course. The feedback loop ultimately results in a course which the students were able to help design. This abundance of feedback was included in MU3423 so that students could feel as if they were part of a community within the course. Through the feedback loop, the students had the power to enhance the course's structure with their input, in a sense, taking a certain element of control in their own educational process, and participating as active learners.

4.3.iii: Revisiting Learning Outcomes and Identifying Weaknesses

In this sub-section, I will return to the learning outcomes outlined in 4.2.i, and discuss the extent to which the tools and structure of the course gave the students of MU3423 the opportunity to meet each individual goal successfully.

The first proposed learning outcome of MU3423 was for the students to recognise all of the note forms being used in the materials covered in the course, and to understand their usage. This goal was met using the Moodle quizzes about the note forms, as well as the Open Rev tasks which required the students to discuss and use the names of the individual note forms on a regular basis throughout the course's run.

The second learning outcome was for the students to have the ability to sing and/or play songs from sources in the period being studied. While we incorporated singing into many of the post-lecture discussions—and several students felt confident enough with the notation to include audio examples with their second assignment—this was one outcome that I felt could have received more focus within the course. One of the most frequent comments in the anonymous student feedback was that they would have liked to have had more opportunities for singing within the course. One student even thought that future incarnations of this course should consider holding a concert at the end of the term.

The third learning outcome was for the students to be able to identify and analyse aspects of manuscript layout, script, language, and text relevant to the study of song. These skills were taught using the digital tools outlined in section 4.2.ii (Open Rev, blogs, quizzes) as well as in class lectures, and evaluated using the two pieces of coursework.

The fourth and fifth learning outcomes were to interrogate and compare the approaches of different music scribes as a tool for analysis of song, and to draw on a range of skills for the close reading and analysis of handwritten musical scores from any period. These reflect the 'big picture' skills, and also the transferable skills that the students can take away from the course as a whole. The second assignment included comparative analysis between scribes, and weekly tasks and classroom discussions gave the students ample practice in palaeography and codicology that can be applied to other systems of handwritten music notation.

Some Conclusions

The intent of this chapter was to show how the theory laid out in Chapter One could be used to teach early notation at an undergraduate level. One use of the theory in Chapter One was to visualise a formulaic representation of the relationship between music notation and classroom (or individual) engagement. Rather than dealing with sound events as potential results of engaging with notation, like the examples in Chapter One, engagement with notation resulted in understanding, either internal or communicated through written or aural representation. I believe that the students gave insightful responses to very difficult subject matter, and the academic work that they produced (combined with overwhelmingly positive feedback) is a testament to this course's success, and proof of the effectiveness of this teaching method. The teaching process outlined in this case study requires early music notation to have a set place and important role in the various paths of music: from conception to written record, sound event, understanding, analysis, or any combination thereof. By completing this process without using modern transcription, students are able to better recognise their own internal struggles between previously-held musical knowledge and the notation that exists on the manuscript page, allowing them to develop an awareness of early notations as cultural artefacts themselves.

Conclusion

The aim of this thesis has been to provide a palaeographic method for examining and analysing the notation of medieval song that can also be applied to the teaching of such notation at an undergraduate level. The palaeographic focus of this thesis means that much of the subject matter (such as linguistics and educational theory) has exceeded the scope of more traditional musicological research. However, this non-traditional approach has helped to shed some light on the essential elements that are missing from the field of music palaeography. The review of historical and modern palaeographic methods in Chapter One showed that, while plenty of literature exists that includes palaeographic studies of music notation, many of these approaches tend to remove the notation from its manuscript context, presenting notation in table form, which can create a false 'standard' which did not necessarily exist within a given time period or geographic region. Furthermore, while Chapter One showed that modern methods are beginning to consider notation in its context, the field is lacking standard practice. By exploring the presence of music within studies of other writing systems (both linguistic and non-language-based), and how those approaches could be applied to the notation of medieval music, I laid the groundwork for a palaeographic method that was less focused on the transitional elements of notation (i.e. how one type of notation 'developed' into another) than on the ways that scribes were approaching the concept of visualising sound. This idea was further developed with the exploration of notation within the field of semiotics; while this is a field that musicologists have approached, or mentioned peripherally, a semiotic approach to medieval music notation has not been seriously considered since Treitler. This thesis not only provided an overview of the scholarship about notation and semiotics (from both musicologists and semioticians), but offered a semiotic framework for the study of music notation, using flow charts inspired by the work of Kurkela to break down

the creation and transmission of, as well as interaction with, medieval music, in both sonic and visual forms. The discussion of quantitative palaeographic methods at the end of Chapter One introduced my concept of 'macro-palaeography', which, combined with the non-traditional approaches influenced by the fields of linguistics and semiotics, provided an entirely new approach to the field of music palaeography.

The palaeographic method detailed in Chapter One was then applied to the study of insular song notation in Chapter Two, in which I catalogued and presented data on the more than 25,000 note forms used to write over 100 songs, as well as data on non-notational forms such as staves and clefs. The notation of these songs has never before been examined with this level of palaeographic detail, and the use of quantitative data has allowed me to definitively state exactly how these forms were being used to notate insular song in the twelfth and thirteenth centuries. In this chapter, I used digital images from the songs being examined to not only show in detail how certain forms looked when written by different scribes, but allowed for the examination of these forms in the larger context of the songs in which they were being written: how scribes often used multiple adaptations of a form within a single song, or how certain forms were combined and adapted to create new visual expressions of sound.

Chapter Three used a similar comparative methodology to explore the relationship between the insular miscellany songs and their various witnesses. I first examined the internal concordances, then studied some of the concordances found in the Dublin Troper, and finally examined two songs that have concordances in sources of trouvère song. The comparisons were conducted using the 'macro-palaeographic' method of syllabic comparison, which allowed me to present concrete data on the amount of notational, textual, and pitch-related variance between versions of the same song. Each section revealed specific information about the relationship between songs in insular and Continental sources, as well as the notational

differences found between miscellany sources and sources that were dedicated to the collection of music. This is the first time that a notational comparison has been made between these miscellany sources and both the Dublin Troper and trouvère witnesses. Though the scope of the comparison of concordances was limited to only 14 songs, this comparison has definitively confirmed long-held assumptions that songs with high amounts of variation are still recognised as being the same. This directly challenges any assumptions that variation between witnesses is something to be solved by editors; these amounts of variation create new questions about musical perception and what exactly makes two songs 'the same', and will hopefully encourage scholars to allow these versions to exist in their own right, as proof of a complex and diverse culture of song collection.

The final chapter applies the method laid out in Chapter One (and demonstrated in Chapters Two and Three) to the teaching of medieval song notation at the undergraduate level. As far as I have been able to determine through my research, this chapter is unique in its focus on the teaching of early musical notation; there is currently no published research on the teaching of such notation at the undergraduate level. I began by framing my approach within a theoretical foundation, showing how the flow charts from Chapter One can be used to illustrate the educational process, including the use of digital images as a teaching tool, and how the semiotic idea of 'representation' factors into the discourse around the use of these images. This foundation then allowed me to discuss current methods of teaching notation; specifically, the same lack of a standard process that was seen within the field of music palaeography. I went on to discuss the use of digital tools to teach early notation, comparing two online courses and noting the positive and negative attributes of each. After laying out this foundation, I went on to discuss the process of designing and delivering the course 'The Notation of Medieval Song' at Royal Holloway in the spring of 2015. Within this discussion, I laid out how exactly students were taught about traditional methods of palaeography and

codicology, while also being encouraged to examine early notation as its own writing system, specifically avoiding transcription, and using no modern notation at all. I also discussed the digital tools being used during the course, such as visual and audio-based Moodle quizzes to familiarise students with the neume forms, and use of the Open Rev platform for collaborative annotation and discussion of digital images of songs in manuscripts. As far as I can tell, this is a unique approach to the teaching of early notation at the undergraduate level, and the students' insightful and detailed responses (particularly in the discussions of the Open Rev assignments) are a testament to the effectiveness of this method.

