
INTRODUCTION

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0.1 Biographical Details

The fragmentary 'Fayrfax' Book of Hours¹ held in the Bodleian Library, Oxford, contains, amongst other things, detailed notes on the births, baptisms and confirmations of the Fayrfax family of Deeping Gate, Northants.² One of the first entries records the marriage of William Fayrfax to his second wife, Agnes, second daughter of Robert Tanfeld, Keeper of Arms of Aldermanbery Church in London on 26 June 1445.³ Following entries contain information concerning William and Agnes' twelve children who were born between 1456 and 1472. The birth of their sixth child, Robert, appears as follows:

Robertus filius predictus Willmi et Agnetis natus fuit apud depyngate predictum xxiii die mensis Aprilis viz in festo Sancti Georgi martyris. circa hora decima ad nocte Anno domini M CCCC^{mo} lxxiii & Anno Regni Regis Edwardi quarti quarto. littera domilicalis g. Compatres eius fuerunt dominus Johannes Dykelow tunc temporis Rector de Peykyrke et dominus Johes Russetow vicarius de Estdepynge parochia Sancti Jacobi. Comater eius fuit Anna Pulter uxor Thomas Pulter Armigeri. Baptizatus vero fuit in ecclesia predicta Sti Jacobi in Estdepynge. Comater eius fuit ad episcopum magister Willius Witham decretorum doctor & tunc temporis Archidiaconis Leicestrie⁴

This entry records that Robert was born in Deeping Gate on 23 April 1464 at about 10pm. His godparents at his baptism in the church of St James, East Deeping, were Master John Dykelow, Rector of Peakirk, Master John

¹ Oxford, Bodleian Library, MS Lat. Liturg. e. 10.

² At that point Deeping Gate was in Northamptonshire, see: Christopher Saxton, *Christopher Saxton's 16th Century Maps: The Counties of England & Wales* (Chatsworth Library: Shrewsbury, 1992) pp 64-5. The village is now in Lincolnshire.

³ MS Lat. Liturg. e. 10 f 23v.

⁴ Ibid. f 24v.

Russetow, Vicar of East Deeping in the parish of St James, and Anna Pulter, wife of Thomas Pulter. Robert's sponsor before the bishop at his confirmation was Master William Witham, the Archdeacon of Leicester. It seems likely that Fayrfax lived in Deeping Gate with his parents and siblings for the earliest part of his life, on land rented from Margaret Beauchamp, dowager duchess of Somerset.

Very little is known about the early and latter years of the composer's life, given the lack of sufficient primary source material. I hope to put forward a number of theories in view of surviving material, secondary sources and circumstantial evidence, but these are only speculation. The celebrated seventeenth-century Oxford antiquary and historian Anthony à Wood, and William H. Gratton Flood, state that Fayrfax may have been a chorister in the Chapel Royal in around 1480 where he would have studied under Gilbert Banaster, but no evidence has been found to prove this theory.⁵

The Fayrfax family was obviously well connected and it is possible that a number of local dignitaries could have influenced Robert's early life. The relationship between the family and that of Margaret Beauchamp was evidently important. Many of the Fayrfax children's godparents were related to Margaret from her second marriage to Oliver St John. These included Edith St John, the Duchess' daughter, and Elizabeth Zouche, daughter of Lord Grey of Codnor and niece of Edith St John. In addition to local wealthy businessmen and merchants, important ecclesiastical figures such as the abbots of Peterborough and Bourne, the prior of Deeping, and clergymen associated with parishes surrounding Deeping Gate also acted as godparents and sponsors, and the influence of these individuals should not be overlooked.

The area around Deeping Gate was musically thriving; several local establishments are known to have had flourishing choral traditions. Two of the

⁵ William H. Gratton Flood, *Early Tudor Composers* (Humphrey Milford: London, 1925) pp 37–8.

most important of these institutions, the colleges at Fotheringhay and Tattershall were only about 20 and 30 miles away respectively. It is possible that Fayrfax may have served as a boy chorister in one of them, but unfortunately insufficient primary source material survives listing musicians associated with either college.

Another possibility is that Fayrfax sang in the Lady Chapel choir of one of the local monasteries. Connections existed between the family and the institutions at Crowland and Bourne; however, the number of associations between the Fayrfax family and the surrounding area point to Peterborough as a likely institution. The abbot of Peterborough twice acted as the sponsor to Fayrfax children: first, in 1445, to Margareta – daughter of Robert's father and his first wife, Elena; and second, in 1456, to William.⁶ It is known that Peterborough Abbey owned land in Deeping Gate, Welland fishery and Maxey in 1504 but the frequency with which members of the monastic community visited the land is unclear.⁷ Roger Bowers has investigated the work of the Lady Chapel Choir at Peterborough. He states that the exact number of boys in the choir is unknown but in Advent 1454, a payment of 3d a day was made to provide meat for 10 days. Bowers states that in view of this, there would probably have been no more than six or eight choristers.⁸

When Margaret Beauchamp died in 1482, her residence at Maxey Castle passed to her daughter from her first marriage to John Duke of Somerset, Margaret Beaufort. Three years later Margaret Beaufort's position was elevated and her power of influence increased when her son became King Henry VII. Robert's musical career may have owed a great deal to Margaret and it is

⁶ This is likely to have been Richard Ashton, Abbot of Peterborough 1439–1471. William Page (ed.), *The Victoria History of the County of Northamptonshire 2* (Archibald Constable: London, 1906) p 93.

⁷ NRA 25686 and 5870.

⁸ R. D. Bowers, *Choral Establishments within the English Church: their Constitution and Development, 1340–1542* (Unpubl. PhD. thesis: University of East Anglia, 1976) p 5035 (*sic*).

possible that he was involved in the musical life of her household. Her chapel – closely modelled on the Chapel Royal – was based at her primary residence at Collyweston, Northamptonshire. It is impossible that Robert was a boy chorister in her chapel as he would have been 23 years old when the residence at Collyweston came into her possession in 1487. The area from which Margaret recruited choristers was very large; in October 1504 a member of her musical establishment – and possibly its *magister choristarum* – Robert Cooper, was paid for riding to find choristers in London, Windsor, and the West Country.⁹ Margaret sponsored boys from her household to attend schools and to serve in other institutions further afield such as Higham Ferrers, Tattershall College, Winchester College, London Charterhouse, and the Chapel Royal.¹⁰ This interchange of personnel occurred between many of the most important musical institutions of the time, and it seems as though the Chapel at Collyweston – and perhaps Fayrfax as well – played its part in this. It is known that Margaret was recognized by the pope as patron of the feast of the Holy Name of Jesus. At her request, Margaret's dean – Henry Hornby – wrote an office for the feast which was used in addition to the mass of the Name of Jesus in her chapel.¹¹ It may not be insignificant that Fayrfax composed a motet, Magnificat and mass entitled 'O bone Jesu'.¹² As a composer, Fayrfax certainly contributed to the musical life of Margaret's chapel. On 4 December 1504 he received a payment from the countess' cofferer, most probably for musical duties.¹³ A few years

⁹ Fiona Kisby, 'A Mirror of Monarchy: Music and Musicians in the Household Chapel of Lady Margaret Beaufort, Mother of Henry VII', *EMH* 16 (1997) p 216.

¹⁰ *Ibid.* pp 217–8 and 220.

¹¹ Michael K. Jones and Malcolm G. Underwood, *The King's Mother: Lady Margaret Beaufort, Countess of Richmond and Derby* (CUP: Cambridge, 1992) p 176.

¹² It is also possible that this group of works was written for the Guild of the Holy Name in St Paul's Cathedral, as discussed below. See: David Mateer and Elizabeth New, '“In Nomine Jesu”: Robert Fayrfax and the Guild of the Holy Name in St Paul's Cathedral', *M&L* 81/4 (Nov 2000) pp 507–19.

¹³ Fiona Kisby, *The Royal Household Chapel in Early-Tudor London* (Unpubl. PhD thesis: University of London, 1996) p 481.

later, on 11 August 1507, he received a payment of 6s. 8*d.* from the Treasurer of the Chamber of Margaret's household, this time for a new mass.¹⁴

By the latter part of 1497 at the latest, Fayrfax's reputation – probably as both a singer and composer – was good enough to secure him a position as a Gentleman of the Chapel Royal. Members of the Royal Household Chapel frequently received corrodies at the nomination of the King. This involved religious houses and other institutions sponsoring the Gentlemen by granting an annual allowance of food, accommodation or money, or a combination of them. These payments varied and could be paid to a gentleman throughout his career or, alternatively, as a pension. On 6 December 1497 Fayrfax was granted a chaplaincy in the Castle of Snodhill, Herefordshire, vacant on the death of Richard Jacqueson.¹⁵ This position was surrendered only 11 months later on 16 November 1498 when it was granted to Robert Cooper, who – as discussed above – was subsequently Master of the Choristers in Margaret Beaufort's household. Two further corrodies were granted: first on 29 March 1498 at Selby, Yorkshire; and second in 1502 at the monastery of Stanley, Wiltshire. No extant source material shows exactly when this latter corrody was granted, but it was relinquished on 21 February 1513 to another member of the Chapel Royal, John Fyssher.

Over a period of years, Fayrfax's name moves up the lists of Gentlemen present at important state occasions.¹⁶ He is listed thirteenth at the funeral of Edmund – son of Henry VII – who died on 19 June 1500, ninth among those who attended the funeral of Henry's wife Elizabeth of York on 23 February 1503, and fifth at the funeral of Henry himself on 9 May 1509. The rate of his preferment increased more rapidly during the reign of Henry VIII. Fayrfax's

¹⁴ Loc. cit.

¹⁵ *Calendar of Patent Rolls Henry VII 2* (Public Records Office: London, 1916) p 121.

¹⁶ Unless stated otherwise, all information in the following two paragraphs is taken from: Nick Sandon, 'Fayrfax [Fairfax], Robert', *Dictionary of National Biography* 19 (OUP: Oxford, 2004).

name appears at the top of the list – ahead of William Cornysh Jr, Master of the Children at the time – at Henry’s coronation on 24 June 1509, at the funeral of Prince Henry on 27 February 1511, and at the Field of the Cloth of Gold in June 1520.

Fayrfax was certainly highly favoured by Henry VIII. From 1509 the King awarded him a lifetime annuity of £9. 2s. 6d. in addition to his regular salary as a Gentleman of the Chapel Royal. On 10 September 1514 he was appointed a Knight of the King’s Alms of Windsor, and was granted 12d. a day for life. On New Year’s Day every year between 1516 and 1520 Fayrfax gave Henry a number of gifts – mostly in the form of music manuscripts – for which he was greatly rewarded; receiving £20 on three occasions. Between December 1510 and December 1513 he received payments to cover the board and teaching of two choristers, William Alderson and Arthur Lovekyn.¹⁷ Although this duty was usually carried out by the Master of the Children of the Chapel Royal – a position to which he was never appointed – on several occasions other Gentlemen of the chapel were responsible for a number of the children.

During his time at the Chapel Royal, Fayrfax was awarded degrees from both Oxford and Cambridge universities. The first of these was a MusB from the University of Cambridge in 1501, awarded for having studied both *musica speculativa* and *musica practica* for a period of ten years.¹⁸ He was the first person to be awarded a DMus from both Cambridge and Oxford Universities in 1504 and 1511 respectively.¹⁹

¹⁷ Andrew Ashbee, *Records of English Court Music* vol. VIII (Scholar Press: Aldershot, 1995) pp 36, 195, 198, 202, and 207.

¹⁸ Nan Cooke Carpenter, *Music in the Medieval and Renaissance Universities* (Da Capo Press: New York, 1972) p 202.

¹⁹ An inscription in the Lambeth choirbook (London, Lambeth Palace Library MS 1) states that Fayrfax composed the Missa ‘O quam glorifica’ ‘for his forme in proceadinge to bee Doctor’. To which doctorate this refers remains unclear. The arguments put forward for both cases will be discussed below.

Whilst in London, Fayrfax was associated with a number of institutions other than the Chapel Royal. At some point between 5 May 1502 and 24 May 1503 he became a member of a guild of London parish clerks, the Fraternity of St Nicholas.²⁰ Other prominent musicians were also members of the Guild, and included the composers Edmund Sturges (joined 1469), William Cornysh Sr (joined 1480), Henry Prentes (joined 1502), William Pasche (joined 1513) and Nicholas Ludford (joined 1521).²¹ Records show that he was associated with another fraternity in London as well, the Guild of the Holy Name in St Paul's Cathedral. Payments were made to a 'm^r fairefox' and other members of the Chapel Royal on a number of occasions for singing services for the Guild.²² Several years after the composer's death, a payment was made by the Guild for a book of masses to be repaired and for the 'prykking of a masse which docter Fayrefax gave to Jhus Chapell', possibly Missa 'O bone Jesu'.²³ A further entry in 1529–30, records the restoration of a book 'that doct^r ffayrefax gave'.²⁴ David Mateer and Elizabeth New have pointed out that in this context the use of the word 'gave' is of particular note. On other occasions Fayrfax was paid for works, whereas on these occasions it is stated that the items were given to the Guild. In view of this, and the fact that the choirbook containing his works was restored so long after his death, Mateer and New speculate that Fayrfax may have had a close relationship with the Fraternity. The exact nature of this relationship, however, is unknown.

The composer was also connected in some way with the Benedictine Abbey in St Albans. He was certainly in the town on 28 March 1502 when he

²⁰ N. W. and V. A. James (ed), *The Bede Roll of the Fraternity of St Nicholas* (London Record Society: London, 2004) vol. 1, p 182.

²¹ Hugh Baillie, 'A London Gild of Musicians, 1460–1530', *Proceedings of the Royal Musical Association* 83rd Session (1956–1957) p 20.

²² David Mateer and Elizabeth New, '“In Nomine Jesu”: Robert Fayrfax and the Guild of the Holy Name in St Paul's Cathedral' pp 513–4.

²³ *Ibid.* p 514.

²⁴ *Ibid.* p 516.

received a payment of 20s from the Queen for the setting of an anthem in honour of Our Lady and St Elizabeth. This ‘anthem’ was probably the motet *Eterne laudis liliū*, the only one of his surviving works which contains references to these two important figures. This theory has been reinforced by the discovery of an acrostic in the text; the first letter of each line spells out the phrase ELISABETH REGINA ANGLIE.²⁵

Figure 0.1 – Text of *Eterne laudis liliū* Showing Acrostic

Eterne laudis liliū O dulcis Maria, te
Laudat vox angelica. Nutrix Christi pia.
Iure prolis glorie datur harmonia,
Salus nostre memorie omni agonia.
Ave radix, flos virginum, O sanctificata.
Benedicta in utero materno creata
Eras sancta puerperal et inviolata,
Tuo ex Jhesu filio, virgo peramata.
Honestis celi precibus virgo veneratis,

Regis excelsi filii visu iocundaris:
Ejus divino lumine tu nusquam privaris,
Gaudes sole splendidior virgo singularis.
Isachar quoque Nazaphat necnon Ismaria
Nati ex lesse stipite qua venit Maria;
Atque Maria Cleophe, sancto Zacharia,

Aquo patre Elizabeth, matre Sophonia,
Natus est Dei gratia Iohannes Baptista,
Gauderat clauso Domino in matrice cista.
Linee ex hoc genere est evangelista
Iohanes. Anne filia ex Maria ista
Est Iesus Dei Filius natus in hunc mundum,
Cuius cruoris tumolo mundatur in mundum.
Conferat nos in gaudium in evum
iocundum, Qui cum Patre et Spiritu Sancto
regnat in unum.
Amen.

Warren states – as Anthony à Wood had done – that Fayrfax was *informator chori* at the Abbey.²⁶ This seems unlikely in view of the regard with which he

²⁵ Andrew Carwood, sleeve note to: *The Works of Robert Fayrfax* Vol. 3, The Cardinal's Musick, cond. Carwood (CD GAU 160).

²⁶ Edwin B. Warren, *Life and Works of Robert Fayrfax 1464–1521* (American Institute of Musicology: [Dallas], 1969) p 19. More recently, Alison Weir states that Fayrfax was employed as organist and choirmaster of the Abbey, and that Henry himself persuaded the composer to

was held by Henry VIII as a Gentleman of the Chapel Royal, and the duties which were associated with that particular position. It is possible that Fayrfax may not have been connected explicitly with the Abbey itself, but with one of the three guilds which met within it. The first, and largest of these, was the Fraternity of the Holy Trinity. The members, both men and women of moderate wealth, numbered 700. These individuals met in the Chapel of St Rhadegund in the north transept whilst the wealthier residents joined the Guild of John the Baptist in St Peter's Church.²⁷ The second – and wealthiest at the dissolution – was the Fraternity of All Saints, or the Charnel Brotherhood. The Fraternity employed a chaplain in the chapel of St Andrew to intercede on behalf of its members, and to pray for the souls of the departed. Four singing boys were employed in the same chapel but by whom and for what purpose remains unclear. In addition to its presence in the Abbey, the Brotherhood maintained another chaplain in St Peter's parish church.²⁸ The final fraternity, founded in 1377, was the Guild of St Alban. The Guild, consisting of men and women of the upper and middle classes, met in the nave and conducted services at the altar of St Mary.²⁹ It was dissolved in around 1381 on account of a revolt against the abbot at the time, but it is possible that it may have been refounded in later years. Any one of these three fraternities could have commissioned music in honour of St Alban for use within the Abbey.

The Cult of St Alban also grew in popularity within the Abbey's monastic community. Between 1400 and 1539 three further lives of the martyr were

become a member of the Chapel Royal. Alison Weir, *Henry VIII: King and Court* (Jonathan Cape: London, 2001) p 16.

²⁷ Mackenzie E. C. Walcott, 'Inventory of the Abbey Church of St Alban, Herts., temp. Henry VIII., and survey of the monastic buildings, temp. Edward VI', *The Reliquary* 52/13 (April 1873) p 213.

²⁸ William Page (ed.), *The Victoria History of the County of Hertford 2* (Archibald Constable: London, 1902–14) p 480.

²⁹ Loc. cit.

produced by the monks, as well as a number of other new texts.³⁰ Liturgical devotions in honour of Alban would have been celebrated within the Abbey, and in particular on 22 June when the Abbey's patron saint was honoured. On this day the monks processed outside the precincts, carrying images and relics of the saint into the town centre, where a number of rituals were performed; a celebration that continued well into the sixteenth century.³¹

In view of the favour with which the Abbey was held by the royal family, it seems possible that Fayrfax could have composed his Missa 'Albanus' and *O Albane deo grata* – surviving as *O Maria deo grata* – either for one of the guilds or for the monastic community itself. In either case it seems certain that a work in honour of St Alban would have been given pride of place in the repertoire of the Abbey's choral establishment.

Fayrfax and his wife had other connections north of London. In 1516 'Master Doctor ffayrfax, Doctor of Music and Annes his wife' appear in the register of the Fraternity of the Holy and Undivided Trinity and the Blessed Virgin Mary in Luton Parish Church.³² The Guild consisted of local wealthy landowners and other less affluent men and women, over ninety seven percent of whom lived within a 30 mile radius of Luton.³³ In 1504, a Robert Ffayrford and his wife Angnes are also listed, and it is possible that this was the composer as well.³⁴ Throughout both sections of the manuscript where Fayrfax's name appears, places of residence are given for those who lived outside Luton. No place of residence is given for the composer, which suggests that he either had some close association with the town, or that he was so well known in the area

³⁰ James G. Clark, 'The St Albans Monks and the Cult of St Alban: the Late Medieval Texts', in *Alban and St Albans: Roman and Medieval Architecture, Art and Archaeology*, ed. P. Lindley and M. Henig, British Archaeological Association Transactions, (Maney: Leeds, 2001) p 218.

³¹ Ibid. p 221.

³² Luton, Luton Museum, MS. Z 257/3/2, f. 50v.

³³ Bedford, Bedfordshire and Luton Archives and Records, MS. 170 Lut, *Luton Fraternity Register Index*, p 1.

³⁴ Luton, Luton Museum, MS. Z 257/3/1, f. 32r.

that no residence needed to be given. How frequently Fayrfax visited the Guild, or for what purpose remains unknown.

For a short period of time in the last year of his life Fayrfax was seconded to the service of Cardinal Wolsey, who held the position of abbot of St Albans in commendam.³⁵ An exchange of personnel occurred on several occasions between Wolsey's household and that of the King. For a while, the choir of Wolsey's chapel was considered superior to the Chapel Royal. Henry was unhappy with this and so in the days following Christmas 1517 he requested a competition between the two choirs; each having to sight read an unknown work in the presence of the other, Wolsey, and the King himself.³⁶ Even the master of the King's chapel, William Cornysh, conceded that the Cardinal's choir was indeed superior, noting in particular the quality of the boys. In view of this, it seems surprising that Henry subsequently allowed his most celebrated composer to leave the Chapel Royal, particularly in order to work for Wolsey.

Fayrfax was certainly resident in St Albans for a while; the administration of his estate, granted to his wife – recorded in the Walingford Registry – states that he lived in the parish of St Andrew, a church just outside the north perimeter wall of the Abbey.³⁷ He died – possibly in St Albans itself – on 24 October 1521. A note in the Fayrfax Book states that he was buried in the Abbey, but the brass from the slab covering his grave was removed, and so the exact location is unknown.³⁸ The original brass evidently survived the Reformation; it was still present in 1643 when a sketch was made by John

³⁵ Roger Bowers, 'The cultivation and promotion of music in the household and circle of Thomas Wolsey', in *Cardinal Wolsey: Church, State and Art*, ed. S.J. Gunn and P.J. Lindley (CUP: Cambridge, 1991) p 193.

³⁶ *Ibid.* p 191.

³⁷ Hertford, Hertfordshire County Record Office, *Walingford Registry*, f. 180v.

³⁸ London, British Library, Add. MS. 5465.

Table 0.1 – Events Recorded in the Life of Robert Fayrfax

DATE	EVENT	WORK(S)
23 April 1464	Born – Deeping Gate, Lincolnshire	
6 December 1497	Granted chaplaincy at Snodhill Castle, Herefordshire	
16 November 1498	Snodhill chaplaincy granted to Robert Cooper	
29 March 1498	Granted corrody at monastery in Selby, Yorkshire	
c. 1500	Eton Choirbook copied	<i>Salve regina, Magnificat Regale, Ave lumen gratie</i>
1501	Received Mus.B. from Cambridge	
4 December 1501	Granted corrody at monastery in Stanley, Wiltshire	
28 March 1502	Received payment from Elizabeth of York in St Albans	<i>Eterne laudis lilium</i>
Between 5 May 1502 & 24 May 1503	Admitted to Fraternity of St Nicholas	
1503/4	Mass copied into books at King's, Cambridge	Missa 'Regali ex progenie'
1504	Member of Luton Fraternity	
1504	Granted Mus.D. from Cambridge	
4 December 1504	Received payment from Margaret Beaufort	
11 August 1507	Received payment from Margaret Beaufort for 'a newe masse'	Missa 'O bone Jesu'
December 1508	Mass copied into books at King's, Cambridge	
20 June 1509	Granted annuity	
26 June 1511	Incorporated D.Mus. at Oxford	Missa 'O quam glorifica'
21 February 1513	Stanley corrody surrendered	
September 1514	Made Poor Knight of the King's Alms, Windsor	
1515/16	Masses copied into books at King's, Cambridge	Missa 'Tecum principium' & Missa 'O bone Jesu'
24 October 1521	Died – St Albans (?)	

Philpot.³⁹ The inscription reads ‘Pray for the soules of Master Robert Fayrfax, doctor of music and Agnes his wife, the which Robert deceased the xxiiij day of October the year of our Lord God M^oV^cxxj on whose soules Jhu have mercy Amen’. The information outlined here is summarised in Table 0.1.

0.2 Fayrfax’s Works and the Sources Containing Them

Fayrfax composed both sacred and secular works. Of the sacred compositions he used the three most frequently set musical forms of the time – mass, Magnificat, and motet. His works survive in different states, depending upon the sources in which they can be found. All but one of his six masses is complete, two Magnificats survive intact, and five of his ten motets are complete. A further six works – a Magnificat, Nunc dimittis, sequence, and three motets – are recorded in various sources, but have subsequently been lost. In addition to the sacred works, eight secular songs survive. Therefore, a total of 32 works are known to have been written by him, and of the 26 that survive, eight are secular, and 18 are sacred. All of the composer’s known sacred works are recorded in Table 0.2, together with the number of voices for which they were composed, and the state in which they survive. This study will deal solely with the surviving sacred works.

The composer’s works are contained in all of the major musical sources of the early Tudor period. They were also copied into a wide variety of sources for a considerable period of time after his death, several of which date from after the Reformation. The earliest works were copied into choirbooks – large single volumes in which the voice parts were written not in score but in their own habitual zones of each two-page opening, typically with the highest voice at the top of the left-hand page and with the bassus at the bottom of the facing right-

³⁹ William Page, ‘The Brasses and Indents in St Albans Abbey’, *Home Counties Magazine* I (London, 1899) p 160.

hand page. These were most probably put on a lectern, or other suitable stand in a church or chapel, around which the choir would gather to sing. As choirs grew in size, choirbooks became impractical and so partbooks were produced. These were smaller books – usually in sets of four, five, or more – each of which contained a single voice-part.

The surviving sources from this period fall into two main categories: (1) complete; and (2) partial and fragmentary. Complete sources consist of choirbooks or complete sets of partbooks, in which the music for the entire work is present. Partial sources are those where, for example, one partbook of a set is missing, whereas fragmentary sources are where parts of one or more voices have been lost. Other types of source include inventories, lists and other documentation that record the presence, copying, re-binding or any other type of reference to a work, but not a copy of the work itself. The sources in which Fayrfax's works survive are listed in Table 0.3.

The table shows that Fayrfax's works appear in all of the major sources of the period: Eton, Lambeth, Caius, Peterhouse, and Forrest-Heyther; and two of the most important ones dating from the late-sixteenth or early-seventeenth centuries, Sadler and Baldwin.⁴⁰ Detailed studies of the manuscripts in Table 0.3 have revealed that the majority of the surviving sources were compiled after Fayrfax's death; only three are thought to date from before 1521 – the Eton, Carver, and Jena choirbooks. Many of the sources listed have been examined in considerable detail elsewhere, and so further discussion of most is not needed. However, a number are of particular interest when examining specific works and so are dealt with briefly below.

The earliest source of Fayrfax's works is the Eton Choirbook, commissioned for use in Eton College Chapel around the year 1500, and one of

⁴⁰ Library sigla for all MSS can be found in Table 0.3. Throughout this section manuscripts will be identified by their common name where one exists, rather than by siglum.

Table 0.2 – Sacred Works by Robert Fayrfax

WORK	VOICES	STATE
Missa 'Albanus'	5	Complete
Missa 'O bone Jesu'	5	Complete
Missa 'O quam glorifica'	5	Complete
Missa 'Regali ex progenie'	5	Complete
Missa 'Sponsus amat sponsam'	4	Fragmentary
Missa 'Tecum principium'	5	Complete
Magnificat ' O bone Jesu'	5	Complete
<i>Magnificat Regale</i>	5	Complete
Magnificat (Title unknown)	N/K	Lost
Nunc dimittis (Title unknown)	N/K	Lost
<i>Ave cujus conceptio</i>	5	Lost
<i>Ave dei patris</i>	5	Complete
<i>Ave lumen gratie</i>	4	2 nd part fragmentary
<i>Eterne laudis lilium</i>	5	Complete
<i>Gaude flore virginali</i>	N/K	B only
<i>Lauda vivi alpha</i>	5	T lost
<i>Maria plena virtute</i>	5	Complete
<i>O bone Jesu</i>	5	M only
<i>O lux beata trinitas</i>	4	Complete
<i>O Maria deo grata</i>	5	T lost
<i>Quid cantemus innocentes</i>	5	Lost
<i>Salve regina</i>	5	Complete
<i>Stabat mater</i>	5	Lost
<i>Sequence</i>	N/K	Lost

the three large choirbooks that survive from the early Tudor period. Originally this volume contained approximately 224 leaves, but only 126 now survive.⁴¹ The index of the Choirbook remains intact, and this records that 93 works were copied into it, of which 43 survive complete, 21 are incomplete or fragmentary, and 29 are missing. Six of Fayrfax's works were originally present: *Salve regina* survives complete; the first part of *Ave lumen gratie* is complete, but the second part is fragmentary; and *Ave cujus conceptio*, *Quid cantemus innocentes*, and *Stabat mater* have been lost altogether. Unfortunately none of these works are to be found in any other surviving sources of the period. *Magnificat Regale* is listed but does not survive, although it can be found in other contemporary manuscripts.

There is a considerable amount of confusion regarding Missa 'O quam glorifica'. Scholars agree that it was composed for a doctorate as an inscription in the Lambeth Choirbook states that it was written by 'Doctor ffeyrfax for his forme in proceadinge to bee Doctor'.⁴² However, for which University it was written – Cambridge (1504) or Oxford (1511) – remains uncertain. Bray has argued that the mass was composed for Fayrfax's Oxford doctorate. He cites the phrase 'sua eruditio potest stare pro forma ad incipiendum in musica'⁴³ to prove that Fayrfax was exempt from writing the 'form' – or compositional exercise – for Cambridge, and so it must have been written for Oxford.⁴⁴ Carpenter suggests that the composer may have been required to compose a Mass for his Cambridge doctorate, but that nothing in the surviving primary

⁴¹ For the most detailed and most recent study see M. Williamson, *The Eton Choirbook: its Historical and Institutional Background* (Unpubl. DPhil thesis: University of Oxford, 1995).

⁴² London, Lambeth Palace Library, MS. 1, f.8^v.

⁴³ 'His erudition can stand in place of the form to incept in Music' (Bray's translation), Roger Bray, 'Music and the Quadrivium in Early Tudor England' *M&L* 76/1 (February 1995) p 7.

⁴⁴ Roger Bray, 'Introduction' in edition of Missa 'O quam glorifica' and 'Missa 'Tecum principium'.

Table 0.3 – Sources Containing Fayrfax’s Works

NUMBER	KEY ⁴⁵	SOURCE	TYPE/ DESCRIPTION	COMMON NAME	DATE
1	n/a	Bristol, All Saints’ Church	Inventory		before 1524
2	607	Cambridge, Gonville & Caius College Library MS 667	Choirbook	Caius Choirbook	1520s
3	608	Cambridge, King’s College Library	Inventory		1529
4	616	Cambridge, St John’s College Library MS K. 31	B (pair with MS Dd.13.27)	UJ	c1525-30
5	612-5	Cambridge, University Library MS 471-74	4 Partbooks (T lacking)	Peterhouse Partbooks	c1539-41
6	617	Cambridge, University Library MS Dd.13.27	Ct (pair with MS K. 31)	UJ	c1525-30
7	621	Chelmsford, Essex CRO MS D/DP.Z6/1	B		c1590 – c1610
8	51	Chelmsford, Essex CRO MS D/DP.Z6/2	B		c1590
9	623	Edinburgh, National Library of Scotland, Advocates Lib. MS 5.1.15	Choirbook	Carver Choirbook	c1503-13 and 1546-c1565
10	n/a	Evesham, Evesham Almonry Museum, 1537 Matthew Bible		Alcetur Bible	before 1537
11	n/a	Jena, Thüringer Universitäts- und Landesbibliothek MS 9	Choirbook	Jena Choirbook	1515-16

⁴⁵ As classified in May Hofman and John Morehen, *Latin Music in British Sources c1485–c1610* (Stainer and Bell: London, 1987).