This thesis has overwhelmingly shown that the study of early notation can go far beyond the editorial process. It offers insight into the cultures of writing and music-making, but also into individual perception. For scribes notating song in the twelfth and thirteenth centuries, the lack of a standard orthography was an invitation to create new forms, and to use existing forms in non-traditional ways. This resulted in a great deal of variation among witnesses, which can in turn be used to examine individual perceptions of song, particularly in regard to the identification of two melodies as being the same. While this thesis presented quite a bit of quantitative information about specific notational forms, there is much work that can be done in the future, particularly in using the quantitative material to link this type of palaeographic work back into larger questions of historical context and performance. For example, the discussion of wave note use in chapters Two and Three supports a general assertion that, in the context of twelfth- and thirteenth-century song, the form may have indicated a stylistically ornamental trait in performance, similar to that of a trill.[301] The qualitative information presented indicates that when the form is used in a compound, it is most often found in medial or—more often—penultimate syllables, indicating a need to be paired with another pitch in order to perform its aural function. The wave note's frequent

---

[301] See the discussion of *Veni sancte spiritus*, in section 3.1.iii.

presence as a stand-alone form complicates this assertion, to be sure, but the information presented in this thesis will allow future research on the form to include qualitative studies which can continue to narrow the field of sonic possibility. Further studies may choose to more closely examine the relationship between this note form and the text on which it is sung (similar to the studies showing how liquescence was used with specific letter combinations in the chant tradition), or whether the note is more commonly found on specific pitches, following the research which has been done on the winged punctum. Furthermore, a comparison of the wave note and the winged punctum could be beneficial in itself, as the two forms contain some visual similarities. Because the presence of these 'complex' forms typically results in higher levels of variation between concordances, the next methodological step may be to examine a larger corpus of wave note usage: for example, across a single manuscript.

Another such example of further work to be done can be seen in the discussions of the English conjunctura. In the context of the songs examined in this thesis, the form is used to write 34% of all three-note descending forms—similar in number to the percentage of extended clives—but a full 7.5% of these English conjuncturae come from a single song, *Stillat in stellam radium*. Songs such as this one, with high concentrations of English conjuncturae use, may be indicative of certain cultural characteristics. For example, the scribe only uses the English conjunctura to write the three-note descending form (rather than a combination of two or three types, which I have shown is common across the repertoire examined in this thesis), indicating either a specific choice to use a single type of form, or that the scribe may have been unaware of the existence of the other types. A comparison with other songs exclusively using the English conjunctura to write three notes descending may uncover other commonalities that prove useful to a large-scale examination of the form's origin and use.

The connection between monophony and polyphony could be further examined, in terms of whether scribes are more likely to use a single type of three-note form throughout a polyphonic setting, as the scribe of the two-voice *Stillat in stellam radiam* has done. The cultural question of 'Englishness' could also be explored in relation to this form, going back to Anonymous IV's *elmuarifa* (mentioned in An Explanation of Neume Forms, in the Introduction), which he notes 'can be irregular', a description that certainly requires further inquiry. One quite striking issue with the English conjunctura is how the scribes of the material in this thesis seem unwilling to adapt the form: the scribes consistently add descending notes to the climacus and extended clivis forms, but rarely do so with the English conjunctura. However, the 'conjunctura' form would go on to regularly feature between two and seven descending puncta in polyphonic sources in the thirteenth and fourteenth centuries (also noted in the Explanation of Neume Forms section), suggesting that the adapted usage of the form between the twelfth and fourteenth centuries may be an area of study that could prove useful. These examples may be varied in regard to types of further study (historical, analytical, cultural, &c.), but they share a common thread in that all of these potential research topics will benefit from the qualitative information presented in this thesis, as well as from continued research which makes use of this methodology.

Further to the examples throughout this thesis of how this method can be applied to palaeographic examination (as well as the potential research topics listed above), I also showed how it can be applied to the teaching of early notation (as evidenced in Chapter Four). As with the future palaeographic possibilities, the application of this methodology to notational pedagogy can—and should—certainly be explored further, and applied to a variety of musical notations. Ultimately, I believe that by allowing research on medieval song notation to include methodology and pedagogy, it is possible to construct a strong

methodological tradition for future scholars and provide the necessary educational resources to both encourage and inspire further research into the notation of medieval music.

Bibliography

Agawu, Kofi. *Playing With Signs: A Semiotic Interpretation of Classical Music*. Princeton, NJ: Princeton University Press, 1991.

Anderson, Gordon Athol. 'Notre Dame and Related Conductus: A Catalogue Raisonné'. *Miscellanea Musicologica* 6 (1971): 153-229, and 7 (1975): 1-81.

———. 'The Notation of the Bamberg and Las Huelgas Manuscripts'. *Musica Disciplina* 32 (1978): 19-67.

Apel, Willi. *The Notation of Polyphonic Music 900-1600*. 5th ed. Cambridge, MA: The Medieval Academy of America, 1961.

Arlt, Wulf. 'Aspekte der musikalischen Paläographie'. In *Die einstimmige Musik des Mittelalters*. Paläographie der Musik 1, ed. Wulf Arlt, 1-48. Cologne: Volk-Verlag Gerig, 1979.

———. 'The "Reconstruction" of Instrumental Music'. In *Studies in the Performance of Late Medieval Music*, ed. Stanley Boorman, 75-100. Cambridge and New York, NY: Cambridge University Press, 1983.

Atkinson, Charles M. *The Critical Nexus: Tone-System, Mode, and Notation in Early Medieval Music*. Oxford: Oxford University Press, 2009.

Aubry, Pierre, ed., with Alfred Jeanroy. *Réproduction Phototypique du Manuscrit 5198 de la Bibliothèque de l'Arsenal: Transcription du Texte Musical en Notation Moderne par Pierre Aubry, Introduction et Notices par A. Jeanroy*. Paris: Paul Geuthner, 1910.

Bailey, Richard, and Mark Garner. 'Is the Feedback in Higher Education Assessment Worth the Paper it is Written on? Teachers' Reflections on Their Practices'. *Teaching in Higher Education* 15, no. 2 (2010): 187-198.

Barthes, Roland. *Image-Music-Text*. London: Fontana, 1977.

Bartlett, James C. and W. Jay Dowling. 'Recognition of Transposed Melodies: A Key-Distance Effect in Developmental Perspective.' *Journal of Experimental Psychology: Human Perception and Performance* 6 (1980): 501-15.

Bauer, William I. *Music Learning Today: Digital Pedagogy for Creating, Performing, and Responding to Music*. New York, NY: Oxford University Press, 2014.

Beck, Jean, ed., with Louise Beck. *Corpus Cantilenarum Medii Aevi, ser. 2, Le Chansonnier du Roi, Analyse et Description Raisonnées du Manuscrit Restaure par Jean Beck et Madame Louise Beck*. 2 vols. New York, NY: Broude Brothers, 1938.

Bédier, Joseph, and Pierre Aubry. *Les Chansons de Croisade*. Paris: Librairie Ancienne, 1909.

Bell, Nicholas. *Music in Medieval Manuscripts*. London: British Library, 2001.

Bent, Ian D. 'A New Polyphonic "Verbum Bonum et Suave"'. *Music & Letters* 51, no. 3 (1970): 227-41.

Bent, Margaret. 'Editing Early Music: The Dilemma of Translation'. *Early Music* 22, no. 3 (1994): 373-92.

Bergeron, Katherine. *Decadent Enchantments: The Revival of Gregorian Chant at Solesmes*. Berkeley, Los Angeles, and London: University of California Press, 1998.

———. 'Representation, Reproduction, and the Revival of Gregorian Chant at Solesmes'. Ph.D. thesis, Cornell University, 1989.

Bernstein, Leonard. *The Unanswered Question*. Cambridge, MA: Harvard University Press, 1976.

Bloxham, Sue, and Pete Boyd. *Developing Effective Assessment in Higher Education: A Practical Guide*. Maidenhead: Open University Press, 2007.

Blume, Clemens, and Guido Maria Dreves, eds. *Analecta Hymnica Medii Aevi*. 55 vols. Leipzig: O.R. Reisland, 1886-1922.

Boud, David, and Nancy Falchikov, eds. *Rethinking Assessment in Higher Education.* Abingdon: Routledge, 2007.

Brett, Philip. 'Text, Context and the Early Music Editor'. In *Authenticity and Early Music,* ed. Nicholas Kenyon, 83-114. Oxford and New York, NY: Oxford University Press, 1988.

Brown, Michelle P. *A Guide to Western Historical Scripts from Antiquity to 1600*. London: The British Library, 1990.