12	152	London, British Library Add. MS 29246	Lute arrangement	Paston MS	Late 16C-early 17C
13	201	London, British Library Add. MS 34191	T		1520s
14	239	London, British Library Roy. Mus. Lib. MS 24.d.2	Score	Baldwin's Commonplace Book	1586- c1606
15	629	London, British Library Add. MS 5054	Score		mid 18C
16	634	London, British Library Add. MS 11586	Score	Burney's papers	18C
17	674	London, British Library Add. MS 34049	C	Paston MS	late 16C-early 17C
18	689	London, British Library Harley MS 1709	M		late 1520s
19	806	London, British Library Roy. Mus. Lib. MS 24.h.11	Score		late 18C
20	813	London, Lambeth Palace Library MS 1	Choirbook	Lambeth Choirbook	1520s
21	825 a-c	London, Royal College of Music Library MS 2035 i-iii	C A B	Paston MS	late 16C-early 17C
22	833	Oxford, All Souls College, Codrington Library MS SR 59.b.13	Choirbook fragments		early 16C
23	835	Oxford, Bodleian Library MS lat. Liturgy. A.9	Choirbook fragments		c1490
24	838-42	Oxford, Bodleian Library MS Mus e.1-5	Tr M Ct T B	Sadler Partbooks	1568-81
25	850-4	Oxford, Bodleian Library MS Mus. Sch. E376-80	Tr M Ct T B	Forrest-Heyther Partbooks	before 1531

26	425-8	Oxford, Bodleian Library, Tenbury Wells, St Michael's College Library MS 341-44	Tr M Ct T (B missing)	Paston MS	c1600
27	429-33	Oxford, Bodleian Library, Tenbury Wells, St Michael's College Library MS 354-58	Tr M Ct T B	Paston MS	early 17C
28	461	Oxford, Bodleian Library, Tenbury Wells, St Michael's College Library MS 1464	B		c1570s
29	462-4	Oxford, Bodleian Library, Tenbury Wells, St Michael's College Library MS 1469-71	Tr M B	Paston MS	late 16C-early 17C
30	882-6	Oxford, Christ Church Library MS Mus. 979-83	Tr M Ct T B	Baldwin Partbooks	late 16C
31	888	Oxford, Merton College Library MS 62.F.8	Index		early 16C
32	n/a	Oxford, New College MS 368/1	Choirbook fragments	New College fragments	
33	627	Windsor, Eton College Library MS 178	Choirbook	Eton Choirbook	c1500

Table 0.4 – Sources of Fayrfax's Works

WORK	SOURCES
Missa 'Albanus'	2, 5, 16, 20, 25
Missa 'O bone Jesu'	1, 2, 4, 5, 6, 11, 25, 20
Missa 'O quam glorifica'	2, 5, 20, 22
Missa 'Regali ex progenie'	2, 3, 4, 6, 20, 25
Missa 'Sponsus amat sponsam'	8, 12, 27
Missa 'Tecum principium'	2, 5, 20, 25
Magnificat 'O bone Jesu'	5, 7, 17, 20, 26, 27, 29
<i>Magnificat Regale</i>	2, 4, 5, 6, 13, 20, 23, 33*
<i>Ave cujus conceptio</i>	33*
<i>Ave Dei patris filia</i>	5, 9, 18, 24
<i>Ave lumen gratie</i>	33
<i>Eterne laudis lilium</i>	4, 5, 6, 9, 20, 28, 31
<i>Gaude flore virginali</i>	28
<i>Lauda vivi alpha</i>	4, 5, 6, 18, 28, 31
<i>Maria plena virtute</i>	5, 14, 24, 28, 31
<i>O bone Jesu</i>	18
<i>O Maria/Albane Deo grata</i>	5, 13, 28
<i>Quid cantemus innocentes</i>	33*
<i>Salve regina</i>	33
<i>Stabat mater</i>	33*

* Reference to work is included in contents of source, but music is not extant.

source material states that this was the case.⁴⁶ Sandon agrees with Carpenter, stating that Fayrfax's Oxford doctorate may have been an honorary degree, rather than having been judged by examination, and thus the mass was written for Cambridge.⁴⁷

Recent research regarding the notation of the mass may shed some light on the matter. In the surviving sources, the metrical structure of Missa 'O quam glorifica' is different from the other masses. Rather than the usual bipartite or tripartite structure, the treble and tenor are composed in C , and the mean, contratenor and bass in O throughout. The general structure is the same as the other masses: a major section ends at the words 'qui tollis peccata mundi, miserere nobis' in the Gloria; 'descendit de caelis' in the Credo; after the first 'Hosanna in excelsis' in the Sanctus; and after the second 'miserere nobis' in the Agnus Dei. Bray has suggested that the metrical structure of the mass was not originally conceived in this way. He believes that all voices were composed in C in the first half of each movement, and O in the second, and that the surviving version was a contemporary arrangement, the original being deemed too difficult to perform.⁴⁸ Fayrfax's mass seems not to be the only work that was arranged in this way; an anonymous mass and other fragments also show that this practice may have occurred.⁴⁹

When this is taken into account, it becomes apparent that dating the work on stylistic grounds is problematic as the work is not truly representative of Fayrfax's style at that time in comparison to his other surviving works. The dating of the Caius and Lambeth Choirbooks – in which the mass appears and which are two of the most important sources containing the composer's works –

⁴⁶ Nan Cooke Carpenter, *Music in the Medieval and Renaissance Universities* (Da Capo Press: New York, 1972) p 207.

⁴⁷ Nick Sandon, 'Fayrfax [Fairfax], Robert', *Dictionary of National Biography* 19 p 202.

⁴⁸ Roger Bray, 'Music and the Quadrivium' p 13.

⁴⁹ *Ibid.* pp 13-14.

is of no use either, both books having been compiled after 1520.⁵⁰ If the original notation was as Bray suggests, it is possible that the mass could have been written for either degree, and so only the non-musical evidence can be considered significant.

One of the primary reasons for scholars suggesting that Missa 'O quam glorifica' was written for the earlier degree at Cambridge, rather than Oxford, is that no other methods of examination from Cambridge at the time are recorded. However, the Cambridge Grace Books reveal that in 1505, Humphrey Frevill was awarded a doctorate having studied for three years in Cambridge and further afield in England.⁵¹ Although it would have been impossible for Fayrfax to reside in Cambridge for considerable periods of time given his commitments at the Chapel Royal, it is possible that he may have visited sporadically and provided music for use within the University. It may not be insignificant that the copying of Missa 'Regali ex progenie' into the repertory at King's College occurs between the time that he was awarded his baccalaureate and doctorate. It could therefore have been the production of this mass – along with other works now lost – that was required by Cambridge in order for Fayrfax to receive his doctorate, and not Missa 'O quam glorifica'. This arrangement would have been beneficial to the University as well. They would have received numerous works from one of the leading composers of the time, rather than just the one due to them if he had been judged solely by examination. It also seems more likely that an informal arrangement would have been considered by Cambridge as they had already awarded the composer a baccalaureate.

Why Fayrfax was awarded a doctorate from Oxford some seven years later still remains a mystery. It seems unlikely that it was to increase his rate of promotion within the English musical establishment because he already held

⁵⁰ David Skinner, 'Discovering the Provenance and History of the Caius and Lambeth Choirbooks', *EM* 25/2 (May 1997) pp 262 and 248.

⁵¹ Nan Cooke Carpenter, *Music in the Medieval and Renaissance Universities* p 207.

one of the most prominent positions within it. Perhaps it was an honorary degree, given for his outstanding contribution to the musical life of the country, and he simply donated Missa 'O quam glorifica' to the University in return for the award and it was not actually examined, but was performed on the day of commencement.

Missa 'Tecum principium' survives in four sources: in the Lambeth and Caius choirbooks; and in the Peterhouse and Forrest-Heyther partbooks. Although most of the mass is identical in all four sources, the Gloria in Lambeth and Caius (*Version A*) is different from the version copied into Peterhouse and Forrest-Heyther (*Version B*). The first half of the movement and the last tutti are the same in both cases but the two semi-choir sections at the start of the half in C – beginning with the words 'Qui tollis peccata mundi' – are different. Table 0.3 shows the variations of scoring in the sources; shaded cells highlight where differences occur.

Table 0.5 – Differences in Versions A and B of Missa 'Tecum principium'

MENSURATION	TEXT	SCORING	
		VERSION A	VERSION B
O	Et in terra pax...	M/CT/T	M/CT/T
	Laudamus te...	TR/CT/B	TR/CT/B
	Gratias agimus tibi...	TR/M/CT/T/B	TR/M/CT/T/B
	Domine Fili unigenite...	CT/T/B	CT/T/B
	Domine Deus...	TR/M/CT/T/B	TR/M/CT/T/B
C	qui tollis... miserere nobis...	M/T/B	TR/M/CT
	qui tollis... suscipe deprecationem...	TR/CT/T	CT/T/B
	qui sedes...	TR/M/CT/T/B	TR/M/CT/T/B

The versions differ in two other significant ways as well: (1) in length – counting in semibreves; and (2) in terms of the use of pre-existing material. The whole mass is based upon the *Tecum principium* plainchant, which is used as a

cantus firmus in different ways throughout the work. In the first semi-choir of the second half of *Version A* the plainchant is found in the tenor, whilst in *Version B* it is not used at all in either of the two reduced sections. These differences will be discussed in greater detail in following chapters.

A number of works survive only in a fragmentary state. Only one voice of the motets *O bone Jesu* and *Gaude flore virginali* remains. The former is to be found in a medius partbook dating from the late 1520s, Harley 1709, and the latter in a bass partbook from the 1570s, Oxford, Bodleian Library, Tenbury Wells, St Michael's College Library MS 1464 – each partbook being one of an original set of five. Although only one voice survives, sections of *O bone Jesu* are the same as material in the mass of the same name and so can be reconstructed with a certain amount of confidence.⁵² The same is not true, however, of *Gaude flore virginali*. Although it has been suggested that the work formed part of the 'Regali' group of works, there is no evidence to show that any musical material was shared between this work and the other two in the group.

The Peterhouse Partbooks – most probably compiled in haste for use in Canterbury Cathedral in about 1540, shortly before the Cathedral was refounded – provide a fruitful repertoire of early Tudor works.⁵³ Unfortunately the tenor partbook has been lost, as have several leaves from the beginning and end of the treble book. Of the eleven of Fayrfax's works that appear in the manuscript, all except two can be completed from other sources. Although *Lauda vivi alpha* and *O Maria deo grata* do survive in other sources, none of these is complete. The Peterhouse source therefore provides the largest amount of surviving material, but the tenor has been completely lost from both works, as has the treble of *Lauda vivi alpha*. Some of the material in *O Maria*

⁵² Where possible, sections have been reconstructed in: Ann Signe Edahl, *The Use of Pre-existing Material in the Early Tudor Mass Cycle* (Unpubl. PhD thesis: University of Wisconsin-Madison, 1993) pp 363–370. I will discuss this in more detail in Chapter 4.

⁵³ Nick Sandon, 'The Henrician Partbooks at Peterhouse, Cambridge', *PRMA* vol. 103, (London, 1976–7), p 130.

deo grata is shared with Missa 'Albanus' and so can be completed in a similar way to *O bone Jesu*, but not to such a great extent. In his reconstruction of the work, Sandon noted that the nine-note motif used to structure Missa 'Albanus' fits in the tenor in the tutti sections of *O Maria deo grata*.⁵⁴

Fayrfax's only four-part mass, Missa 'Sponsus amat sponsam', survives in a fragmentary state. The bass is complete, as are two of the tutti sections in the Gloria and one in the Credo, but the rest has not survived. Some sections of the mass – along with *Ave dei patris* and Magnificat 'O bone Jesu' – appear in lute tablature in one of the Paston manuscripts.⁵⁵

All except two of the sources containing Fayrfax's sacred works are thought to have originated in England. Paradoxically, the two that were not compiled in England are the earliest surviving sources of the composer's works. The first is the Carver Choirbook, named as such because around half of the works within it are by the Scottish composer Robert Carver. The book was compiled in a number of different stages over a period of some sixty years, probably under the supervision of Carver himself. The two Fayrfax works included – *Eterne laudis liliium* and *Ave dei patris* – were probably copied towards the beginning of the choirbook's production in about 1508.⁵⁶

The second source that does not originate in England is the Jena Choirbook. This manuscript was copied between 1515 and 1516 by two scribes in the workshop of Petrus Alamire in the Netherlands.⁵⁷ It contains only two works, Fayrfax's Missa 'O bone Jesu' and the anonymous motet ...*Resurrexio Christi*, both of which are incomplete. It has been suggested that the motet

⁵⁴ Both *Lauda vivi* and *O Maria deo grata* have been completed by Sandon, and published by Antico Edition.

⁵⁵ London, British Library Add. MS 29246.

⁵⁶ Glynn E. Jenkins, *Latin Polyphony in Scotland, 1500–1560 (With Studies in Analytical Techniques)* (Unpubl. PhD Thesis: University of Exeter, 1988) p 86.

⁵⁷ Flynn Warmington, 'Thüringer Universitäts- und Landesbibliothek MS 9', Herbert Kellman (ed.), *The Treasury of Petrus Alamire: Music and Art in Flemish Court Manuscripts, 1500–1535* (University of Chicago Press: Chicago, 1999) p 100.

might be by Fayrfax as well, but as only fragments survive, and as the work does not appear in any other source this cannot be confirmed.⁵⁸ A number of other choirbooks originating from Alamire's workshop contained all of the music required for one feast day – for example, Brussels, Bibliothèque royale de Belgique MS 215-6.⁵⁹ As the anonymous motet contains the line 'O bone Jesu', Warmington has suggested that it would have provided a link with the mass of that name. It is thought that ...*Resurrexio Christi* is part of *Anima Christi*, an elevation motet sung during mass. Both Missa 'O bone Jesu' and ...*Resurrexio Christi* would therefore be suitable for use at a mass in honour of the Holy Name of Jesus.⁶⁰

⁵⁸ Roger Bray, 'Introduction' in edition of Missa 'O bone Jesu' (EECM).

⁵⁹ Herbert Kellman, 'Brussels, Bibliothèque royale de Belgique MS 215-6', Herbert Kellman (ed.), *The Treasury of Petrus Alamire* p 67.

⁶⁰ Flynnne Warmington, 'Thüringer Universitäts- und Landesbibliothek MS 9' p 100.

PART 1:
THE EPISTEMOLOGICAL
FRAMEWORK

CHAPTER 1: Problems of Subjectivity

1.1 Introduction

Any people which can be said to have music have also a musicology, though they may not have a fully elaborated scholarly system. The more advanced the system, the more elaborate will be the system: the degree of development of the one determines the task of the other.¹

The analysis and theory of music have probably existed for as long as music itself; both have a long history and for many centuries they have been closely linked. Whilst some scholars believe that analysis and theory are disciplines in their own right, others consider analysis to be a subcategory of theory. Ian Bent's reasoning for the latter is that – in his opinion – theory can exist hermetically without the need for any analysis, whereas analysis relies heavily upon theory.² Historically, it can be seen that from a practical perspective, music analysis developed with theory, particularly during the fifteenth and sixteenth centuries. As a scholarly tool, analysis can be found in the theoretical writings of Aaron and Glarean in their exploration of modality, particularly regarding the works of Josquin.

As an intellectual pursuit within the Anglo-American academy, theory and analysis have been separated into different disciplines within musicology only since the beginning of the twentieth century. However, since the 1980s there has been a growing trend to integrate the historical, theoretical and analytical strands of musicology in order to create a holistic study of music. The thoughts

¹ Guido Adler, 'Umfang, Methode und Ziel der Musikwissenschaft' (1885), in Bojan Bujić, *Music in European thought 1851–1912* (CUP: Cambridge, 1988) pp 348–9.

² Forward to Cristle Collins Judd, *Reading Renaissance Music Theory: Hearing with the Eyes* (CUP: Cambridge, 2000) p xv.

of many scholars are articulated particularly clearly by Patricia Carpenter, who has championed this ideal. Her beliefs are outlined by Hatch and Bernstein; ‘the theory and analysis of music become most meaningful when placed in a historically defined intellectual context’.³ This is in line with the thoughts of the German founders of *Musikwissenschaft* – such as Guido Adler – at the beginning of the twentieth century, whose intentions were that the disciplines should be studied side by side. Margaret Bent believes that this has always been the case, writing that ‘good scholarship has always combined wide-ranging consideration of context with deep attention to the notes, and needs no new labels to justify it’.⁴

One of Adler’s aims within *Musikwissenschaft* was to trace the growth and development of styles by bringing together the different strands of music. Adler believed that musicology as a whole had two main branches: (1) historical – which traced the ‘history of music according to period, nationality, state, province, region, city, school, [and] composer’; and (2) systematic – which established the ‘dominating principles in the individual branches of music’.⁵ Although analysis is not mentioned as such, one of the primary areas of investigation within Adler’s ‘systematic’ branch states that harmony, rhythm and melody should be studied. Adler’s knowledge of and interest in the analysis of Renaissance music is evident in the main body of his text. Within this he describes the methodologies that a scholar should pursue when studying a work of this period:

His first concern when presented with a composition may be said to be one of palaeography. If the notation is different from that in general use today, the work

³ Christopher Hatch and David W. Bernstein (eds.), *Music Theory and the Exploration of the Past* (University of Chicago Press: Chicago & London, 1993) p 2.

⁴ Margaret Bent, ‘The Grammar of Early Music: Preconditions for Analysis’, in Cristle Collins Judd (ed.), *Tonal Structures in Early Music* (Garland: New York and London, 1998) p 17.

⁵ Guido Adler, ‘Umfang, Methode und Ziel der Musikwissenschaft’ (1885), in Bojan Bujić, *Music in European thought 1851–1912* pp 354–5.

must be transcribed, and this itself will provide important information needed to identify and date the work. Next comes the task of examining its construction. The first task is to establish distinguishing rhythmic features—whether, and if so how, the music is barred, what time-relations are to be found in its different sections and how these are grouped and organized. After this comes tonality, the tonal structure first of individual parts and only later that of the whole—an order or procedure common in the Middle Ages though now rightly no longer usual. Individual parts are next studied with a view to establishing cadences, transitional passages and accidentals in relationship to the piece as a whole. Then the polyphonic structure must be studied: the range and spacing of the parts, the intervals at which imitative passages occur and the sequence of the entries, the appearance of themes in augmentation, diminution, inversion and reversion, the disposition of consonances and dissonances, and whether these are prepared and resolved or free-standing. The movement of the parts in relation to each other is traced, the relationship between main and subsidiary themes, the presence of a cantus firmus and its use and articulation, the development of themes and motives—all these points are taken into account and definitively established. Should there be an accompanying text, this must be critically examined—in the first place simply as poetry, then with regard to underlay and musical setting. Care must be taken to examine the accentuation and prosody in relation to the rhythms of the music; and this study of the text will provide further valuable assistance in coming to conclusions about the work.⁶

The purpose of this analytical method was twofold: (1) to determine the work's composer; and (2) to place the work within its wider cultural and historical context. In order to achieve the latter, Adler advocated the use of non-musical disciplines such as palaeography, literary history and philology, and liturgical history in addition to biographical studies of musicians and the institutions in which they worked. The primary function of this investigation was to trace the growth and development of musical styles, from which young musicians could learn the art of composition, rather than to examine individual works for their own sake. By doing so, composers could learn their trade by studying works of

⁶ Guido Adler, 'Umfang, Methode und Ziel der Musikwissenschaft' p 349.

'the ancients'. Adler's methodology is of great importance as it expresses the views of a scholar who had no preconceptions about the analysis of Renaissance polyphony. The methods employed and developed stem from the music itself rather than from any external factors other than context.

This systematic approach to analysis amplified by Adler has been challenged by a number of commentators, notably Joseph Kerman. In his article 'How We Got into Analysis, and How to Get Out', published in 1980, and also in his book *Musicology*⁷ published five years later, Kerman attacked the type of analysis which was based upon scientific inquiry stating that 'These new analyses are, as always, conducted at different levels of sophistication and insight. Even the best of them leave the reader uneasy. They come up with fascinating data and with undoubtedly relevant data; yet one always has a sinking feeling that something vital has been overlooked'.⁸

The 'something' that had been overlooked was – in Kerman's view – everything 'that makes music affective, moving, emotional, expressive'.⁹ He advocated a 'humane' criticism of music and an analysis that existed 'to articulate the concept of organicism'.¹⁰ Organicism – which originated in the nineteenth-century – considered that a work was greater than the sum of its parts. This theory gained momentum within a number of different disciplines, including literary criticism and biology by proponents of *Gestalt* psychology. 'Organismic biology', for example, saw a movement away from the study of

⁷ Joseph Kerman, *Musicology* (Fontana Press/Collins: London, 1985) Published in the USA as *Contemplating Music: Challenges to Musicology* (Harvard University Press: Cambridge, Mass., 1985).

⁸ Joseph Kerman, 'How We Got into Analysis, and How to Get Out', in *Write All These Down: Essays on Music* (University of California Press: Berkeley and Los Angeles, 1994) p 19. First published as same title in *Critical Inquiry*, 7 (1980) pp 311–31. Some of the issues arising from Kerman's study, and the ways in which these can be addressed within contemporary music scholarship are discussed in: Kofi Agawu, 'How We Got Out of Analysis, and How to Get Back In Again', *MA* 23/2-3 (July-October 2004) pp 267–86.

⁹ Joseph Kerman, *Contemplating Music* p 73.

¹⁰ Joseph Kerman 'How We Got into Analysis, and How to Get Out' p 19.

structure in order to examine the human body as a whole.¹¹ Within music, the growth and evolution of musical fragments and ideas were considered to unfold in a teleological or goal-oriented manner; each musical phrase was thought to have been composed as a result of the preceding phrase, and only in the context of a broader compositional process. Kerman moved from regarding music as text – as a lifeless object confined to the page – to viewing a composition as an ‘organic unity’, and as an experience to be perceived by the listener. This sowed the seeds for the advent of a new type of music analysis within the broader concept of ‘New Musicology’.

1.2 Problems with the Analysis of Renaissance Polyphony

The reasons for the dearth of analytical inquiry in Renaissance polyphonic music are numerous. The main factor is that modern analysis – as an academic discipline – was developed to study music of the eighteenth century, and so analytical tools have been developed to look at music from this period rather than from earlier periods. As a result, existing analytical methodologies have been geared towards the explication of tonality in late-eighteenth-century and nineteenth-century texts. It has only been in recent years that scholars have paid more attention to the analysis of Renaissance polyphony. This renewed interest was a result of the ‘Early Music’ revival in the 1970s, during which, scholars began to take an academic interest in the music of this period from both an analytical and historical perspective. Methods for analysing Renaissance polyphonic works are therefore still in their infancy owing to this relatively recent rediscovery of the music.

Another stumbling block in the analysis of renaissance polyphony is the fact that there is no widely accepted terminology for the analysis of music that is

¹¹ Ruth A. Solie, ‘The Living Work: Organicism and Musical Analysis’, *19th-Century Music*, 4/2 (Fall 1980) p 151.

based upon pre-tonal principles. Analysts of early music have not matched Heinrich Schenker's contribution to the analysis of music of the eighteenth and nineteenth centuries in any way. Two options must be considered in this respect in order to enhance our understanding of early music: either a new analytical vocabulary must be found; or the terminology of scholars such as Schenker must be adapted to fit music of the earlier periods. The latter option is fraught with controversy. Works of vocal polyphony were not constructed according to the kind of temporal tonal plan that Schenker's analytical method was designed to reveal. Instead of existing in time, therefore, their relationship to their tonal centre exists in space – a space defined by vocal compasses and the range of available accidentals. Two questions in particular arise from this: (1) Is it appropriate to apply methods of analysis which were intended for tonal music to pre-tonal music?; and (2) It is clearly incorrect to describe a modal work as being in a key, but is it correct to say that it has a tonal centre? If not, then how can it be described? These are questions that scholars have attempted to answer but no satisfactory conclusions have been drawn. By studying contemporary treatises it can be seen that vocabulary did exist to describe some aspects of pre-tonal music, particularly that of modal theory. The writings of these theorists may be able to provide information, methodologies and vocabulary which will help to direct new investigations.

Since the 1970s scholars have concentrated on the analysis of music written before 1600 with varying degrees of success. It is very difficult to develop a single analytical technique, within the boundaries of early music, which can be applied to every composition. Diverse cultural climates imbue music and generate national characteristics or styles that change over time. A universal analytical method would be of considerable use not only to those who approach the music from an analytical perspective but to all who study music.

However, a number of problems have been identified by scholars such as Nicholas Cook when only one type of analysis is used:

...the various methods of analysis are frequently pursued in isolation from each other or, what is worse, in acrimonious rivalry with each other. As often as not an analyst will adopt one method and ignore or denigrate the others: so that you get the motivic analyst, the Schenkerian analyst, the semiotic analyst and so forth. Each applies his particular method to whatever music comes his way, and at its worst the result is the musical equivalent of a sausage machine: whatever goes in comes out neatly packaged and looking just the same. This especially happens when the analyst has come to believe that the purpose of a piece of music is to prove the validity of his analytical method, rather than the purpose of the analytical method being to illuminate the music: in other words, when he has become more interested in the theory than its practical application.¹²

Although this concern is directed at existing methodologies, it can equally be applied to early music, which at present lacks such procedures. Fortunately there are very few examples nowadays where analytical methods are 'pursued in isolation from each other' within published works. A number of reasons for this type of scholarship can be identified and explained. During the 1980s only two ways of publishing analytical research were available to scholars: conference papers and journal articles. In view of the time and word limits imposed on these, each analytical method could not be investigated within a single publication. Scholars therefore concentrated on one type of analysis which could easily be brought into the public domain in the ways available to them. No book-length study could have been produced owing to the infancy of analysis, particularly regarding pre-tonal music. There is often a great deal of overlap within the methods listed by Cook; motivic treatment occurs on all structural levels of Schenkerian theory for example. The 'sausage machine' type of analytical method referred to by Cook did prevail for a few years in the

¹² Nicholas Cook, *A Guide to Musical Analysis* (J. M. Dent: London, 1987) p 2.

early 1980s. The author's words are therefore probably written in response to analysts who – during that short period – attempted to apply a single method to a wide variety of music. Within current musical scholarship numerous methodologies are frequently employed by analysts whilst examining a single work. Plurality is now welcomed and encouraged within the academy.

Methodologies developed in order to study individual compositions may provide more detailed analyses than those which address a large number of works. Although the former type of analysis may be more successful in uncovering hidden structural devices and characteristics of a piece, several problems can be identified with this method of investigation. Without providing close comparisons to other similar works, the analyst is unable to provide convincing evidence to prove that the characteristics revealed are specific to the individual composition or composer. In order to investigate this more thoroughly, it is imperative that other works are also considered. Methodologies only geared towards individual works may not contain the necessary analytical tools needed to carry out this type of comparison. When differing methods are employed in this way, a critique of the methods involved and the way in which conclusions about the music have arisen become the primary area of investigation, rather than the music itself. This type of criticism has hampered the development of previous – and new – analytical techniques, and is one of the greatest problems encountered within the analysis of the pre-Baroque repertoire.

The analytical methods employed by scholars of early Tudor music in particular are diverse. The techniques employed frequently depend upon the number of works under examination and the way in which the analysis is approached. One of the reasons why so many analyses in this area fail to convince and engage is because from the outset writers neglect to state their

aims and objectives, and whether these are appropriate and achievable.¹³ It is my view that analyses are far more convincing when scholars begin with a clear aim and methodology; whether it be to discover hidden aspects of the music or to deepen our knowledge of a piece to provide a better performance. It is for this reason that I have stated by aims and objectives clearly from the start.

1.3 Approaches to Music Analysis

As in the history of music theory, boundaries are constantly being drawn between the different approaches to the analysis of early music: those who wish to study music with respect to its historical background and those who remove works from their original context; those who study the structural detail of a work and those who look at 'pre-compositional' planning.

A number of subdivisions occur within the disciplines themselves; for example, the different approaches – those of the 'historicist' on one hand and the contrasting views of the 'presentist' on the other – to the study of music theory. Historicists study the history and development of ideas in terms of their origins and influences, and attempt to understand them within their original contexts, whereas presentists study the same theories in the light of present-day knowledge.

1.3.1 Structuralism and Semiotics

The concept of structuralism – developed at the beginning of the twentieth century by the Swiss linguist Ferdinand de Saussure – sought to analyse the

¹³ A specific example of this lack of explanation is: Saul Novack, 'Guillaume Dufay: *Alma redemptoris mater* (II)' in Mark Everist (ed.), *Models of Musical Analysis: Music before 1600* (Blackwell: Oxford, 1992) pp 93–113. For further discussion of this article – as well as those by David Stern and Cristle Collins Judd within the same book, see: B. D. Collingwood, *A Critique of Three of the Essays on the Analysis of Early Music Presented in Mark Everist (ed.)*, *Models of Musical Analysis: Music before 1600* (Blackwell: Oxford, 1992), (Unpubl. MA study: University of Exeter, 2001).

underlying aspects of all language. Saussure's methodology broke language down into its smallest possible components, examining the way in which these components related to each other and by doing so, investigated the way in which they enable language to function as a whole. Language was studied ahistorically as a structural system in its own right, without reference to any external forms. Structuralists believe that the world consists of independently existing objects that can be broken down into a number of small segments, each of which have their own meaning; in language, these units were words.¹⁴

Although the original function of structuralism was to analyse language, at its heart was 'the scientific endeavor of discovering the codes, rules and systems which underpin all social and cultural practices'.¹⁵ For this reason, Saussure's methodology has been applied to many disciplines outside linguistics. Jean-Jaques Nattiez and Nicholas Ruwet, have argued that as music and language share many characteristics, including syntax, then musical works can be analysed in this way. By taking a structuralist approach, music analysts seek to find the system upon which a work is based. In order to uncover these building-blocks, scholars must use the science of signs and sign systems known as semiology, or – more recently – semiotics, which formed an integral part of Saussure's linguistic structuralism.

Semiotics, as a branch of structuralism, 'seeks to elucidate the structures of the score through a process of segmentation and comparison'.¹⁶ This process is twofold: first, by comparison, the work is broken down into a number of units which cannot be further subdivided, these are known as 'signs' or 'signifiers'; and second, the way in which these signs are distributed throughout the work – or works – is examined. The first of these procedures is known as

¹⁴ Terence Hawkes, *Structuralism and Semiotics* (Methuen: London, 1986) p 17.

¹⁵ Michael A. Forrester, *Psychology of Language: A critical introduction* (Sage: London, 1997) p 131.

¹⁶ Naomi Cumming, 'Semiotics', in Stanley Sadie (ed.), *The New Grove Dictionary of Music and Musicians 2* (Macmillan: London, 2001) vol. 23 p 67.

paradigmatic analysis, and the second, syntagmatic analysis. The purpose of semiotics is to uncover the hidden structure or meaning of the work under study. However, this methodology is not intended to uncover the way in which the work unfolds nor the way in which it is perceived.

Although the exact way in which the paradigmatic analysis is approached varies considerably depending upon the work under examination, the way in which the signs are tabulated remains the same. Recurrent rhythmic and melodic motives – and their variants – are aligned vertically in adjacent columns. Each of the larger motives – usually consisting of more than two or three notes – is assigned a paradigmatic heading: A, B, C... with A1, A2, A3... indicating any variants. Smaller cells are labeled p, q, r...if they are considered to be significant, but less so than the signs which are given paradigmatic headings. The wide variety of ways in which a work can be segmented is seen clearly in Nattiez's analysis of *Density 21.5* for solo flute by Edgard Varese.¹⁷ Differences in pitch or rhythm do not necessarily constitute a different sign. For example, Nattiez considers a three-note segment F-E-F# to be the same as F-G-F#. His reasoning for this is that both share the same first and last notes; in both cases the first two notes act as a mordent to the final F#; and the rhythmic value of the final note is 'long' in all cases.¹⁸

In his study, Nattiez is more concerned about the general feel and shape of individual cells and the characteristics shared by them rather than strict repetition. By examining each parameter of the cell, the most important traits can be identified and comparison can be made with other signs in the work. The type of synchronic analysis, practiced by Nattiez has received some criticism. In order to redress this balance, poststructuralist semioticians have looked more closely at how works change over time and how the past influences the present

¹⁷ Jean-Jaques Nattiez, 'Varese's "Density 21.5": A Study in Semiological Analysis', *MA* 1/3 (October 1982) p 244–340.

¹⁸ *Ibid.* p 249.

– known as diachronic analysis. This change in ideology is also a characteristic of the current state of Postmodernism within the academy.

1.3.2 Formalism

A formal analysis examines the overall structure and organization of an individual work. By doing so, analysts attempt to uncover the functions and relationships between sections and elements of a work, which are considered to be more important than the content of the sections themselves. An analysis of this type involves two main processes: an investigation of the way in which small cells are combined to produce the structure as a whole; and how the work can be seen as a magnification of the individual cells contained within it.

The roots of formalism can be traced to two groups of literary and linguistic theorists working in Russia at the beginning of the twentieth century; The Moscow Linguistic Circle and *Opoyaz* (The Society for the Study of Poetic Language).¹⁹ Although both groups concentrated on different aspects of literature, the underlying theoretical concepts which governed their scholarship were the same. Their primary belief was that poetry should be studied autonomously, without reference to its historical context. This search for a more scientific inquiry came about as a result of nineteenth-century literary scholarship, which – as was common in many of the arts at the time, including music – concentrated more on biography and sources than on the works of art themselves. Formalists believed that literary texts could not be studied in isolation, but that they only became of interest when compared with other texts. Through comparative analytical techniques, formalists could identify

¹⁹ For more information see: Ann Jefferson, 'Russian Formalism', in Ann Jefferson and David Robey, *Modern Literary Theory* (B. T. Batsford: London, 1988) p 24 and David Lodge (ed.), *Modern Criticism and Theory* (Longman: London, 1988) p 15.

characteristics that a text did not display. This relationship with texts in other literary systems is one of the most important aspects of this type of analysis.

Like structuralism, formal analysis frequently shows how works are built around a small number of individual cells. The processes by which different texts are examined, and cells identified, share many similarities with semiotics. Saussure's 'paradigmatic' and 'syntagmatic' analyses were renamed 'axis of selection' and 'axis of combination' by Jakobson.²⁰

In the latter part of the twentieth century Leonard Meyer explored ways in which musical works could be analysed using formal methods. One such example is his analysis of the 'Trio' from the 'Minuetto' of Mozart's *Symphony in G minor* (K. 550).²¹ His reason for choosing this work is that it 'seems simple, direct, and lucid – even guileless'.²² The work is only 42 bars long, and is split into two distinct sections, defined by a double repeat sign in bar 18. Both the brevity and apparent simplicity of the work make it ideal for preliminary investigation using this type of analysis.