———. *Understanding Illuminated Manuscripts: A Guide to Technical Terms*. Malibu, CA: J. Paul Getty Museum, and London: The British Library, 1994.

Bryan, Cordelia, and Karen Clegg. *Innovative Assessment in Higher Education*. London: Routledge, 2006.

Buckley, Ann. 'Music and Musicians in Medieval Irish Society'. *Early Music* 28, no. 2 (2000): 165-76+185-90.

Bullock, Alison. 'Palaeography'. *The Oxford Companion to Music. Oxford Music Online*. Oxford University Press. http://www.oxfordmusiconline.com/subscriber/article/opr/t114/e4947. Accessed 18 March 2016.

Burnett, Charles. 'The Use of Geometrical Terms in Medieval Music: elmuahim and elmuarifa and the Anonymous IV'. *Sudhoffs Archiv* 70, no. 2 (1986): 198-205.

Butterfield, Ardis. *Poetry and Music in Medieval France: From Jean Renart to Guillaume de Machaut*. Cambridge: Cambridge University Press, 2009.

———, and Helen Deeming. 'Editing Insular Song Across the Disciplines'. In *Probable Truth: Editing Medieval Texts from Britain in the Twenty-First Century*. Texts and Translations 5, eds. Vincent Gillespie and Anne Hudson, 151-66. Turnhout: Brepols, 2013.

Byrd, Donald, et al. 'Towards a Standard Testbed for Optical Music Recognition: Definitions, Metrics, and Page Images'. *Journal of New Music Research* 44, no. 3 (2015): 169-95.

Caldwell, John. *Editing Early Music*. Oxford: Oxford University Press, 1995.

Cardine, Dom Eugène. *Sémiologie grégorienne*. Études grégoriennes 11. Solesmes: Imprimerie de Saint-Pierre, 1970.

———. 'Solesmes'. *New Grove Dictionary of Music and Musicians*. Vol. 17, ed. Stanley Sadie, 452-4. London: Macmillan, 1980.

'Cephalicus'. *Grove Music Online. Oxford Music Online*. Oxford University Press. http://www.oxfordmusiconline.com/subscriber/article/grove/music/05290. Accessed 15 March 2016.

Clanchy, Michael T. *From Memory to Written Record: England 1066-1307*. 2nd ed. Oxford: Blackwell, 1993.

Colton, Lisa. 'Music and Sanctity in England, *c*.1260-1400'. PhD thesis, University of York, 2003.

'Coniunctura'. *Grove Music Online. Oxford Music Online*. Oxford University Press. http://www.oxfordmusiconline.com/subscriber/article/grove/music/06294. Accessed 16 March 2016.

Cooke, Deryck. *The Language of Music*. Oxford: Oxford University Press, 1959.

Corbin, Solange. *Die Neumen*. Paläographie der Musik 1/iii, ed. Wulf Arlt. Cologne: Volk-Verlag 1977.

Craig-McFeely, Julia, and Katherine Butler. 'Identifying Scribal Hands: A Methodological Toolkit and an Elizabethan Case Study'. Paper delivered at the MedRen conference, Université libre de Bruxelles, 6-9 July 2015.

Crocker, Richard. *The Early Medieval Sequence*. Berkeley: University of California Press, 1977.

———. *Studies in Medieval Music Theory and the Early Sequence*. Brookfield, VT: Variorum, 1997.

Curran, Sean. 'Reading and Rhythm in the "La Clayette" Manuscript (Paris, Bibliothèque nationale de France, nouv. acq. fr. 13521)'. *Plainsong and Medieval Music* 23, no. 2 (2014): 125-151.

———. 'Music, Text, and (Mental) Images in a Thirteenth-Century Psalter: Bodleian Library, Rawlinson G 18'. Forthcoming.

de Coussemaker, Edmond. *Histoire de l'harmonie au moyen âge*. Paris: V. Didron, 1852.

———. *Scriptorum de Musica Medii Aevi*. 4 vols. Paris: A. Durand, 1864-1876.

Deeming, Helen. 'Music in English Miscellanies of the Twelfth and Thirteenth Centuries'. PhD thesis, University of Cambridge, 2005.

———. 'The Songs of St Godric: A Neglected Context'. *Music & Letters* 86 (2005): 169-85.

———. 'Observations on the Habits of Twelfth- and Thirteenth-Century Music Scribes'. *Scriptorium* 60 (2006): 38-59.

———. 'The Song and the Page: Experiments with Form and Layout in Manuscripts of Medieval Latin Song'. *Plainsong and Medieval Music* 15, no. 1 (2006): 1-27.

———, ed. *Songs in British Sources c.1150-1300*. Musica Britannica 95. London: Stainer and Bell, 2013.

———. 'Si tost c'amis (Renaud de Hoilande)'. In *Sources of British Song 1150-1300.* Digital Image Archive of Medieval Music, 2014. http://www.diamm.ac.uk/wp-content/uploads/2013/05/Si-tost-camis-Renaud-de-Hoilande.pdf. Accessed 12 March 2016.

———. 'Isolated Jottings? The Compilation, Preparation, and Use of Song Sources from Thirteenth-Century Britain'. *Journal of the Alamire Foundation* 6, no. 2 (2014): 139-152.

_____. 'Multilingual Networks in Twelfth- and Thirteenth-Century Song'. In *Language in Medieval Britain: Networks and Exchanges.* Harlaxton Medieval Studies 25, ed. Mary Carruthers, 127-43. Donington: Shaun Tyas, 2015.

_____ and Samantha Blickhan. 'Songs in Circulation, Texts in Transmission: English Sources and the Dublin Troper'. Under consideration at *Early Music*.

_____ and Elizabeth Eva Leach, eds. *Manuscripts and Medieval Song: Inscription, Performance, Context*. Cambridge: Cambridge University Press, 2015.

Derolez, Albert. *The Palaeography of Gothic Manuscript Books: From the Twelfth to the Early Sixteenth Century*. Cambridge and New York, NY: Cambridge University Press, 2003.

de Saussure, Ferdinand. *Course in General Linguistics*. Trans. Wade Baskin, eds. Perry Meisel and Haun Saussy. New material copyright New York, NY: Columbia University Press, 2011. First published New York, NY: The Philosophical Library, Inc., 1959.

Dillon, Emma. 'Music Manuscripts'. In *The Cambridge Companion to Medieval Music*, ed. Mark Everist, 291-319. Cambridge: Cambridge University Press, 2011.

———. 'Musicology on the Edge: Reflections on Medieval Borders'. *Journal of the American Musicological Society* 65, no. 3 (2012): 844-48.

———. 'Unwriting Medieval Song'. *New Literary History* 46, no. 4 (2015): 595-622.

———, and Lynn Ransom, eds. *Cantus Scriptus: Technologies of Medieval Song. The Lawrence J. Schoenberg Symposium on Manuscript Studies in the Digital Age*. Piscataway, NJ: Gorgias Press, 2012.

Dobson, Eric J., and Frank Ll. Harrison, eds. *Medieval English Songs*. New York, NY: Cambridge University Press, 1979.

Dronke, Peter. *The Medieval Lyric*. 3rd ed. Woodbridge: Boydell & Brewer, 1996.

Droste, Diane. 'The Musical Notation and Transmission of the Music of the Sarum Use, 1225-1500'. Ph.D. thesis, University of Toronto, 1983.

Ellis, Katharine. *The Politics of Plainchant in* fin-de-siècle *France*. Royal Musical Association Monographs 20. Burlington, VT: Ashgate, 2013.

Fassler, Margot. *Gothic Song: Victorine Sequences and Augustinian Reform in Twelfth-Century Paris*. Cambridge: Cambridge University Press, 1993.

Fein, Susanna Greer, ed., with David Raybin and Jan Ziolkowski. 'Article 60: Stond wel, moder, under rode: Introduction'. In *The Complete Harley 223 Manuscript*, vol. 2. Kalamazoo, MI: Medieval Institute Publications, 2014. http://d.lib.rochester.edu/teams/text/fein-harley2253-volume-2-article-60-introduction. Accessed 16 March 2016.

Fenlon, Iain, ed. *Cambridge Music Manuscripts, 900-1700*. Cambridge: Cambridge University Press, 1982.