As would be expected in a study of this type, the structure of Meyer's analysis mirrors that of the music. He begins by providing a brief summary of the 'Trio', outlining the overall structure by identifying major sections, phrases, motivic groups, and individual motifs. The whole work is in rounded-binary form;

²⁰ David Clarke, 'Speaking for itself: How does music become autonomous?', *Musical Times* (February 1996) p 14. The analogy between language and music, and the breaking down of music into speech-like segments, can be found in theoretical works written as early as the eighteenth-century – for example, Volume II of Heinrich Christoph Koch's *Versuch einer Anleitung zur Composition*, which dates from 1787. See: Heinrich Christoph Koch (trans. Nancy Kovaleff Baker), *Introductory Essay on Composition* (Yale University Press: New Haven, 1983) p 1. The interest in the analysis of musical form (i.e. the way in which segments of individual works interrelate, rather than the way in which a composition is based upon a pre-defined structure such as binary form or sonata form) continued throughout the eighteenth, nineteenth, and twentieth centuries; first with the continuation of Koch's work, and then in the treatises of Anton Reicha and the works of A. B. Marx, Hugo Riemann, Arnold Schoenberg, and Erwin Ratz. See: Scott Burnham, 'Form', in Thomas Christensen (ed.), *The Cambridge History of Western Music Theory* (CUP: Cambridge, 2002) pp 880–7.

²¹ Leonard B. Meyer, 'Grammatical Simplicity and Relational Richness: The Trio of Mozart's G Minor Symphony', *Critical Inquiry* 2/4 (Summer 1976) pp 693–761.

²² *Ibid.* p 694.

Part 1 (bars 1-18) is assigned the label *A*, and Part 2 (bars 19-42) *B-A'*. Meyer then provides a brief phrase-by-phrase analysis.

The way in which the 'Trio' can be broken down into increasingly smaller segments is indicated by brackets above the score. These show that the work functions on six different levels, from large-scale to small-scale; part, section, phrase group, phrase, motif group, and motif. The rest of Meyer's article expands on these levels, showing how much of the musical material is based upon patterns in the first phrase. Each phrase is analysed separately in considerable detail, highlighting harmonic patterns, relationships between motifs, and the structural weight of phrases and motifs. Throughout, Meyer attempts to explain why particular patterns – and indeed individual notes – have been chosen by the composer.

The complete analysis reveals that the 'Trio' consists of a 'complex network of distinguishable, but interconnected, relationships: conformant, processive, and hierarchic'.²³ The way in which Meyer believes that relationships between large- and small-scale aspects of the work exist is characteristic of this method of analysis, and of formalism in general.

1.3.3 Postmodernism

The reaction against the study of form – and the composition of works based upon formal models – was one of the primary characteristics of postmodernism. In view of the fact that postmodernism has embraced so many different values, beliefs, theories, and methodologies, defining the term is not easy. Umberto Eco has expressed this difficulty, writing that 'postmodernism is not a trend to be chronologically defined, but, rather, an ideal category or, better still, a *Kunstwollen*, a way of operating. We could say that every period has its

²³ Ibid. p 755.

postmodernism'.²⁴ In its strictest sense, postmodernism represents a general movement that sought to question modernist assumptions. However, the problems encountered in attempting to define postmodernism are also present when attempting to define modernism.²⁵ In its broadest terms, postmodernism is a reaction against positivism and formalism. In the words of Alistair Williams, it 'includes discourses that were forged in a struggle to displace notions such as integration, depth, teleology and grand narrative'.²⁶

This change – the beginnings of which can also be found in other disciplines such as philosophy and English – gained momentum during the 1980s.²⁷ During this early period, scholars began to question the assumptions upon which musicology had been based since the beginning of the twentieth century. Joseph Kerman's criticism in 1980, of the then current state of musicology – which has already been discussed – promoted an anti-positivist and anti-formalist analytical theory.²⁸ The post-Kerman 'New Musicology' has encouraged the setting of works within their wider cultural and historical context and a study of hitherto neglected works and composers. The codification and examination of music's internal structures – as exemplified by structuralists and formalists – gave way to a search for the embodiment of 'meaning' within music. Multiple readings of the same work, and proposed 'meanings' which come about as a result, were welcomed and given equal merit.

Within analysis, postmodernism saw a movement away from a formal study of the traditional musical canon – which included the great 'masters' such as Beethoven and Mozart – to a multi-disciplined examination of pop and jazz,

²⁴ Umberto Eco (trans. William Weaver), *Il nome della rosa* (Harcourt Brace Jovanovich: San Diego, 1984) p 67.

²⁵ Jonathan D. Kramer, 'The Nature and Origins of Musical Postmodernism' in Judy Lochhead and Joseph Auner (eds.), *Postmodern Music/Postmodern Thought* (Routledge: New York & London, 2002) p 14.

²⁶ Alistair Williams, 'Musicology and Postmodernism', *MA* 19/3 (2000) p 386.

²⁷ Judy Lochhead, 'Introduction' in Judy Lochhead and Joseph Auner (eds.), *Postmodern Music/Postmodern Thought* p 5.

²⁸ Joseph Kerman, 'How We Got into Analysis, and How to Get Out' p 19.

and non-western music. This change of emphasis in the choice of analytical repertoire is evident in Susan McClary's book *Feminine Endings*, in which she juxtaposes works by Monteverdi and Madonna.²⁹ The reception of a work, its affect, and the relationship between the performer and listener – as an individual in a particular place, and at a particular time, rather than as a group, with no regard to the composer – prevail within the anti-positivistic climate of 'New Musicology'.

Traditional analytical methods are of little, or no, use to scholars who attempt to understand, for example, the way in which gender and sexuality influence both the composition of a work and its reception. Kofi Agawu has stressed that in order to find new analytical methodologies 'you must attach the patterns you have observed to something else: a plot, a program, an emotional scenario, a context, an agenda, a fantasy, or a narrative'.³⁰ Susan McClary, Philip Brett and Jonathan Kramer have all been influential within this field and have attempted to move away from traditional formal analyses. In her article entitled 'Gender, Musicology, and Feminism', Suzanne G. Cusick has stated that feminist musicologies 'provide a theoretical legitimacy for reconnecting "the music itself" with the fabric of human life'.³¹

On the whole, poststructuralist methods of analysis have not always been compatible with the expansion of the traditional musical canon. The tendency to treat music as social text within the definitions of the 'New Musicology' has come under fire from some scholars studying popular music. These have been outlined by John Covach:

²⁹ Susan McClary, *Feminine Endings* (University of Minnesota Press: Minnesota and London, 1991).

³⁰ Kofi Agawu, 'Analysing music under the new musicological regime' *Music Theory Online* 2.4 (May 1996).

³¹ Suzanne G. Cusick, 'Gender, Musicology, and Feminism' in Nicholas Cook and Mark Everist (eds.), *Rethinking Music* (OUP: Oxford, 1999) p 498.

The problem lies in the assertion that there is a single way to view popular music: namely, as inherently and primarily social. I propose instead that popular music can also be considered as inherently *musical*, and only secondarily social. According to this model, the gap between the study of popular and art-music becomes far narrower for the musicologist than it is for the more sociologically oriented model. The study of popular music is an area of research that the musicologist can undertake without necessarily becoming a student of sociology; while an understanding of social context is crucial to the understanding of popular music, it need not be the central, fundamental consideration.³²

This reaction against the general trends of 'New Musicology' is not uncommon; plurality is one of postmodernism's primary characteristics. Musicology as a discipline now has few boundaries.

1.3.3 Reductionism and Voice-leading

In an attempt to uncover the inner workings of musical compositions analysts have employed reductive techniques. By removing pitches that are considered to function as decorations of simpler underlying structures, the hierarchical framework of a composition can be revealed. Reductive processes have been used by scholars working within tonal and pre- and post-tonal contexts, and in the twentieth century have included Donald Tovey, Leonard B. Meyer, James Baker, and David Lewin.³³

The roots of reductive analyses can be traced back to eighteenth-century German harmonic theory. Drawing upon figured bass theory, and Rameau's harmonic analyses, Johann Philip Kirnberger (1721-1783) made a distinction between two types of dissonances – non-essential and essential. The former

³² John Kovach, 'Popular Music, Unpopular Musicology' in Nicholas Cook and Mark Everist (eds.), *Rethinking Music* p 466.

³³ V. Kofi Agawu, 'Schenkerian Notation in Theory and Practice', *MA* 8/3 (October 1989) pp 277–80.

could be resolved over the same note in the bass – for example, a suspension – whereas the latter required the bass to change.³⁴ Kirnberger believed that non-essential dissonances could be removed from a work without altering its structure. He broadened this out to identify non-essential harmonies, using figured bass to represent underlying progressions. These concepts were developed further in nineteenth-century Viennese fundamental bass theory.³⁵

The principal exponent of reductionism and voice-leading was Heinrich Schenker. Whilst giving private lessons in piano and music theory, Schenker became increasingly dissatisfied with the state of current music theory. He particularly disliked the formalism of Eduard Hanslick – Professor of the History and Aesthetics of Music at the University of Vienna – whose work he encountered whilst completing his degree in law. Schenker developed his hierarchical theory of tonal contrapuntal structure over several decades, but its fullest formulation appears in the ‘Introduction’ of *Der Freie Satz*, the third and final volume of his *Neue musikalischen Theorien und Phantasien*:

For more than a century, a theory has been taught which claims to provide access to the art of music, but in fact does quite the opposite. This false theory has obscured the musical discipline of previous centuries—that is, strict counterpoint and true thoroughbass. One might explain this break by looking to the impatience of the generation which lived during the third decade of the nineteenth century: dazzled by the tremendous outburst of genius which had come before them, they sought, as mediocrity does, to the shortest possible path to genius. This shortcut, a “practical” one, proved to be a failure, since it was essentially contrary to the historical background and artistic development of the

³⁴ Robert Wason, ‘Schenker’s Notion of Scale-Step in Historical Perspective: Non-Essential Harmonies in Viennese Fundamental Bass Theory’, *JMT* 27/1 (1983) p 50.

³⁵ *Ibid.* p 58.

great composers. It did not lead to the masters; indeed, it ultimately led away from them.³⁶

The strict counterpoint and throughbass to which Schenker refers are found in the works of Johann Joseph Fux and C. P. E. Bach respectively. Schenker wanted to create a new theory based upon the eighteenth-century Austro-German theoretical tradition, and cited Fux and C. P. E. Bach as examples of good theoretical practice. He was uneasy with the abandonment of tonal composition by leading composers of the time such as Debussy, Stravinsky, and particularly Schoenberg.

Within his work, Schenker placed himself firmly within the German idealist tradition. This reaction against theories of the seventeenth-century Enlightenment – in which philosophers believed that everything could only be discovered through experimentation, rather than through thought or belief – can be found in the works of Goethe, Kant, Hegel, and Schiller in particular.³⁷ It is clear that Schenker knew the texts of these scholars as sections of their works are quoted within his own writings. Parallels have been drawn between ideas expressed in the work of Hegel and Goethe and that of Schenker. In *Der Freie Satz* Schenker refers to the background, middleground, and foreground as

³⁶ Heinrich Schenker, *Free Composition (Der Freie Satz)* trans. Ernst Oster (Pendragon Press: Hillsdale, NY, 1977) p xxi. The ‘false theory’ to which Schenker refers is not specifically identified within *Free Composition*. In the Introduction to the English edition, Allan Forte states that Schenker probably had in mind the writings of ‘German theorists of the early part of the 19th century, A. B. Marx (1795–1866) and Gottfried Weber (1779–1839) among them, and the most influential theorist in Vienna, Simon Sechter (1788–1867). And surely he would have included Hugo Riemann (1849–1919), whose Rameau-influenced theory of harmony dominated instruction in German music institutions at the time Schenker completed *Der freie Satz* (and beyond)’.

³⁷ Allan Keiler, ‘The Origins of Schenker’s Thought: How Man Is Musical’, *JMT* 33/2 (Autumn, 1989) p 291.

origin, development, and presence, which Narmour notes is similar to Hegel's tripartite division of logic into concept, essence, and being.³⁸

Schenker believed that good art music arises from the improvisatory elaboration of a strict contrapuntal framework, structured in a series of hierarchical levels, and governed by the acoustical properties of the triad as developed in the tonal system of so-called common-practice music. The purpose of Schenker's theoretical work – culminating in *Der freie Satz* – was to 'present a new concept, one inherent in the works of the great masters; indeed, it is the very secret and source of their being: the concept of organic coherence'.³⁹ Schenker's primary pedagogical aim was to improve performance through a greater understanding of musical works.⁴⁰ In order to do this, he believed that a performer should not only have a thorough knowledge of the music itself, but should be fully aware of the composer's intentions. For him this began by studying the composers' original manuscripts, and where necessary producing new editions of the works.

Schenker's analysis can be broken down into four separate elements: (1) reduction; (2) figured bass; (3) species counterpoint; and (4) ornamentation and improvisation. These were addressed individually in a number of separate publications, and brought together in *Der freie Satz*, published posthumously in 1935.⁴¹ Schenker believed that each work composed during the common practice period was governed by a single tone. In nature a tone is not just one sound, but consists of several upper partials or harmonics. Taken together, the

³⁸ Eugene Narmour, *Beyond Schenkerism: The need for Alternatives in Music Analysis* (University of Chicago Press: Chicago and London, 1980) p 31.

³⁹ Heinrich Schenker, *Free Composition* p xxi.

⁴⁰ Allen Forte, 'Schenker's Conception of Musical Structure', in Maury Yeston (ed.), *Readings in Schenker Analysis and Other Approaches* (Yale University Press: New Haven, 1977) p 8. Article originally printed with the same name in *JMT* 3/1 (April, 1959) pp 1–30.

⁴¹ Heinrich Schenker, *Free Composition (Der Freie Satz)* trans. Ernst Oster (Pendragon Press: Hillsdale, NY, 1977).

first four of these harmonics form a major triad. Schenker considered these tones – which he called the *Klang in der Natur* (chord of nature) – to be of particular importance because ‘their relationship to the fundamental and to each other corresponds to the simplest mathematical ratios or most perfect proportions’.⁴² He believed that at the most basic level every tonal work was a representation of its tonic triad. With a series of arrhythmic reductions he revealed how the triad was stretched out over time by the addition of passing tones, neighbour notes, consonant skips and arpeggiations.⁴³

The process of succession or horizontalization shows that several hierarchical relationships exist between the pitches in a tonal work. Schenker believed that every work could be broken down into three structural levels: foreground (*Vordergrund*), middleground (*Mittelgrund*), and background (*Hintergrund*).⁴⁴ When analyzing a work, he used graphs or graphic analyses to illustrate these levels, the best examples of which can be found in *Five Graphic Music Analyses*.⁴⁵ Each analytical graph consists of three staves – one for each structural level. The lowest staff shows the foreground, and contains elements that relate most closely to the original work. The original note values are not recorded, but different rhythmic durations are used in order to represent the relative structural weight of each tone. The outermost voices are of primary concern, although some notes heard in the inner parts are shown where they influence the voice-leading. By stripping away the passing tones, neighbour notes, consonant skips and arpeggiations, the most important structural pitches

⁴² Adele T. Katz, ‘Heinrich Schenker’s Method of Analysis’, *MQ* 21/3 (July 1935) p 313.

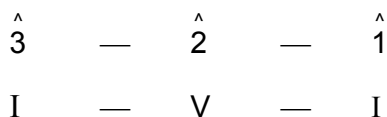
⁴³ Allen Forte and Steven E. Gilbert, *Introduction to Schenkerian Analysis* (Norton: New York & London, 1982) p 7.

⁴⁴ William Drabkin, ‘Heinrich Schenker’, in Thomas Christensen (ed.), *The Cambridge History of Western Music Theory* (CUP: Cambridge, 2002) p 819.

⁴⁵ Heinrich Schenker, *Five Graphic Music Analyses* (Dover: New York, 1969).

are identified. The background graph reveals the *Ursatz*, or fundamental structure.

Figure 1.1 – The Schenkerian *Ursatz*



The *Ursatz* is comprised of two different elements: one melodic – the *Urilinie* (a descent by scale step to the tonic of the work, indicated by caretted numbers); and the other harmonic – the *Bassbrechung* (a I-V-I motion in the bass). Three different versions of the *Ursatz* are possible, all of which only involve modifications to the *Urilinie*: the first descends through a third (3-2-1), as shown in Figure 3.1; the second through a fifth (5-4-3-2-1); and the third through an octave (8-7-6-5-4-3-2-1).⁴⁶ In all cases the V of the *Bassbrechung* falls under the $\hat{2}$ of the *Urilinie*.

A number of different elements interact to produce the fundamental structure.⁴⁷ The most important consideration is that ‘Neither the fundamental line nor the bass arpeggiation can stand alone. Only when acting together, when unified in a contrapuntal structure, do they produce art’.⁴⁸ The *Ursatz* represents not only the fundamental structure of individual works, but is the basis of all tonality. It was not Schenker’s aim to show that every tonal work could be reduced to the same simple structure, but rather to explain that when listened to correctly these works were an elaboration, or composing-out, of the *Ursatz*.

⁴⁶ William Drabkin, ‘Heinrich Schenker’, in Thomas Christensen (ed.), *The Cambridge History of Western Music Theory* p 819.