Floros, Constantin. *Introduction to Early Medieval Notation*. Enlarged 2nd ed. Revised, Translated and with an Illustrated Chapter on Cheironomy by Neil K. Moran. Warren, MI: Harmonie Park Press, 2005.

Freistedt, Heinrich. *Die liqueszierenden Noten des gregorianischen Chorals: ein Beitrag zur Notationskunde.* Veröffentlichungen der gregorianischen Akademie zu Freiburg, Heft 14. Fribourg, 1929.

Galera, Maria del Mar et al. 'Music Notation Software as a Means to Facilitate the Study of Singing Musical Scores'. *Electronic Journal of Research in Educational Psychology* 11, no. 1 (2013): 215-38.

Galvez, Marisa. *Songbook: How Lyrics Became Poetry in Medieval Europe*. Chicago: University of Chicago Press, 2012.

Gilissen, Léon. *L'Expertise des écritures médiévales*. Ghent: Story-Scientia, 1973.

Giraud, Eleanor. 'The Production and Notation of Dominican Manuscripts in Thirteenth-Century Paris'. PhD thesis, University of Cambridge, 2014.

———. 'The Dominican Scriptorium at St-Jacques and its Production of Liturgical Exemplars'. In *Scriptorium: Wesen, Funktion, Eigenheiten*, eds. Andreas Nievergelt, Rudolf Gamper, Marina Bernasconi Reusser, Birgit Ebersperger and Ernst Tremp, 247-258. Munich: Bayerische Akademie der Wissenschaften, 2015.

Goehr, Lydia. *The Imaginary Museum of Musical Works: An Essay in the Philosophy of Music*. Oxford: Clarendon Press, 1992.

Goodman, Nelson. *Languages of Art: An Approach to a Theory of Symbols*. Indianapolis, IN and Cambridge, MA: Hackett Publishing Company, 1976.

Göschl, Johannes B. *Semiologische Untersuchungen zum Phänomen der gregorianischen Liqueszenz: Der isolierte dreistufige Epiphonus praepunctus, ein Sonderproblem der Liqueszenzforschung*. 2 vols. Forschungen zur ältern Musikgeschichte 3. Vienna, 1980.

Gosper, Maree, M. MacNeill, Rob Phillips, Greg Preston, Karen Woo, and David Green. 'Web-based lecture technologies and learning and teaching: A study of change in four Australian universities'. *ALT-J, Research in Learning Technology* 18 (2010): 251-263.

Grier, James. *The Critical Editing of Early Music: History, Method and Practice*. Cambridge: Cambridge University Press, 1996.

Haines, John. 'Erasures in Thirteenth-Century Music'. In *Music and Medieval Manuscripts: Palaeography and Performance: Essays Dedicated to Andrew Hughes*, eds. John Haines and Randall Rosenfeld, 60-88. Burlington, VT: Ashgate, 2004.

———. 'Anonymous IV as an Informant on the Craft of Music Writing'. *The Journal of Musicology* 23, no. 3 (2006): 375-425.

———. 'From Point to Square: Graphic Change in Medieval Music Script'. *Textual Cultures: Texts, Contexts, Interpretation* 3, no. 2 (2008): 30-53.

Harris, Roy. *The Origin of Writing*. London: Duckworth, 1986.

———. *Signs of Writing*. London and New York, NY: Routledge, 1995.

———. *Rethinking Writing*. Bloomington and Indianapolis: Indiana University Press, 2000.

———. 'Speech and Writing'. In *The Cambridge Handbook of Literacy*, eds. David R. Olson and Nancy Torrance, 46-58. Cambridge: Cambridge University Press, 2009.

Harrison, Frank Ll. *Music in Medieval Britain*. Studies in the History of Music 1. London: Routledge and Kegan Paul, 1958.

Hartzell, Karl Drew. *Catalogue of Manuscripts Written or Owned in England up to 1200 Containing Music*. Woodbridge: The Boydell Press, 2006.

Hatten, Robert S. *Musical Meaning in Beethoven: Markedness, Correlation, and Interpretation*. Bloomington and Indianapolis: Indiana University Press, 1994.

Haug, Andreas. 'Zur Interpretation der Liqueszenzneumen'. *Archiv für Musikwissenschaft* 50 (1993): 85-100.

Hébert, Sylvie, and Isabelle Peretz. 'Recognition of Music in Long-Term Memory: Are Melodic and Temporal Patterns Equal Partners?' *Memory & Cognition* 25, no. 4 (1997): 518-33.

Helsen, Kate. 'The Evolution of Neumes into Square Notation in Chant Manuscripts'. *Journal of the Alamire Foundation* 5 (2013): 143-174.

———, Jennifer Bain, Ichiro Fujinaga, Andrew Hankinson, and Debra Lacoste. 'Optical Music Recognition and Manuscript Chant Sources'. *Early Music* 42, no. 4 (2014): 555-8.

Hesbert, René-Jean. *Le Tropaire-Prosaire de Dublin: Manuscrit Add. 710 de l'Université de Cambridge (vers 1360)*. Monumenta Musica Sacrae 4. Rouen: Imprimerie Rouennaise, 1966.

Higgins, Paula. 'From the Ivory Tower to the Marketplace: Early Music, Musicology, and the Mass Media'. *Current Musicology* 53 (1993): 109-123.

Hiley, David. 'The Plica and Liquescence'. In *Gordon Athol Anderson (1920-1981) in memoriam: Von seinen Studenten, Freunden und Kollegen*. Musicological Studies 49, ed. Luther Dittmer, 2:379-91. Henryville, PA: Institute of Medieval Music, 1984.

———. 'The Rhymed Sequence in England - A Preliminary Survey'. In *Musicologie Médiévale: Notations et Séquences; Actes de la Table Ronde du CNRS à l'Institute de Recherche et d'Histoire des Textes, 6-7 Septembre 1982*, ed. Michel Huglo, 227-246. Paris: Champion, 1987.

———. *Western Plainchant: A Handbook*. Oxford: Clarendon Press, 1993.

———. 'Climacus'. *Grove Music Online*. *Oxford Music Online*. Oxford University Press. http://www.oxfordmusiconline.com/subscriber/article/grove/music/05968. Accessed 16 March 2016.

———. 'Clivis'. *Grove Music Online. Oxford Music Online*. Oxford University Press. http://www.oxfordmusiconline.com/subscriber/article/grove/music/05977. Accessed 14 March 2016.

———. 'Epiphonus'. *Grove Music Online. Oxford Music Online*. Oxford University Press. http://www.oxfordmusiconline.com/subscriber/article/grove/music/08887. Accessed 15 March 2016.

———. 'Plica'. *Grove Music Online. Oxford Music Online*. Oxford University Press. http://www.oxfordmusiconline.com/subscriber/article/grove/music/21942. Accessed 18 March 2016.

———. 'Punctum'. *Grove Music Online. Oxford Music Online*. Oxford University Press. http://www.oxfordmusiconline.com/subscriber/article/grove/music/22552. Accessed 6 March 2016.

———. 'Quilisma'. *Grove Music Online. Oxford Music Online*. Oxford University Press. http://www.oxfordmusiconline.com/subscriber/article/grove/music/22699. Accessed 17 March 2016.

———. 'Torculus'. *Grove Music Online. Oxford Music Online*. Oxford University Press. http://www.oxfordmusiconline.com/subscriber/article/grove/music/28155. Accessed 12 March 2016.

Holford-Strevens, Leofranc. 'Latin Poetry and Music'. In *The Cambridge Companion to Medieval Music*, ed. Mark Everist, 225-40. Cambridge: Cambridge University Press, 2011.

Hourlier, Jacques. 'Sémiologie musicale'. *Études Grégoriennes* 6. Solesmes: Abbaye Saint-Pierre de Solesmes, 1963.

Hucke, Helmut. 'Toward a New Historical View of Gregorian Chant'. *Journal of the American Musicological Society* 33 (1980): 437-67.

Hughes, Andrew. *Medieval Manuscripts for Mass and Office: A Guide to their Organization and Terminology*. Toronto, Buffalo, and London: University of Toronto Press, 1982.

Huglo, Michel. 'Les noms des neumes et leur origine'. *Études grégoriennes* 1, 53-67. Solesmes: Abbaye Saint-Pierre de Solesmes, 1954.