⁴⁷ Snarrenberg states that seven elements are needed to configure an *Ursatz*. See Robert Snarrenberg, *Schenker’s Interpretive Practice* (CUP: Cambridge, 1997) pp 25–7.

⁴⁸ Heinrich Schenker, *Free Composition* p 11.

CHAPTER 2: The Theoretical Tradition to 1500

2.1 Introduction

Etymological studies of pre-Socratic Greek have shown that the word *theoria* was used to describe the action of seeing or observing something or someone, whereas the word *praktike* described the way by which an object was changed.¹ It could be said that *theoria* is concerned with explaining the essential nature of music on a more philosophical level rather than addressing the actual music itself. These terms were first created to describe different aspects of philosophy but were then applied to other disciplines. Both of these terms came to be very closely linked, and in the study of music theory it can be seen that few individual theoretical treatises attempt to separate *theoria* from *praktike*. Therefore although this section is partly entitled 'Theory' it will address treatises which are concerned with both *musica thoretica* and *musica practica*.

A number of advances in other non-musical disciplines had a considerable impact upon music theory, one of which was the advent of the printing press. This, in particular, greatly influenced treatises of the Renaissance period. The printing process enabled music examples to be easily included within the treatises and widened the dissemination of the polyphonic repertoire that the treatises themselves address. It led the nineteenth century theorist Jérôme-Joseph de Momigny to revise his own views on music theory as he published a series of papers on the subject through a newspaper.² Changing social and intellectual trends also had a considerable influence on theorists.

¹ Thomas Christensen (ed.), *The Cambridge History of Western Music Theory* (CUP: Cambridge, 2002) p 2.

² Ian Bent, 'Momigny's *Type de la Musique* and a Treatise in the Making', in Christopher Hatch and David W. Bernstein (eds.), *Music Theory and the Exploration of the Past* (University of Chicago Press: Chicago & London, 1993) pp 309–40.

Different methods of analysis can be cited in later treatises including an increase in the development and understanding of musical rhetoric and a more concentrated study of the analysis of form, both of which were caused by the emergence of Renaissance humanism.

The analysis of music has its roots in the treatises written by theorists as early as the eleventh century. Within these works the writers broke down compositions by some of the most prolific composers of the time into their constituent parts. Ian Bent has suggested that the Carolingian clergy in classifying different endings for antiphons in particular modes carried out the earliest analytical work.³ This type of analysis was intended to help with the performance of the chant rather than to be solely a commentary on it. The results of the study came about from a close examination of the chant itself, rather than relying upon any external factors.

2.2 The History of Music Theory

From the ninth century onwards, interest in the theoretical writings on music increased rapidly. The reason for this was twofold: first, scholars began to explore more fully treatises which had survived from late antiquity, and tried to emulate them in their own works; and second, it was thought that sets of rules or guidelines were needed so that practical music-making within the liturgy was performed in a more consistent manner in different places.⁴ It is for these two reasons that the nature of treatises differs; some are theoretical whilst others are more practical. It can be seen that this trend continued from the groups of theorists of late antiquity to individual scholars and teachers of the early Tudor period.

³ Ian Bent with William Drabkin, *Analysis* (Macmillan: London, 1987) p 6.

⁴ David Hiley, *Western Plainchant: A Handbook* (Clarendon Press: Oxford, 1993) p 442.

The work of Boethius (c480-c524) is central to the theoretical body of musical scholarship until the sixteenth century. Much of what we know now about the history of music theory from before the sixth century is due to his diligent copying of ancient treatises. In addition, subsequent generations of theorists integrated Boethius' work into their own studies.

Not only does Boethius play an important role in the general history of music theory, but also in early Tudor university education. His most famous work, *De institutione musica*, was used at Oxford from at least 1431 until Elizabethan times and beyond.⁵ In view of this, Fayrfax may well have encountered *De institutione musica* whilst studying *musica speculativa* within the quadrivium for his MusB at Cambridge. As a result, he would have been familiar with certain aspects of ancient Greek theory transmitted by Boethius. It is for this reason that I have included an extended section addressing music theory from Pythagorean times.

2.2.1 Greek Theory: Pythagoreans, Harmonicists and Aristoxenians

The earliest studies of music theory can be attributed to the Ancient Greeks. Although it is still unclear as to the type of music that was being performed, a number of different disciplines can be called upon in order to provide a greater understanding of Greek culture and its music. Archaeological remains, works of ceramic art, notated pieces of music and, most importantly, literature not only provide clues as to the type of music that was performed but also show how music functioned within society. A number of theorists wrote about music and the influence of their works can still be seen in the Medieval and Renaissance periods. Within these texts there are references to music and the composers of it. The authors of the fifth century B.C. presented a detailed discussion of the

⁵ Nan Cooke Carpenter, *Music in the Medieval and Renaissance Universities* (Da Capo Press: New York, 1972) p 153.

recent changes that had occurred in the musical style of the time and, in Plato in particular, created strong arguments against the new type of music being performed.⁶

A number of problems occur when attempting to study treatises of this period – the major one is that none survives in its original format. Both the complete and fragmentary works are copies of the originals and generally date from the eleventh century onwards. As a result it is impossible to determine how accurate they are, whether they are by the attributed author, exactly when they were written, and whether they retain their original titles. Hellenic theorists can be split into three groups or traditions: the Pythagoreans; the Harmonicists; and the Aristoxenians.⁷ Issues such as notation, the function and placement of notes in a scale, characteristics of consonance and dissonance, rhythm, and types of musical composition were all addressed within them.⁸

It is important to understand the way in which music was viewed by the Greeks, and indeed by later generations as well. Music was rarely studied as an individual subject but rather as an integral part of the *quadrivium*. This was the basis for advanced education, combining the study of arithmetic, music, geometry and astronomy to create a four-fold way to knowledge. The *trivium* on the other hand, which comprised grammar, logic and rhetoric was the basis of elementary education and was a three-fold way to eloquence.⁹ Together these were the basis for all education and were known as the seven liberal arts. Plato considered the *quadrivium* to be the essential way by which a philosopher learnt his trade. This way of teaching flourished and remained to be the preferred

⁶ Andrew Barker, 'Public Music as "Fine Art" in Archaic Greece' in James McKinnon (ed.), *Antiquity and the Middle Ages* (Macmillan: London, 1990) p 52.

⁷ Thomas J. Mathisen, 'Greek Music Theory', in Thomas Christensen (ed.), *The Cambridge History of Western Music Theory* (CUP: Cambridge, 2002) p 114.

⁸ *Ibid.* p 112.

⁹ These terms literally mean a four and three way crossroads, implying that they are fundamentally connected.

method of education from the time of Pythagoras until the Renaissance during which it was still used at many universities.

The earliest theorist for whom a notable amount of material survives is Aristoxenus (375/360 BC–after 320 BC). His fragmentary theories – *Harmonic Elements* and *Rhythmic Elements* – deal with scales and keys and the different elements which are needed to make music, and are the only extant examples of music theory which pre-date the eleventh century.¹⁰ Through his writings he was attempting to counteract the more scientific and mathematical approaches to music theory put forward in treatises by the Pythagoreans and Platonists. This thought reflects the influence of Aristotle with whom Aristoxenus studied. As a result he addressed the more fundamental philosophical aspects of music, focusing particularly upon the different elements that were used to make music. In doing so he attempted to discover how a good melody could be composed. In order to achieve this he breaks a melody down into its constituent elements, of which he considers there to be seven: genera; intervals; notes; scales; *tonoi*; modulation; and melic composition.¹¹ He describes each of these categories individually and outlines the relationships between them. However, he did formulate one scientific idea in that the smallest unit of measurement was the semitone rather than a smaller unit as defined by the Harmonicists.¹² Unlike many other theorists of the time, Aristoxenus showed an interest in the history of music, musicians and musical institutions. Later theorists classed Aristoxenus' treatises as being in the practical tradition as they were concerned with the construction of music in contrast to the more theoretical writings of the Pythagoreans and Harmonicists. Aristoxenus' work was not aimed at a learned

¹⁰ Various, 'Theory, theorists' in Stanley Sadie and John Tyrell (ed.), *The New Grove Dictionary of Music and Musicians 2* (Macmillan: London, 2001) vol. 25 p 361.

¹¹ Thomas J. Mathisen, 'Greek Music Theory', in Thomas Christensen (ed.), *The Cambridge History of Western Music Theory* p 120. Melic composition is a musical composition of secular words or song, or a work relating to it.

¹² Annie Bélis, 'Aristoxenus' in Stanley Sadie (ed.), *The New Grove Dictionary of Music and Musicians 2* vol.2 p 2.

audience but was rather a more general approach to music. As a result his theories were not widely disseminated and those that were, were read more by philosophers than musicians.

The Greeks in the second and third centuries concentrated more on the philosophy of music than the music itself and its relationship with the other adjacent subjects of the *quadrivium*. Aristides Quintilianus (fl late 3rd-early 4th centuries) wrote three books: the first covered harmony, rhythm and metre; the second, education through music and the influence of music on critical thinking; and the third was concerned with numerical relationships. Within Aristides' theories different musical disciplines come together, including pedagogy, aesthetics and psychology. His writings were not aimed specifically at musicians, but represent a more philosophical study of music and its relationship with other disciplines.

2.2.2 Theory of the Middle Ages: Boethius and Aurelian

Boethius drew on previous treatises from antiquity which he studied to produce his *De institutione musica* in around the year 500. He produced four manuals on the different subjects of the *quadrivium* although only the volumes on arithmetic and music survive. His writings are particularly fruitful to later scholars as they provide clear evidence and a history of earlier theoretical musical works by Pythagoras, Ptolemy, Nicomachus, Euclid, Plato, Aristotle and Archimedes amongst others.¹³ A great deal of the material is simply a translation of earlier theorists' work – especially that of the second century Greek theorist, Nicomachus – although there are some original ideas. One of the reasons for this may have been that Boethius wanted to ensure that Greek musical theory

¹³ Calvin M. Bower, *Boethius' The Principles of Music, An Introduction, Translation, and Commentary* (Unpubl. PhD thesis: George Peabody College for Teachers, 1966) pp iii and 5.

was not neglected, so translated them into Latin so that they could be more easily understood.¹⁴

The original material included by Boethius put music within the context of the *quadrivium*. Both individually and as a group, the treatises were to be used as a preparation for the general study of philosophy rather than for the individual disciplines that they addressed. This set a trend for later theorists who studied music as a part of the liberal arts – all of which were closely linked – and in this respect showed the influence of Pythagoras who had firmly believed that music and science were inseparable.

Much of *De institutione musica* is concerned with proportional theory and its relationship with scales and species. Boethius shows how to find the proportions between notes using the monochord, and addresses the intervals between the notes of the diatonic scale.¹⁵

A turning point in music theory occurred with *Musica disciplina* by the ninth-century theorist Aurelian of Réôme. The works of the Hellenic theorists generally represented the ideals of music and had few – if any – practical implications. Aurelian's treatise, however, was much more practically based; its aim was to increase the musical knowledge of the *cantor* or singer. The treatise was written some time before 850 for Bernard, abbot of the monastery of St Jean de Réôme, presumably for use within the monastery, although it is not known whether the author was a monk himself.¹⁶

Aurelian discusses in some detail the cadential formulae used in mass and office items between the main chant and verse, and puts forward his reasoning to show which are correct. The theorist's wide knowledge of Gregorian plainchant is revealed within *Musica disciplina* when presenting these practical examples. The book contains information on a variety of different

¹⁴ David Hiley, *Western Plainchant* p 444.

¹⁵ *Ibid.* pp 444–5.

¹⁶ *Ibid.* p 456.

musical subjects such as a definition and classification of music and a basic terminology, all of which are based on the performance of plainchant.

2.2.3 Medieval Theory: Hucbald, Guido and John

The ideas of Boethius and Aurelian were developed and extrapolated in a treatise written by Hucbald of St Amand (c850-930). This is not a speculative work like those of the Hellenic writers, but a handbook for young monks explaining the way in which psalmody should be performed. Originally entitled *De harmonia institutione*, it is now more commonly known simply as *Musica*.

Unlike Boethius, Hucbald makes no use whatsoever of the monochord. Instead, he simply states that different intervals occur within plainchant, and that all of them are made up of varying combinations of tones and semitones. He suggests that when performing plainchant singers should visualize the strings of a six-stringed cithara – with the semitone between the third and fourth strings – and by doing so, the semitone will fall in the correct place. Hucbald was the first to use pitch names or symbols for the notes of plainchant, the lack of which had hindered earlier writers. In order to do this he relied heavily upon the work of the Greek theorists that had been disseminated through Boethius. These latter devices, however, did not gain universal acceptance.

Hucbald addresses the use of modes within plainchant. He cites four 'tones': protus, deuterus, tritus, and tetradus, beginning on D, E, F, and G respectively in modern notation. He clarifies the relationship between the first and last notes of specific chants, and the difference between authentic and plagal modes.

The fact that Hucbald was a composer and teacher as well as a theorist is evident in his work and it is probably for this reason that it is concerned more with issues regarding practical music. Throughout *Musica* Hucbald cites

examples within contemporary plainchant in order to demonstrate the practical nature of his work. He introduces new concepts gradually, beginning with the simplest and finishing with the most complicated, before showing how they can be applied in practice. It is possible that his treatise was written for use as a pedagogical text at the school in which he taught in Reims.¹⁷ However, the advanced nature of the work and the knowledge of plainchant required suggest that it was used by monks who had already been trained, rather than by beginners.

Two further treatises – *Musica enchiridis* and *Scolica enchiridis* – have been attributed to Hucbald in various sources, but this attribution has now been disproved.¹⁸ Although the exact origins of both remain unknown, they still are important documents in the study of music theory. The two treatises display a number of similarities with each other, but the fact that there are also several disagreements has caused scholars to suggest that rather than being written by the same author, they were compiled by a number of different theorists from the same area. They probably originate from north-east France or west Germany in the second half of the ninth century.¹⁹

Both treatises take ecclesiastical chant as their subject but address it in different ways. The former is more concerned with the practical implications of chant whilst the latter takes a more theoretical stance. *Musica enchiridis* deals with monophonic chant and contains the first example of notation for which the exact pitch of each note is known. This notation, which became known as dasian, also shows signs of Greek influence and is in many ways a development of Boethius' work. It is very similar to the six-line notation used by

¹⁷ Claude V. Palisca (ed.), *Hucbald, Guido, and John on Music: Three Medieval Treatises* (Yale University Press: New Haven & London, 1978) p 4.

¹⁸ David Hiley, *Western Plainchant* p 452.

¹⁹ Raymond Erickson, 'Musica enchiridis, Scolica enchiridis' in Stanley Sadie (ed.), *The New Grove Dictionary of Music and Musicians* 2 vol.17 p 439.

Hucbald, but each line is assigned a fixed pitch rather than only stating where the tones and semitones occur.

Although this source does contain some more theoretical information, such as a description of the eight modes and musical and mathematical terminology, it is then approached from a practical point of view. An example of this occurs in the section addressing the use of the modes where vocal exercises are included so that the singer can familiarize himself with the distinction between tones and semitones within each mode, and learn the different cadences to the psalm-tones. It also contains a detailed section on the improvisation of organum, included primarily to illustrate the concept of perfect consonances. Both treatises set out rules for this technique to some extent and provide examples in dasian notation.

Scolica enchiridis takes a more mathematical approach to the discipline and encourages singers to be educated in the *quadrivium*. However, it also contains a section on specific mistakes that are most commonly made when singing plainchant by misplacing the semitone, and how the rhythm of monophony can be changed by the lengthening of particular notes.

The *Enchiridis* treatises and Guido's *Micrologus* are in many ways very similar. Like the earlier treatises, the function of *Micrologus* was to educate singers in the performance of plainchant, particularly in using a new style of notation to improve singing at sight. It was written in about 1026 probably for the choir of the Cathedral in Arezzo where Guido lived and in view of this the theoretical content is not overly complicated. The invention of the hexachordal system that has frequently been attributed to the theorist does not appear in this treatise or any of the other three that he wrote. However, the number of contemporary theorists who attributed the invention of hexachords to him – and his known practical interests – suggest that he may well have invented the system.

Guido did make a considerable contribution to musical notation in his use of the staff. Until the eleventh century either the exact pitches of plainchant were not notated – the direction in pitch of the melodic line was noted approximately with symbols to indicate whether the chant should rise or fall but not by how much.²⁰ Guido sought to change this and so in his *Prologus in antiphonarium* he proposed the use of a coloured staff system. This consisted of two lines, the bottom – representing C – was yellow, whilst the upper line – representing F – was red. These were probably chosen because a semitone falls below each, the notation of which had caused considerable problems in earlier systems. The letters F and C were written to the left of each of the lines and when the four-line staff (the *Tetragram*) was introduced, these became the clef signs.²¹ While the *Prologus in antiphonarium* introduced the new system, *Micrologos* showed how it could be put into practice. When Guido was summoned to Rome to demonstrate his new system to Pope John XIX he was commissioned to notate Roman liturgical books in staff notation. This became increasingly popular, probably because of its ease of use, and was widely disseminated.