———. 'Règlement du XIIIe siècle pour la transcription des livres notés'. In *Festschrift Bruno Stäblein zum 70. Geburtstag*, ed. Martin Ruhnke, 121-33. Kassel: Bärenreiter, 1967.

———. 'Towards a Scientific Palaeography of Music'. In *The Calligraphy of Medieval Music*, trans. and ed. John Haines, 13-22. Turnhout: Brepols, 2011.

Huot, Sylvia. *From Song to Book: The Poetics of Writing in Old French Lyric and Lyrical Narrative Poetry*. Ithaca, NY: Cornell University Press, 1987.

James, Montague Rhodes. *A Descriptive Catalogue of the Manuscripts in the Library of Gonville and Caius College, Cambridge*. 3 vols. Cambridge: Cambridge University Press, 1907-14.

Kay, Sarah. *Parrots and Nightingales: Troubadour Quotations and the Development of European Poetry*. Philadelphia, PA: University of Pennsylvania Press, 2013.

Karp, Theodore. *Aspects of Orality and Formularity in Gregorian Chant*. Evanston, IL: Northwestern University Press, 1998.

———. 'Blondel de Nesle'. *Grove Music Online. Oxford Music Online*. Oxford University Press. http://www.oxfordmusiconline.com/subscriber/article/grove/music/03303. Accessed 24 March 2016.

Kelly, Columba. *The Cursive Torculus Design in the Codex St Gall 359 and its Rhythmical Significance: A Palaeographical and Semiological Study*. St Meinrad, IN: Abbey Press, 1964.

Kelly, Thomas Forrest. *Capturing Music: The Story of Notation*. New York, NY: W.W. Norton & Co., 2014.

Ker, Neil R. *Medieval Libraries of Great Britain: A List of Surviving Books*. 2nd ed. London: Offices of the Royal Historical Society, 1964.

Kerman, Joseph. *Contemplating Music: Challenges to Musicology*. Cambridge, MA: Harvard University Press, 1985.

Kirkwood, Adrian. 'E-learning: You Don't Always Get What You Hope For'. *Technology, Pedagogy and Education* 18 (2009): 107-121.

Kozachek, Thomas. 'Tonal Neumes in Anglo-Saxon and Anglo-Norman Pontificals'. *Plainsong and Medieval Music* 6, no. 2 (1997): 119-141.

Kuo, Yi-Ting, et al. 'A Proposal of a Color Music Notation System on a Single Melody for Music Beginners'. *International Journal of Music Education* 31, no. 4 (2013): 394-412.

Kurkela, Kari. *Note and Tone: A Semantic Analysis of Conventional Music Notation*. Acta Musicologica Fennica 15. Helsinki: Suomen Musiikkitieteellinen Seura Musikvetenskapliga Sällskapet i Finland, 1986.

Lefferts, Peter M. 'Cantilena and Antiphon: Music for Marian Services in Late Medieval England'. In *Studies in Medieval Music: Festschrift for Ernest H. Sanders*, ed. Peter M. Lefferts and Brian Seirup, 247-82. New York, NY: Department of Music, Columbia University, 1990.

———. 'England'. In *The Cambridge Companion to Medieval Music,* ed. Mark Everist, 105-20. Cambridge: Cambridge University Press, 2011.

Lerdahl, Fred and Ray Jackendoff. *A Generative Theory of Tonal Music*. Cambridge, MA: MIT Press, 1983.

Liber gradualis juxta antiquorum codicum fidem. Solesmes: Imprimerie de Saint-Pierre, 1895.

Losseff, Nicola. 'Insular Sources of Thirteenth-Century Polyphony and the Significance of Notre Dame'. Ph.D. thesis, King's College, London, 1993.

Ludwig, Friedrich, ed. *Guillaume de Machaut: Musikalische Werke*. 4 vols. Publikationen älterer Musik. Leipzig: Breitkopf & Härtel, 1926-54.

Maclellan, Effie. 'How Convincing Is Alternative Assessment for Use in Higher Education?'. *Assessment & Evaluation in Higher Education* 29, no. 3 (2004): 311-321.

Mayer-Martin, Donna, with Dorothy Keyser. *Thematic Catalogue of Troubadour and Trouvère Melodies*. Thematic Catalogues in Music no. 18. Hillsdale, NY: Pendragon Press, 2011.

McAlpine, Fiona. 'Authenticity and "Auteur": The Songs of Hugues de Berzé'. *Plainsong and Medieval Music* 4, no. 1 (1995): 13-32.

McGee, Timothy. '"Ornamental" Neumes and Early Notation'. *Performance Practice Review* 9, no. 1 (1996): 39-65.

McLucas, Anne Dhu. *The Musical Ear: Oral Tradition in the USA*. SEMPRE Studies in the Psychology of Music. Burlington, VT: Ashgate, 2010.

Mocquereau, André. 'Neumes-accents liquescents ou sémi-vocaux'. In *Les principaux manuscrits de chant grégorien, ambrosien, mozarabe, gallican, publiés en facsimilés phototypiques*, ed. Dom André Mocquereau, 37-86. Paléographie Musicale 2. Solesmes and Rome-Tournai: Desclée, 1891.

———, ed. *Le codex 339 de la bibliothèque de Saint Gall*. Paléographie Musicale 1. Solesmes: Desclée, 1889.

Monelle, Raymond. *Linguistics and Semiotics in Music*. Contemporary Music Studies 5. London and New York, NY: Routledge, 1992.

———. *The Sense of Music: Semiotic Essays*. Princeton, NJ: Princeton University Press, 2000.

Muzurelle, Denis. *Vocabulaire codocologique: Répertoire méthodique des termes français relatifs aux manuscrits*. Histoire du livre et des textes, i. Paris: Rubricae, 1985. http://vocabulaire.irht.cnrs.fr/. Accessed 10 March 2016.

Nattiez, Jean-Jacques. *Fondements d'une sémiologie de la musique*. Paris: Union Générale d'Editions, 1975.

———. *Music and Discourse: Toward a Semiology of Music*. Translated by Carolyn Abbate. Princeton, NJ: Princeton University Press, 1990.

Newes, Virginia. 'Writing, Reading and Memorizing: The Transmission and Resolution of Retrograde Canons from the 14th and 15th Centuries'. *Early Music* 18, no. 2 (1990): 218-21+223-34.

Ornato, Ezio, ed. *La face cachée du livre médiéval: L'histoire du livre vue par Ezio Ornato, ses amis et ses collègues*. Viella: Roma, 1997.

O'Neill, Mary. *Courtly Love Songs of Medieval France: Transmission and Style in the Trouvère Repertoire*. Oxford: Oxford University Press, 2006.

O'Sullivan, Daniel E. *Marian Devotion in Thirteenth-Century French Lyric*. Toronto, Buffalo, and London: University of Toronto Press, 2005.

———. 'Editing Melodic Variance in Trouvère Song', in *Textual Cultures* 3, no. 2 (2008): 54-70.

Page, Christopher. 'A Catalogue and Bibliography of English Song from its Beginnings to c.1300'. *Royal Musical Association Research Chronicle* 13 (1976): 67-82.

Parrish, Carl. *The Notation of Medieval Music*. New York, NY: W.W. Norton & Company, 1957.

Patel, Aniruddh D. *Music, Language, and the Brain*. Oxford: Oxford University Press, 2008.

Peirce, Charles Sanders. 'Sign'. In *Dictionary of Philosophy and Psychology*, ed. James Mark Baldwin, 2:257. 3 vols. New York: Macmillan, 1901-5.

'Pes (ii)'. *Grove Music Online. Oxford Music Online*. Oxford University Press. http://www.oxfordmusiconline.com/subscriber/article/grove/music/21403. Accessed 12 March 2016.

Pfaff, Richard W. 'M.R. James on the Cataloguing of Manuscripts: A Draft Essay of 1906'. *Scriptorium* 31 (1977): 103-18.

Philpott, Chris. 'Is Music a Language?' In *Issues in Music Teaching*, eds. Chris Philpott and Charles Plummeridge, 32-46. London and New York, NY: Routledge, 2001.

Pinegar, Sandra. 'The Seeds of Notation and Music Paleography'. *Current Musicology* 53 (1993): 99-108.

Pouderoijen, Kees, and Ike de Loos. *Wer ist der Harker? Die Enstehung des Hartkerishen Antiphonars*. Beiträge zur Gregorianik 47. 2009.