In his *Epistola de ignoto cantu* Guido introduces the use of solmization in order to help singers read new chants. The syllables *ut, re, mi, fa, sol* and *la* were derived from a chant (*Ut queant laxis*) which he used to teach his choirboys. Although the text (the first part of the vesper hymn for the feast of John the Baptist) can be traced to the ninth century it has been suggested that Guido himself composed the chant.²² The reason for this is that each new line begins a note higher than the previous one thus encompassing all six notes of the hexachord.²³ Guido stated that the ease with which music could be read

²⁰ As choirs knew the entire chant repertoire from memory this method of notation merely served as an *aide memoire*.

²¹ Carl Parrish, *The Notation of Medieval Music* (Pendragon Press: New York, 1978) p 9.

²² David Hiley, *Western Plainchant* p 467.

²³ Richard Rastall *The Notation of Western Music* (J. M. Dent & Sons: London, 1983) p 128.

using this method meant that the entire chant repertory could be learnt in two years, rather than in ten as had been the case previously.

Like Guido's manual, the function of the treatise entitled *De musica* by Johannes Cotto (or 'of Afflighem' as he is also known in some sources)²⁴ was to educate the boys of a cathedral or choir school, particularly in the correct singing of chant. The identity and exact name of the author are still unknown. A number of different hypotheses have been put forward but there is little evidence within the treatise itself to substantiate any of these. As this is the only known work by John it has been difficult to gather any more information about him. Much of his treatise is very similar to Guido's in terms of the contents and title of each chapter although the material is placed in a different order.²⁵ Guido had revolutionized the notation of chant and so as the repertoire could be recorded in detail there was little need for discussing melodic variations and how to correct them. Instead, John was concerned with ensuring that recent melodic changes in plainchant were preserved.²⁶ In addition to his theoretical writing he attempted to teach these new advances to his singers so that the changes were also put into practice. He expands upon Guido's work, particularly in the discussion of modal theory in which John describes the processes whereby the modes can be identified. This dealt not only with the analytical method of looking at the final, the first tone of the *Gloria patri* and the note on the first syllable of the word *saeculorum* (also in the *Gloria*) but also the aesthetic method whereby each mode could be identified by listening to its emotional qualities. John states that there should be a marriage of music and text when composing new chants and he outlines a number of rules that should be followed when doing so. This treaty is also important in that it is the first to

²⁴ In view of the fact that the theorist has a number of different names, he will be referred to here as 'John'.

²⁵ Claude V. Palisca, 'Johannes Cotto' in Stanley Sadie (ed.), *The New Grove Dictionary of Music and Musicians* 2 vol. 13 p 137.

²⁶ Claude V. Palisca (ed.), *Hucbald, Guido, and John on Music* p 87.

make reference to the Guidonian hand. Although no diagram is given in his first chapter entitled 'How one should prepare oneself for the study of music' he states that the musician should:

diligently accustom himself to measuring off his melody on the joints of his hand, so that presently he can use his hand instead of the monochord whenever he likes and by it test, correct, or compose a song. After he has repeated these things for some time, just as we have directed, and has thoroughly memorized them, he will have an easier, unperplexed road to music.²⁷

The twelfth and thirteenth centuries saw a change in the type of treatises produced. As polyphony developed, treatises addressed problems associated with the improvisation and writing of organum and discant.

2.2.4 High Renaissance Theory: Tinctoris and Gafurius

The major issue addressed by Tinctoris, Gafurius and their contemporaries was the definition of consonance and dissonance. The debate focused specifically on how thirds and sixths were classified, some theorists considered them to be dissonances, some imperfect consonances and others concordant discords. As composers began to introduce combinations of duple and triple time into their works, the way in which they were mathematically related was also described and discussed at great length. Tuning was considered as another mathematical issue. Although many musical works were based upon plainchant and therefore the mode of the work was governed by the chant, many composers altered notes within the mode to create a 'smooth linear flow'.²⁸ A great deal of attention was paid to the amount by which these tones were adjusted and the exact tuning of them. Many theorists examined earlier treatises, and as with many

²⁷ Ibid. p 104.

²⁸ Various, 'Theory, theorists' in Stanley Sadie and John Tyrell (ed.), *The New Grove Dictionary of Music and Musicians* 2 vol. 25 p 370.

other disciplines of the Renaissance, these treatises frequently derived from antiquity. By examining treatises of the period it is apparent Boethius' works were widely disseminated and read.

One such theorist is Johannes Tinctoris. His twelve treatises, written around the years 1472-84 – not all of which survive – quote Greek theorists and philosophers along with Boethius. However, Tinctoris did not look favourably upon the musical works of earlier times. In the introduction to his *Liber de arte contrapuncti*, dated 11 October 1477, he states 'I have held in my hands at one time or another many old songs...that are so inept and stupidly composed that they offended our ears rather than pleased them'.²⁹ One of the most interesting aspects of his writing is the attention he pays to other composers of the time, whose works he considers to be of the highest quality. These include Ockeghem, Regis, Busnoys, Caron and Faugues and their teachers, Binchoys, Dufay and Dunstaple. As well as providing examples from these composers' works, he also states that he modeled his own 'modest works' upon their compositions. The musical examples which are included in treatises such as *Proportionale musices* (pre-1475), were specially composed and provide evidence to show the types of improvised counterpoint, both vocal and instrumental, which Tinctoris considered to be the most effective.

Consonance and dissonance, and mathematics were combined by Tinctoris in *Liber de arte contrapuncti* as he provided a detailed analysis of how the dissonant suspension worked in terms of the time value assigned to it and when and how it should and should not be used. He described the difference between the use of consonance and dissonance in improvisation and written

²⁹ Johannes Tinctoris, *Liber de arte contrapuncti*, trans. and ed, Albert Seay (American Institute of Musicology: [Rome], 1961) p 14.

counterpoint, the explanation for which was centred on vertical intervals rather than horizontal lines of counterpoint.³⁰

Tinctoris was critical of some of the most celebrated composers of his day, particularly in their use of musical proportion, which – in Tinctoris' view – they either used incorrectly or did not understand at all. In view of this, he provided his treatise *Proportionale musices* to address the problem. This covered the relationship between different note-values and between mensurations.³¹

The theoretical writings of Gafurius were heavily based upon earlier theorists, again including Boethius. New Latin translations of previously unknown Greek sources by authors such as Aristotle and Plato enabled a detailed study of ancient theorists to be carried out. Many of these works were translated specifically for Gafurius so that he could understand and study them more fully, given his almost incomplete ability to read the language.³² For 20 years from about 1480, Gafurius sought out and read past treatises and attempted to apply them to the most practical concerns of his time, such as tuning, the mensural system, counterpoint, and proportion.³³ By doing so, he was able to elucidate the work of the ancient theorists and through his work, enabled others to read the works of writers such as Aristides and Ptolemy amongst many others.

His two most celebrated treatises, *Practica musice* and *De harmonia musicorum instrumentorum opus* cover similar topics. Although the two treatises were published in 1496 and 1518 respectively, much of the work was completed

³⁰ Bonnie J. Blackburn, 'Music Theory and Musical Thinking After 1450', in Reinhard Strohm and Bonnie J. Blackburn (ed.), *New Oxford History of Music: Music as Concept and Practice in the Late Middle Ages* (OUP: Oxford, 2001) p 330.

³¹ Ibid pp 332–3.

³² Claude V. Palisca, *Humanism in Italian Renaissance Musical Thought* (Yale University Press: London, 1985) p 191.

³³ Bonnie J. Blackburn, 'Music Theory and Musical Thinking After 1450', in Reinhard Strohm and Bonnie J. Blackburn (ed.), *New Oxford History of Music: Music as Concept and Practice in the Late Middle Ages* p 335–6.

well before the dates of final publication. Sections of *Practica musice* were published in 1492 – having been started in around 1481 – and a draft of *De harmonia* was completed as early as 1500.³⁴ Although much of the material in both works is simply an historical survey of ancient Greek theory through to Boethius, Gafurius challenges some of the commonly-held beliefs concerning the fundamental definitions of music, tuning, and the modes.³⁵ On many occasions Gafauris provides a more rigorous examination of ancient theory than Boethius, thereby bringing to light aspects of Greek scholarship that had previously been neglected.

2.2.5 Later Renaissance Theory: Aron, Glarean and Zarlino

Pietro Aron was one of the most influential theorists of the sixteenth century. Seven of his treatises survive, the first of which was published in 1516 and the last in 1562, seventeen years after the author's death. Aron's primary concern was the application of issues such as mode, counterpoint and *musica ficta* to the music of his contemporaries. Aron believed in the traditional system of eight modes that had been explored by scholars throughout the Middle Ages and early Renaissance. In his *Trattato della natura et cognitione di tutti gli tuoni di canto figurato* of 1525, he showed how – in his opinion – the mode of a polyphonic work was determined by the final and range of the tenor part.³⁶ His reasoning for this was that the tenor usually carried the cantus firmus, but that the same principle applied when no pre-existing material was present. However, when a voice other than the tenor carried the cantus firmus, it was this part that took modal priority.³⁷ Aron addressed the problem of melodies that spanned a

³⁴ Claude V. Palisca, *Humanism in Italian Renaissance Musical Thought* pp 203–7.

³⁵ *Ibid.* p 208.

³⁶ Bernhard Meir, *The Modes of Classical Vocal Polyphony* (Broude Brothers Ltd: New York, 1988) pp 70–1.

³⁷ Cristle Collins Judd, 'Modal Types and "Ut, Re, Mi" Tonality: Tonal Coherence in Sacred Vocal Polyphony from about 1500', *JAMS* 45/3 (Autumn, 1992) p 430.

much greater range than usual, and cited a number of examples to show how the mode could be determined by the tessitura of the melody rather than its entire range.

A further problem discussed in detail concerns transposition – usually upwards by a fourth or fifth – and chromatic tones. The mode of a polyphonic work was always certain when the final of the tenor was D, E, F, or G, unless a key signature was present. However, one exception existed to this rule: works containing a B^b in the signature and a final of either D or F in the tenor were considered to be first and fifth tones respectively, the accidental having been included at the start of the work for inflection, rather than to indicate transposition.³⁸ Aron goes on to give a series of polyphonic examples to demonstrate each of the eight modes, explaining how they can be classified using the rules previously discussed. Many of these examples were prints taken from musical anthologies published by Petrucci, including *Motetti de la corona*.³⁹

Whilst Aron's application of existing modal theory was original, his discussion of counterpoint was not. His writings – primarily in *Libri Tres de Institutione Harmonica*, first published in 1516 – were an adaptation of previous work by Tinctoris and Gafurius.⁴⁰ He classifies intervals into perfect consonances, imperfect consonances, and dissonances. The perfect fourth – about which there had been considerable debate previously – was classed as a dissonance in two-part writing, but consonant when a third voice was added a third or fifth below.

The Swiss music theorist Heinrich Glarean is most famous for his *Dodekachordon*, published in 1547. However, many of the ideas explored in this are a revision and development of an earlier work of 1516, *Isagoge in*

³⁸ Peter Bergquist, 'Mode and Polyphony around 1500', *The Music Forum* 1 (1967) p 106.

³⁹ Cristle Collins Judd, 'Reading Aron Reading Petrucci: The Musical Examples of the *Trattato della natura et cognitione di tutti gli tuoni (1525)*', *EMH* 14 p 123.

⁴⁰ Peter Bergquist, 'Mode and Polyphony around 1500', p 108.

Musicen. The earlier of the two texts was compiled as a classroom aid, and was written specifically at the request of his own students.⁴¹

The work contains ten chapters in total. The first of these address the fundamental areas of music, and include a list of musical definitions, and a discussion of the Pythagorean scale, and acoustic theory, much of which is taken from the work of previous theorists such as Boethius, Guido, and Gafurius. The final four chapters of *Isagoge in Musicen* reveal Glarean's early interest in modal theory. Chapters VII and VIII deal with the Greek modes, as discussed by Boethius, whilst Chapters IX and X concentrate more closely on the church modes. Although Glarean can be forgiven for simplifying many aspects of ancient theory – this was, after all, a textbook for beginners – he fails to understand some concepts of Boethian modal theory, particularly issues of transposition. Despite this problem, *Isagoge in Musicen* displays a basic understanding of ancient theory, and a clear desire to learn from the work of past theorists. Much of the material is not original, but formed a basis upon which Glarean could further his scholarship in later years, and provides a clear example of the areas that his pupils were required to understand.

Dodecachordon, on the other hand, is an extended exploration of the modal system. The work is split into three books: the first addresses the fundamentals of music – in a similar way to *Isagoge in Musicen*; the second book covers the modal system with regard to Gregorian chant; and the third explores the modal properties of polyphony. Glarean was critical of the way in which modal schemes had been presented by scholars such as Gafurius, and so was keen to present his twelve-mode theory in a methodical way. According to Glarean, four modes had been ignored throughout the Middle Ages and Medieval periods. Rather than eight modes, Glarean demonstrated – through a

⁴¹ Frances Berry Turrell, 'The *Isagoge in Musicen* of Henry Glarean', *Journal of Music Theory* 3/1 (April 1959) p 98. Much of this section is based on Turrell's article which contains a complete translation of *Isagoge in Musicen*.

series of mathematical calculations – that there were in fact twelve, by adding the Ionian and Aeolian and their respective plagal forms.⁴² In order to demonstrate that his modal theory was applicable to plainchant of his own time, Glarean also provided a number of contemporary examples. One of the main difficulties in proving his theory was that so few authentic chants ended on A. Rather than including just one or two examples of the Aeolian mode, Glarean inserted five. These included some of the most common chants of the time, such as *Pater noster*, *Credo in unum Deo*, and *Ave Maria gratia plena*. Not only was Glarean demonstrating that the Aeolian mode was still in frequent use, but also that it was assigned to some of the most venerable texts within the Catholic tradition. Glarean's method of demonstrating the current use of the Ionian mode – and its plagal form – was not based solely on musical examples, but also on contemporary performance practice. The use of B's within chant and polyphony had created heated discussion for centuries. Glarean stated that flattened Bs had been introduced in the Lydian and Hypolydian mode by singers, and that rather than this merely being an alteration, two new modes had been created. Two familiar communion chants with finals on B and an octave species F-f – *Tollite hostias* and *Per signum crucis* – are cited to demonstrate the Hyperphrygian mode. These chants with three whole tones below the final had previously been assigned to mode 4, the Phrygian and its corresponding plagal form having been rejected.

Of Zarlino's three treatises, *Le istituzioni harmoniche* (1558), *Dimostrazioni harmoniche* (1571), and *Sopplimenti musicali* (1588), the first is his most important work. It is also widely considered to be one of the most important works in the history of music theory. Through his work, Zarlino intended to unite speculative theory and compositional process, which before

⁴² Sarah Fuller, 'Defending the *Dodecachordon*: Ideological Currents in Glarean's Modal Theory', *JAMS* 49/2 (Summer 1996) p 196. The following information is based heavily upon this article.

had frequently been addressed independently. Throughout his treatises, Zarlino demonstrates a wide-ranging knowledge of theology, mathematics, classical history and literature, ancient and modern philosophy, and – of course – music.

Le istituzioni harmoniche is split into two parts, or books as they are called. Book 1 contains a review of the philosophical, cosmological and mathematical basis of music. Book 2 explains the ancient Greek music system and provides a modern theory of music addressing issues such as consonance and dissonance, tuning, the rules of counterpoint, and modal theory.

Boethius had shown how the Greeks divided the monochord into strings of varying lengths in order to create the first six partials. This was known as the harmonic division, in which the numerator remained constant whilst the denominator increased from 1 to 6.⁴³ Zarlino’s theory of consonance was based upon the arithmetic division, in which the numerator decreased from 6-1 whilst the denominator remained as 6 throughout. Both systems can be seen in Table 2.1.

Table 2.1 – Harmonic and Arithmetic Division of Tones

	HARMONIC			ARITHMETIC	
	Fraction	Interval		Fraction	Interval
1	$\frac{1}{1}$	fundamental		$\frac{6}{6}$	fundamental
2	$\frac{1}{2}$	octave		$\frac{5}{6}$	minor third
3	$\frac{1}{3}$	fifth		$\frac{4}{6}$	fifth
4	$\frac{1}{4}$	double octave		$\frac{3}{6}$	octave
5	$\frac{1}{5}$	major third		$\frac{2}{6}$	fifth
6	$\frac{1}{6}$	minor third		$\frac{1}{6}$	fifth

The Pythagoreans had first developed the arithmetical system, and explored the various possibilities using the ratios 1:2, 2:3, and 3:4, to create the intervals of

⁴³ Robert W. Wienpahl, ‘Zarlino, the Senario, and Tonality’ JAMS 12/1 (Spring, 1959) p 30. The following discussion is largely based upon Wienpahl’s article.

an octave, fifth and fourth respectively. Zarlino called this series the 'numero sonario' as he claimed that the numbers 1 to 6 formed all the superparticular ratios needed to form the consonances. Major and minor sixths could not be included in this system as they had the ratios of 5:3 and 8:5 respectively. However, Zarlino demonstrated that as the major sixth is made up of a fourth and major third, and a minor sixth of a fourth and minor third, both could be included in the 'corpo sonoro', or group of permitted consonances.