'Porrectus'. *Grove Music Online. Oxford Music Online*. Oxford University Press. http://www.oxfordmusiconline.com/subscriber/article/grove/music/22127. Accessed 15 March 2016.

Pothier, Dom Joseph. *Les mélodies grégoriennes: d'après la tradition.* Tournai: Desclée, Lefebvre et Cie, 1881.

Raffman, Diana. *Language, Music, and Mind*. Cambridge, MA: MIT Press, 1993.

Randel, Don Michael, ed. 'Neume'. In *The Harvard Dictionary of Music*. 4th ed., 559-61. Cambridge, MA and London: The Belknap Press of Harvard University, 2003.

Rankin, Susan. 'From Memory to Written Record: Musical Notations in Manuscripts from Exeter'. *Anglo-Saxon England* 13 (1984): 97-112.

———. 'Neumatic Notations in Anglo-Saxon England'. In *Musicologie Médiévale: Notations et Séquences, Actes de la Table Ronde du CNRS à l'IRHT 1982*, ed. Michel Huglo, 129-44. Paris: Champion, 1987.

———. 'Calligraphy and the Study of Neumatic Notation'. In *The Calligraphy of Medieval Music*, ed. John Haines, 47-62. Turnhout: Brepols, 2011.

———, ed. *The Winchester Troper*. Introduction and Facsimile. Early English Church Music 50. London: Stainer and Bell, 2007.

Rebelo, Ana, Ichiro Fujinaga, Filipe Paszkiewicz, Andre R.S. Marcal, Carlos Guedes, and Jaime S. Cardoso. 'Optical Music Recognition: State-of-the-Art and Open Issues'. *International Journal of Multimedia Information Retrieval* 1, no. 3 (2012): 173-90.

Rennie, Frank, and Tara Morrison. *E-learning and Social Networking Handbook: Resources for Higher Education*. 2nd ed. New York, NY: Routledge, 2013.

Riemann, Hugo. *Geschichte der Notenschrift*. Leipzig: Breitkopf & Härtel, 1878.

Rokseth, Yvonne, ed. *Polyphonies du XIII siècle: Le manuscrit H 196 de la Faculté de Médecine de Montpellier*. 4 vols. Paris: Éditions de l'Oiseau-Lyre, 1935-9.

Roland, Perry, Andrew Hankinson, and Laurent Pugin. 'Early Music and the Music Encoding Initiative'. *Early Music* 42, no. 4 (2014): 605-11.

Rush, Toby W. 'Incorporating Assistive Technology for Students with Visual Impairments Into the Music Classroom'. *Music Educators Journal* 102, no. 2 (2015): 78-83.

Saltzstein, Jennifer. *The Refrain and the Rise of the Vernacular in Medieval French Music and Poetry*. Woodbridge: Boydell & Brewer, 2013.

Salvador, Karen. 'Music Instruction for Elementary Students with Moderate to Severe Cognitive Impairments: A Case Study'. *Research Studies in Music Education* 37, no. 2 (2015): 161-74.

'Scandicus'. *Grove Music Online. Oxford Music Online*. Oxford University Press. http://www.oxfordmusiconline.com/subscriber/article/grove/music/24699. Accessed 18 March 2016.

Schmuckler, Mark A. 'Tonality and Contour in Melodic Processing'. In *The Oxford Handbook of Music Psychology*, eds. Susan Hallam, Ian Cross, and Michael Thaut, 143-65. 2nd ed. Oxford: Oxford University Press, 2016.

Schrade, Leo, ed. *The Works of Guillaume de Machaut*. 2 vols. Polyphonic Music of the Fourteenth Century. Les Ramparts, Monaco: L'Oiseau-Lyre, 1956.

Schwan, Eduard. *Die altfranzösischen Liederhandschriften: Ihr Verhaltniss, ihre Enstchung und ihre Bestimmung*. Berlin: Wiedmannsche Buchhandlung, 1886.

Seeger, Charles. 'On the Moods of a Music-Logic'. *Journal of the American Musicological Society* 13 (1960): 224-61.

Selfridge-Field, Eleanor. 'Search Engines for Digitally Encoded Scores'. *Early Music* 42, no. 4 (2014): 591-98.

Selwyn, Neil. 'The Use of Computer Technology in University Teaching and Learning: A Critical Perspective'. *Journal of Computer Assisted Learning* 23 (2007): 83-94.

Shepherd, John, et al. *Whose Music? A Sociology of Musical Languages*. New Brunswick, NJ: Transaction Books, 1980.

Sloboda, John. 'The Eye-Hand Span: An Approach to the Study of Sight-Reading'. *Psychology of Music* 2 (1974): 4-10.

———. *The Musical Mind: The Cognitive Psychology of Music*. Oxford: Clarendon Press, 1985.

Stevens, John E. 'University Library, Add. MS 710'. In *Cambridge Music Manuscripts 900-1700*, ed. Iain Fenlon, 78-81. Cambridge: Cambridge University Press, 1982.

———. *Words and Music in the Middle Ages: Song, Narrative, Dance and Drama, 1050-1350*. Cambridge: Cambridge University Press, 1986.

——— 'Alphabetical Check-List of Anglo-Norman Songs c.1150-1350'. *Plainsong and Medieval Music* 3, no. 1 (1994): 1-22.

———, ed. *The Later Cambridge Songs: An English Song Collection of the Twelfth Century*. Oxford and New York, NY: Oxford University Press, 2005.

Stewart, Lauren. 'A Neurocognitive Approach to Music Reading'. *Annals of the New York Academy of Sciences* 1060 (2005): 377-86.

Stinson, John, and Jason Stoessel. 'Encoding Medieval Music Notation for Research'. *Early Music* 42, no. 4 (2014): 613-17.

Stokes, Peter. 'Computer-Aided Palaeography, Present and Future'. In *Codicology and Palaeography in the Digital Age*, ed. Malte Rehbein et al., 309-38. München: Professur für Historiche Grundwissenschaften und Historiche Medienkunde, Ludwig-

Maximilians-Universität München in Zusammenarbeit mit dem Institut für Dokumentologie und Editorik, 2009.

Suñol, Grégoire. *Introduccío a la paleographia musical gregoriano*. Translated and Revised with an Introduction by A. Mocquereau as *Introduction a la paléographie musicale grégorienne.* Paris: Desclée et Cie, 1935.

Tarasti, Eero, *A Theory of Musical Semiotics.* Bloomington and Indianapolis: Indiana University Press, 1994.

———. *Semiotics of Classical Music: How Mozart, Brahms and Wagner Talk to Us.* Berlin and New York, NY: Walter de Gruyter, 2012.

———, ed. *Musical Signification: Essays in the Semiotic Theory and Analysis of Music.* Berlin: Mouton de Gruyter, 1995.

Tischler, Hans, ed. *Trouvère Lyrics with Melodies: Complete Comparative Edition.* 13 vols. Corpus Mensurabilis Musicae, 107. Neuhausen: American Institute of Musicology/Hänssler-Verlag, 1997.

Teen, Liow Bee, Affendi bin Haji Ramli, and Loo Fung Ying. 'Raising Interest with Software Integration in Music Notation Learning'. *Procedia - Social and Behavioral Sciences* 143 (2014): 379-83.

Treitler, Leo. 'The Early History of Music Writing in the West'. In *With Voice and Pen: Coming to Know Medieval Song and How It Was Made*, ed. Treitler, 317-364. Oxford: Oxford University Press, 2003.

Truitt, Frances E, Charles Clifton, Jr., Alexander Pollatsek, and Keith Rayner. 'The Perceptual Span and the Eye-Hand Span in Sight Reading Music'. *Visual Cognition* 4, no. 2 (1997): 143-61.

Varelli, Giovanni. 'Two Newly Discovered 10th-Century Organa'. *Early Music History* 32 (2013): 277-315.

'Virga'. *Grove Music Online. Oxford Music Online*. Oxford University Press. http://www.oxfordmusiconline.com/subscriber/article/grove/music/29491. Accessed 7 March 2016.

Vygotsky, Lev S. 'Interaction Between Learning and Development'. In *Mind in Society*, ed. Vygotsky, 79-91. Cambridge, MA: Harvard University Press, 1978.

Wagner, Peter. *Einfürung in die gregorianischen Melodien*. 3 vols. Leipzig: Breitkopf & Härtel, 1895; 1901-1905.

Webster, Peter R. 'Key Research in Music Technology and Music Teaching and Learning'. *Journal of Music, Technology, and Education* 4 (2012): 131-47.

van der Werf, Hendrick. *The Chansons of the Troubadours and Trouvères: A Study of the Melodies and their Relation to the Poems.* Utrecht: A. Oosthoek, 1972.

van Deusen, Nancy. 'The Use and Significance of the Sequence'. *Musica Disciplina* 40 (1986): 5-47.

———. 'Sequence Repertories: A Reappraisal'. *Musica Disciplina* 48 (1994): 99-123.

———. 'Review of *Gothic Song: Victorine Sequences and Augustinian Reform in Twelfth-Century Paris*, by Margot Fassler'. *Journal of the Royal Musical Association* 120, no. 1 (1995): 146-151.

Wang, Cecilia Chu, and David W. Sogin. 'The Recognition of Melodic Fragments as Components of Tonal Patterns'. *Psychology of Music* 18 (1990): 140-9.

Westberry, Nicola, et al. 'Resituation or Resistance? Higher Education Teachers' Adaptations to Technological Change'. *Technology, Pedagogy and Education* 24, no. 1 (2015): 101-116.

Williams, Peter. 'Squaring the Circle: A New Alternative to Alternative-Assessment'. *Teaching in Higher Education* 19, no. 5 (2014): 565-577.

Wolf, Johannes. *Handbuch der Notationskunde*. Leipzig, Breitkopf & Härtel, 1913.

Yu, Pao-Ta, Yen-Shou Lai, Hung-Hsu Tsai, and Yuan-Hou Chang. 'Using a Multimodal Learning System to Support Music Instruction'. *Educational Technology & Society* 13, no. 3 (2010): 151-62.

Yudkin, Jeremy, ed. and trans. *The Music Treatise of Anonymous IV: A New Translation*. Musicological Studies and Documents 41. Rome: American Musicological Society, 1985.

Digital Sources

'An Introduction to the Basics of Fourteenth-Century French Music Notation'. DIAMM Moodle at the Faculty of Music, University of Oxford. Elizabeth Eva Leach, Teacher. diamm.nsms.ox.ac.uk/moodle. Accessed 22 March 2016.

Digital Image Archive of Medieval Music. Margaret Bent and Andrew Wathey, Founders. http://www.diamm.ac.uk. Accessed 22 March 2016.

'From Ink to Sound'. Basel University. https://www.futurelearn.com/courses/from-ink-to-sound. Accessed 22 March 2016.

FutureLearn. 2013. http://www.futurelearn.com. Accessed 22 March 2016.

Grove Music Online. Oxford Music Online. Oxford University Press. http://www.oxfordmusiconline.com. Accessed 22 March 2016.

'Medieval Musicology VLE'. Digital Image Archive of Medieval Music.
    http://www.diamm.ac.uk/resources/medieval-musicology-vle. Accessed 22 March
    2016.

Open Rev. https://www.openrev.org. Accessed 22 March 2016.

Appendix I: Full Table of Palaeographic Data (Digital, Excel Format, available on CD)

See attached CD-ROM for spreadsheet containing full palaeographic data.

Appendix II: Course Materials for MU3423, 'The Notation of Medieval Song'

Weekly Syllabus

<u>Week 1: Introduction / Issues in Medieval Song</u>

    Images/Music/Examples:

1. Example from British Song corpus: *Sumer is icumen in* (**GB-Lbl Harley 978**, ff.9v-10r; manuscript image on OpenRev with 'Week 1' tag).
   a. Recording: Dufay Collective, *Songs and Instrumental Music from Medieval England*, track 20 (available on Naxos).
2. Monophonic virelai (Guillaume de Machaut): *Dame, vostre doulz viaire* (V17, **F-Pn fr. 9221**, ff.160r-160v, manuscript images available online).
   a. Recording: Ensemble Gilles Binchois, *Guillaume de Machaut: Sacred and Secular Music*, disc 2, track 2 (available on Naxos).
   b. Recording: Hesperus, *Neo-Medieval: Medieval Improvisations for a Postmodern Age*, track 10 (available on Naxos).
3. Multi-texted motet: *Plus belle que flor/Quant revient et feulle et flor/L'autrier joer/Flos filius eius* (**Montpellier Codex**, ff.26v-28r, manuscript images available online at http://manuscrits.biu-montpellier.fr/demifolio.php?var=196026v,196026v.jpg,196026vZ.jpg,196026vEF.html).
   a. Recording: Anonymous 4, *Love's Illusion: Music from the Montpellier Codex*, track 1 (available on Spotify).

    After Class:

Please read the Bell and Dillon items on the reading list this week, or as soon as possible.[302] It would also be a good idea to seek out recordings of medieval songs, and listen to them in light of some of the issues and debates that have been discussed in this class.

---

[302] Nicholas Bell, *Music in Medieval Manuscripts* (London: British Library, 2001), 12-29; Emma Dillon, 'Music Manuscripts', in *The Cambridge Companion to Medieval Music*, ed. Mark Everist (Cambridge: Cambridge University Press, 2011), 291-319.

Images/Music/Examples (all images available on OpenRev):

1. *El tens d'iver* (**GB-Cpc 113**, ff.35v-36r)
2. *Ego mundi timens naufragium* (**F-EV 2**, f.3r)
3. *In hac die Dei, Qui passus est pridie, Processit in capite* (3 songs, **GB-Ob Bodley 937**, f.446v)

After Class:

1. Please complete the Topic 2 Quiz, which will cover the neume forms discussed in this week's lecture. Although the quiz is required, it will not count toward your mark for the course. It is merely a way to test your retention of this week's subject matter. You will be asked to reflect on your quiz results on the class blog.

2. On OpenRev, please choose one of the Week 2 images (all images are tagged by week). Within that image, please use the comment function to highlight a group of at least 5 neume forms, and write the names of those forms (in order of their use) in your comment. Please take note of where other students have chosen to comment and avoid commenting on the same forms.

Blog Post 1:

Please write a short (no more than 300 words) reflection on the course so far. Possible topics could include your initial thoughts about palaeography and the notation we have examined in class. You might also choose to discuss the structure of the course and any positive or negative reactions you might have. Please also talk about your quiz results: do you feel you have a comfortable grasp of the basic neume forms?

Week 3: Neume Forms, Continued

Images/Music/Examples:

1. *Licet eger cum ergotis* (**F-EV 2**, ff.4v-5r, images on OpenRev)
2. *Salve virgo singularis* (**GB-Lbl Cotton Titus A xxi**, f.91r, image on DIAMM)
3. *Ave virgo Maria (***F-EV 2**, ff.3r-v, images on OpenRev)

After Class:

1. Please complete the Topic 3 Quiz, which will cover the neume forms discussed in this week's lecture. Although the quiz is required, it will not count toward your mark for the course, it is merely a way to test your retention of this week's subject matter. You will be asked to reflect on your quiz results on the class blog.

2. Like last week, please leave an OpenRev comment on one of this week's images. Highlight a group of at least 5 neume forms, and write the names of the forms in your comment. Then (in the same comment) please write a few observations about the scribe's overall notational style. Please try to choose a group of notes that includes at least one liquescence and, like last week, please avoid commenting on groups of forms on which other students have already commented.

Blog Post 2:

Please record your initial thoughts about liquescence. After this introduction to the form, what are your thoughts on its possible use? You may also include further reflection about scribal hands and some thoughts about the written construction of compound neume forms. Again, please keep your comments to fewer than 300 words.

Week 4: Text and Medieval Song

Images/Music/Examples (all images on OpenRev):

1. *Jesu Cristes milde moder* (**GB-Lbl Arundel 248**, ff.154v-155r)

    a. Recording: Anonymous 4, *An English Ladymass*, track 16 (available on Naxos and Spotify)

2. *Stabat iuxta Christi crucem / Stond wel moder* (**GB-Cjc E.8**, f.106v) – one page, English under Latin

    a. Recording: Anonymous 4, *The Lily and the Lamb*, track 8 (available on Naxos and Spotify)

3. *Parti de mal* (**GB-Lbl Harley 1717**, f.251v)

After Class:

1. Written Reflection. You will receive your first coursework assignment this week. Please write a reflection (not to be shared on the course blog, but to be printed out and handed in at the start of lecture in Week 5) about your thoughts and initial reactions to the assignment - do you have any ideas? Concerns? We will be referring to this piece

of writing during your individual tutorials next week, so please include anything you'd like to discuss, especially about Coursework 1.

2. Find a recording of *Angelus ad virginem* (image available on OpenRev under the Week 5 tag) and listen to it. We will discuss these recordings in next week's lecture, so either bring a hard copy of the recording (such as a CD or digital recording on a flash drive) or be prepared to access your recording on either Naxos or Spotify.

3. On OpenRev, please highlight a small line of text in one of this week's images (at least 2 words), and attempt to transcribe that section of text in a comment. Then (in the same comment) please write a few observations about the scribe's overall writing style. Please note where others have chosen to comment, and avoid choosing sections of text that other students have already transcribed.

Links provided: online resources to help with textual palaeography

Week 5: Thinking Analytically About Notation

Images/Music/Examples (all images available on OpenRev):

1. *Angelus ad virginem / Gabriel fram evene king* (**GB-Lbl Arundel 248**, f.154r) – discuss recordings alongside manuscript image

2. *Eyns ne soy / Ar ne kuthe* (**GB-Lma MS Cust. 1**, ff.160v-161r) – multiple texts, layout

3. *Verbo celum quo firmatur* (**GB-Lbl Sloane 1580**, ff.156v-157v) – two voices

Blog Post 3:

Discuss some of the differences between the recorded versions of *Angelus ad virginem* and the version available in the manuscript. This is one of the more 'well-known' pieces from this group of songs - how might the idea of 'popularity' influence the transmission of a song? As always, please limit your response to 300 words or fewer.

<u>Week 6: The Manuscript Page</u>

Coursework 1 due this week

Images/Music/Examples:

1. *Psallat celum plaudit tellus* (**GB-Ob Rawl. D 1225**, f.9r)
2. *Ave mundi spes Maria* (**GB-Otc 34**, ff.152v-153v)
3. *[…]chant ai entendu / [M]ult s'asprime / Miri it is while sumer ilast* (**GB-Ob Rawl. G 22**, ff.1r-v, 3 songs)
4. *Si tost c'amis* (**GB-Lpro E163-22-1-2**, single leaf)

Class Discussion: involving recordings of *Angelus ad virginem* – students should come to this week's lecture prepared to discuss the content of this week's blog posts.

After Class:

Pick one of the songs from **Harley 978** (images available via the British Library Digitised Manuscripts: http://www.bl.uk/catalogues/illuminatedmanuscripts/record.asp?MSID=8682) and research it for next week. Try not to examine the other songs in the manuscript. Find recordings, editions and articles (if available). Is there anything in particular about the song you've chosen that makes it stand out? What have researchers typically focused on when writing about this song? Songs will be discussed next week in class; you should each be prepared to discuss your research.

Blog Post 4:

Please write some thoughts about what we can learn from 'problems' or 'mistakes' within examples of notation, page layout or text. How can they add to our understanding of not only notation but also scribal practice during this time? As always, please limit your response to 300 words or fewer.

<u>Week 7: The Whole Book</u>

Note: Class will be held in the Computer Lab this week

Please come prepared to discuss your individual songs from **GB-Lbl Harley 978**

After Class:

Read Deeming, Helen (ed.), *Songs in British Sources, c.1150-1300*, Musica Britannica, vol.95 (London: Stainer & Bell, 2013): pages xxi-xlvi (Preface and Introduction).

Blog Post 5:

Please write at least 300 words (note the change in length, please!) about the song you chose to research from GB-Lbl Harley 978. Please discuss your experience examining a single song compared with examining the manuscript as a whole, including any other songs that are included. How did studying the manuscript inform your knowledge of the song, and vice versa?

Week 8: Beyond the Book

    Images/Music/Examples:

1. *Sancte Marie virgine* (**GB-Cu Mm.iv.28**, f.149r)
2. *Sainte Marie virgine* (**GB-Lbl Royal 5 F. vii**, f.85r) *this file may be slightly strange – it starts out very small, but the quality should stay high even as you zoom in (worked using Google Chrome)
3. *Omnis caro peccaverat* (**GB-Cgc 240/126**, pp.12-13)
4. *Omnis caro peccaverat* (**F-Pn fr. 25408**, ff.116r-117r)

    After Class:

PART 1: Please look at the two versions of *Omnis caro peccaverat* available on Open Rev. Choose a small section from the first manuscript and compare it to the second. How are they similar? How are they different? Are the differences in the note forms? Scribal hand? Layout?

PART 2: Read one other student's Open Rev comment, and post a response to it on Open Rev. This can be an agreement, a question, a disagreement - anything you like, as long as you're engaging with the other student's comment.

**Note: Because this is a 2-part assignment and people need time to respond, it would NOT be a good idea to wait until the night before class to do this work.

<u>Week 9: Extended Evaluation and Analysis of Song</u>

You will receive your Coursework 2 assignment this week. We will also be going over the structure of this coursework during the lecture and giving you some examples of how to approach the assignment.

After Class:

1. Written reflection, to be emailed to Helen & Sam by no later than Sunday 15 March: You will receive your second coursework assignment this week. As with the previous tutorials, we'd like you to write a reflection about your approach the coursework, including any questions and concerns you'd like to discuss in your individual tutorials. You may also include questions about the first assignment that you feel will help you on the second (for example, things you may have misunderstood in your first assignment that contributed to a lower mark than you would have liked).

2. Please use the 'Choices' activity available below to choose a time for your individual tutorials next week.

<u>Week 10: Conclusions</u>

This will be a shortened lecture to give you more time to work on your coursework and to schedule individual tutorials. We will be filling out course evaluations this week, so attendance is especially important. Your feedback is highly valued, especially since this is a new course!

Blog Post 6:

Please go back and re-read your first blog post for this course. Think about the knowledge you have acquired during the course, and write a reflection about how your perception of medieval notation, manuscripts, and song has changed over the past 10 weeks. Did anything about your progress surprise you? Are there things you thought you would struggle with that you found easier than expected, or vice versa? This post is a reflection of your own progress, so feel free to include things you would have done differently if you could take the course again, or things you found frustrating as a learner.

Assessments

Coursework Assignment 1 (worth 40%):

Write a description and analysis of the notation of *Alma redemptoris mater* (Oxford, Trinity College, MS 34, f.151r) [image available via course Moodle site]. Your submission may include extended prose between 1500 and 1750 words, in addition to illustrations, examples, diagrams, etc, as appropriate. Aspects you may wish to cover include:

- The scribe's basic notational vocabulary, and any notational variations or peculiarities;
- The musical layout, including clefs, staves, alignment, and so on;
- The textual layout, including underlay, abbreviations, and so on;
- Any other matters that strike you as interesting to do with the presentation of this song in this source.

Coursework Assignment 2 (worth 60%):

Write a description and analysis of the notations of ONE of the following four groups of songs [images of all are available via the course Moodle site]. Your submission may include extended prose between 2500 and 2750 words, in addition to illustrations, examples, diagrams, etc, as appropriate. You may also include recorded audio examples to illustrate points if you wish.

1. *In te concipitur, In ecclesiis celi gloria*, and *Ave purum vas argenti* (Oxford, Bodleian Library, Digby MS 2, ff.4v-5v)
2. *Nobilis, humilis* and *Ex te lux oritur* (Uppsala, Universitetsbiblioteket, MS C 233, ff.19v-20r and 50v-51r)
3. *Ave mundi spes Maria* (as found in Oxford, Trinity College, MS 34, ff.152v-153r, in the Dublin Troper, ff.54v-55r, and in Paris lat. 778, ff.182r-183r)
4. *Hodierne lux diei* (as found in Oxford, Trinity College, MS 34, f.154r, in the Dublin Troper, ff.52v-53r, and in Paris, Arsenal MS 135, ff.264r-265v)

If you choose group 1 or 2, you should aim to consider how the notation of the songs interrelates within a single manuscript, how the songs relate to their wider manuscript environment, and what we can learn from observing the same scribe's work on several different songs.

If you choose group 3 or 4, you should aim to consider how the notations of a single song vary between three manuscript witnesses, how those variations may relate to the different manuscript environments each inhabits, and what we can learn from observing three different scribes notating the same song.