Zarlino is particularly noted for his discussion of modal theory. In *Dimostrazioni harmoniche* of 1571 he renumbers the modes, stating that the primary scale should begin on C rather than A which had been used in Boethian theory. His reasoning for this was that the intervals between the finals of the first three authentic modes were tone, tone, semitone, as they were in the Greek Dorian, Phrygian and Lydian modes. He abandoned the use of the Greek names for the modes, preferring to use numbers instead.

Within *Le istituzioni* he covered the choice and range of mode within a polyphonic work. He states that careful attention should be paid to the text when choosing the mode of a freely-composed work, and to the mode of the pre-existing material if any is to be used. In both cases, the tenor should always conform to the correct tones of the mode, and that cadential points should coincide with the grammatical divisions of the text.⁴⁴ He states that the tenor is the most important structural voice and so it should always stay within the range of the chosen mode, and should also be composed first. He goes on to say that if the tenor is composed in plagal mode, then the bass should be composed in the corresponding authentic mode, and that if this is done, the other voices can be composed easily.⁴⁵ The difference between the extremes of range in the tenor and bass voices should not exceed a fourth or fifth, and in all voices the

⁴⁴ Bernhard Meir, *The Modes of Classical Vocal Polyphony* p 65.

⁴⁵ *Ibid.* p 66.

ambitus should not exceed a tenth or eleventh. He notes that the tenor and soprano should be composed using the same range, as should the alto and bass, or in other words, if the tenor is in the plagal mode, the soprano should be as well, and the alto and bass should use the authentic mode.

Zarlino stresses the importance of the triad in polyphonic works, and in particular how a fifth can be split using two different types of third. He noted how the feel of a chord changes depending upon where the major third is placed. When the fifth is divided into a major third and then a minor third – or a major triad in modern parlance – it is ‘very delightful to the ears’, and when the major third is above the minor – or a minor triad – it produces a ‘sad or languid effect’.⁴⁶ Zarlino identified two types of mode: those with the major third above the final – modes I, II, VII, VIII, IX and X; and those with the minor third above the final – modes III, IV, V, VI, XI and XII. Although he doesn’t specifically call them major or minor modes – this didn’t happen for another hundred years – it is clear that Zarlino distinguished between them, thus paving the way for a fully-fledged major-minor system.

2.2.6 Early Tudor Theory: John Tucke

A small notebook held in the British Library is one of the few surviving sources of music theory originating from Britain before the Reformation. The book, compiled by John Tucke – and dating from the first quarter of the sixteenth century – contains notes on coloration and mensural practice, compositional and notational devices, Boethian and Pythagorean music theory, and a glossary of musical terms.⁴⁷ Tucke began to collect material for the book whilst in his final year at Winchester College, before moving to New College, Oxford in

⁴⁶ Zarlino, *L'istitutioni harmoniche* (1589), selected sections reprinted and translated in Robert W. Wienpahl, ‘Zarlino, the Senario, and Tonality’ p 29.

⁴⁷ Ronald Woodley, *John Tucke: A Case in Early Tudor Music Theory* (Clarendon Press: Oxford, 1993).

March 1501. In addition to his education within the quadrivium he possibly attended tutorials with the informant choristarum of New College or Magdalen from whom he learnt concepts of contemporary music theory. On completing his studies, Ronald Woodley suggests that Tucke may have lectured at Oxford on Boethius, Johannes de Muris and John Hothby, as well as on aspects of mensural music and proportion.⁴⁸ Tucke's notebook is therefore particularly interesting as it contains information collected during his student days, some of which was used as a teaching aide later in his career at Oxford, Higham Ferrers and Gloucester Abbey.

The material in the notebook is both theoretical and practical. Tucke includes extended sections on imperfection and alteration, ligatures, and the value of notes in various mensurations. One of the most important aspects is the discussion of the different colours that can be used for notes – black, green, yellow, blue, red, sanguine, and purple – and the relationship between their effects.⁴⁹ He shows the way in which plainchant can be manipulated both on its own, and within polyphonic works; it can be performed in temporal arsis (retrograde), temporal thesis (inversion), and temporal arsis and thesis (retrograde inversion).⁵⁰

On a more theoretical level, Tucke shows how notational devices can be used in order to compose a work 'by means of the seven planets, or of the seven species of metals, or [even] of the nine Muses'.⁵¹ Each note of the Guidonian scale is assigned a specific planet, for which inspiration is drawn from Marcus Tullius (Cicero) and Boethius.⁵² The same method is applied to the metals and Muses, although the ordering and relationship between specific

⁴⁸ Ibid. p 15.

⁴⁹ Ibid. p 69. Woodley investigates this further towards the end of the book in the chapter entitled 'Coloration and *Typus*: A Preliminary Investigation' pp110–32

⁵⁰ Ibid. p 81.

⁵¹ Ibid. p 87.

⁵² Ibid. pp 89–91.

notes and planets/metals/Muses is 'the business of philosophers and alchemists, not musicians'.⁵³ Further space is given to the Guidonian monochord, Boethius' number theory, and the Pythagorean discovery of proportion. An extended passage notes the Greek poetical metres, reproduced in Table 2.2. Woodley states that that these were possibly included as they could be used to construct a cantus firmus layout, but they could form a basis for rhythmical motivic patterns as well.

At the end of his notebook Tucke includes a glossary of musical terms, some of which are discussed in detail in the main body of the book, whilst others are not. The manuscript ends with a list of medicinal recipes, including ways to heal problems associated with the 'stomacher', 'hede', and 'bake'.⁵⁴

⁵³ Ibid. p 93.

⁵⁴ Ibid. p 60.

Table 2.2 – Rhythmic Motifs in John Tucke’s Notebook

NAME	RHYTHM
Dactyl	■ ■ ■
Spondee	■ ■
Pyrrhic or Pariambus	■ ■
Iambus	■ ■
Trochee	■ ■
Tribrach	■ ■ ■
Molossus	■ ■ ■
Anapaest	■ ■ ■
Amphibrach	■ ■ ■
Amphimacrus	■ ■ ■

NAME	RHYTHM
Bacchius	■ ■ ■
Antibacchius or Palimbacchius	■ ■ ■
Proceleumatic	■ ■ ■ ■
Diambus	■ ■ ■ ■
Ditrochee	■ ■ ■ ■
Antispast	■ ■ ■ ■
Choriambus	■ ■ ■ ■
Ionic <i>a maiore</i> [recte <i>a minore</i>]	■ ■ ■ ■
Ionic <i>a minore</i> [recte <i>a maiore</i>]	■ ■ ■ ■

NAME	RHYTHM
First Paeon	■ ■ ■ ■
Second Paeon	■ ■ ■ ■
Third Paeon	■ ■ ■ ■
Fourth Paeon	■ ■ ■ ■
First Epitrite	■ ■ ■ ■
Second Epitrite	■ ■ ■ ■
Third Epitrite	■ ■ ■ ■
Fourth Epitrite	■ ■ ■ ■
Dispondee	■ ■ ■ ■

CHAPTER 3: Analytical Models and Methods

3.1 Introduction

The output concerning the analytical study of renaissance polyphony is vast. Scholars such as Hugh Benham, Margaret Bent, Bonnie J. Blackburn, Fabrice Fitch, Elizabeth Leach, Jessie Ann Owens, Rob Wegman, and Dolores Pesce have, among others, made substantial contributions to the broad body of knowledge within this area of research.¹ However, it is beyond the scope of this study to provide a detailed survey of each aspect. In view of this I intend to concentrate specifically on studies that examine Fayrfax's works in detail. I think that it is also useful to highlight a number of studies concerning other pre-tonal repertoire. In particular, I will examine studies that approach the analytical procedures from several different angles, rather than those which concentrate solely upon one, such as mode, imitation, or motivic treatment for example. As is the case with much analysis in this area, the majority of the completed studies deal almost exclusively with continental composers. However, it may be possible to draw methods from the work of these scholars where similarities between continental music and early Tudor compositions occur. I will concentrate in particular on articles which address the more general problems encountered when attempting to analyse renaissance polyphony, whatever its origin may be. Studies that deal with specific aspects of a work will be

¹ Items by these authors relating specifically to analytical study include: Hugh Benham, *John Taverner: His Life and Works* (Ashgate, Aldershot, 2003); Margaret Bent, 'Words and music in Machaut's Motet 9', *EM* 31/3 (August 2003) pp 363–88; Bonnie J. Blackburn, 'On Compositional Process in the Fifteenth Century', *JAMS* 40 (1987) pp 210–84; Fabrice Fitch, *Johannes Ockeghem: Masses and Models* (Champion: Paris, 1997); Elizabeth Eva Leach, 'Counterpoint and Analysis in Fourteenth-Century Song', *JMT* 44/1 (Spring 2000) pp 45–79; Jessie Ann Owens, *Composers at Work: The Craft of Musical Composition 1450–1600* (OUP: Oxford, 1997); Rob C. Wegman, *Born for the Muses: The Life and Masses of Jacob Obrecht* (Clarendon Press: Oxford, 1994); Dolores Pesce (ed.), *Hearing the Motet: Essays on the Motet of the Middle Ages and Renaissance* (OUP: New York, 1997).

discussed within the individual chapters concerning that particular area of investigation – this will be examined in more detail at the end of this chapter.

3.2 Previous Analyses of Fayrfax's Works

Edwin Warren's *Life and Works* study is the only large-scale examination of Fayrfax's works.² In the Preface to his book, Warren explains that his aim was to bring greater recognition to 'one of England's least-known composers'. This previous lack of recognition was primarily due to the fact that no modern editions of Fayrfax's work had been produced. This task was facilitated by the publication by the American Institute of Musicology between 1959 and 1966 of Fayrfax's extant works, both sacred and secular. As Warren studied the life of the composer in more detail during the late 1950s and early 1960s, a number of his articles were published.

Warren groups the works for his analysis by type and assigns a whole chapter to each. Of Fayrfax's sacred works, he begins by examining the masses, followed by the Magnificats and finally the motets. Within each chapter individual elements are addressed: these include motto and cantus firmus treatment, setting of text, texture and imitation, harmonic style and dissonance. The overall structure of the book means that it is difficult to see how these individual elements interact and therefore how a given piece functions as a whole. The way in which many aspects of the works are described shows the infancy of analytical thought at the time, for example the description of chords as inverted. This vertical rather than horizontal examination of the works permeates the whole study. Traits which are now considered to be the norm for works of this period are given harsh treatment: the bipartite structure of the works indicated by a change in metre, is considered to be conservative; the

² Edwin B. Warren, *Life and Works of Robert Fayrfax 1464–1521* (American Institute of Musicology: Dallas, 1969).

extensive use of three voices is said to be reminiscent of Dunstaple. Although many of the sections are scored for three voices, the way in which Fayrfax handles them – such as the juxtaposition of high and low voice trios – is very forward-looking.

Warren's concluding remarks state that Fayrfax's style 'did not develop far past that of his earliest-known work, the Magnificat *Regale* of about 1490'.³ This is most certainly not the case, the difference between *Salve regina* and *Maria plena virtute* is considerable and the transition in style from one to the other can be traced through a more detailed study of the sacred works.

The books about early Tudor music in England by Benham and Harrison remain the standard texts for any study of the period.⁴ The limited detail of Benham's analysis is not surprising considering the nature of his study. A whole chapter of *Latin Church Music in England* is set aside to discuss the lives and works of Robert Fayrfax and Nicholas Ludford, the two pre-eminent composers of their generation. Benham's description of what he considers to be the most important aspects of the composer's works are particularly astute considering that the study of the music of the early Tudor period was still in its relative infancy. However, the general style of analysis is one of description rather than explanation. Throughout his analysis Benham shows how Fayrfax's works relate to those of other composers, both of his own generation and those of the surrounding generations. The development of the composer's style is also considered. Sections of *Salve regina* and *Eterne laudis liliium* are included to demonstrate the way in which note values increase in length, signifying the move towards a syllabic and less elaborate style of text setting. Benham goes

³ Ibid. pp 179–80.

⁴ Hugh Benham, *Latin Church Music in England c. 1460–1575* (Barrie & Jenkins: London, 1977) and Frank Ll. Harrison, *Music in Medieval Britain* (Routledge and Kegan Paul: London, 1958).

some way to identifying Fayrfax's individual style by drawing attention to his frequent use of motives and syncopation.

The order in which the individual works within the 'O bone Jesu', 'Regali' and 'Albanus' groups are discussed briefly, but only passing references are made to the reasoning behind these conclusions. Although some of the biographical information is now known to be inaccurate, the observations made about the music itself provide an excellent bed from which future analysis can stem. The way in which the works are not studied in isolation but compared and contrasted with the music of composers from both England and the continent is also worthy of merit.

Thomas Messenger's short article highlights the way in which Fayrfax's five-part masses are structured according to groupings of voices.⁵ In this study Messenger provides evidence to show that the movements of each individual mass are unified through similar groupings of voices. He draws particular attention to the similarity in structural scoring between Missa 'O quam glorifica' and Missa 'Tecum principium'. A table is given comparing the groupings of voices in the Gloria and Credo of each mass showing that all four movements (two Glorias and two Credos) are scored in an almost identical way. There are, however, a number of differences and Messenger makes no attempt to explain why these occur. He also states that the basic outline of the other movements (Sanctus and Agnus dei) in each mass is the same but that they do differ slightly from the first two and from each other. Nothing is included to show how these movements differ and no theory is proffered as to why this occurs.

The scoring of Fayrfax's *Salve regina* is explored alongside other settings of the same text in another short article by Carol Williams.⁶ Williams is

⁵ Thomas Messenger, 'Texture and Form in the Masses of Fayrfax' *JAMS* 24/2 (Summer 1971) pp 282–5.

⁶ Carol J. Williams, 'The Salve Regina Settings in the Eton Choirbook' *Miscellanea musicologica, Australia* 10 (1979) pp 28–37.

concerned with the way in which *Salve regina* settings in the Eton Choirbook follow a number of conventions that had developed with the text-setting. She begins by addressing the different versions of the text and chant, including tropes which are commonly found in England during this period. Her findings, displayed in the form of a single table, and with no notes or explanation, show how the fourteen settings share a number of characteristics. The most obvious of these are that the text is always treated in a highly sectionalized way by contrasts between semi-choir and tutti, and perfect and imperfect mensuration; the troped verses are sung by solo voices whilst the words 'O clemens', 'O pia', and 'O dulcis virgo Maria' are sung by all voices. A number of the statements that Williams makes concerning the general characteristics of the *Salve regina* settings are now considered to be characteristics of all large-scale works – both antiphons and individual movements of masses – including the division of the text into two halves, indicated by a change in metre from perfect to imperfect, and the contrast in scoring. Although the material presented in the table is of interest, the greatest failing of the article is the lack of explanation of the results obtained and the study of the works in isolation. If another work from the Eton Choirbook, or any other individual work of mass movement was included in the table then it would be obvious that many of the traits which Williams considers to be specific to the settings of the text examined can be found in most early Tudor works.

Of the seven masses studied by Fugler in his thesis, six are by Fayrfax's contemporary Nicholas Ludford, and one is by Fayrfax himself.⁷ The work as a whole remains the only large-scale study into pre-compositional arithmetical planning by composers of the period. Fugler explains in considerable detail how his analytical method was devised. He discovers that it is not possible to apply

⁷ Fugler, Stephen P., *Pre-compositional Mathematical Planning in Mass Settings by Nicolas Ludford and Robert Fayrfax* (Unpubl. PhD thesis: University of Exeter, 1990).

one methodology to all of the works investigated and that some flexibility is necessary. Different methods of analysis are compared, and all possible approaches are considered in order to show why one has been chosen over another. The length given to the final note of each section is one aspect that is examined in great detail.

Fugler begins by providing an overview of how music was an integral part of Medieval life particularly in the universities as part of the quadrivium. He gives a history of the development in mathematical thought before turning his attention to number symbolism. On a more detailed level, Fugler investigates the way in which the seven masses considered are constructed from an arithmetical perspective. Fugler uncovers the way in which the movements are unified by recurring patterns of numbers. The most important of these are closely related to the lengths of sections, which are indicated by a change of scoring or metre, or by a complete pause in the music.⁸

In the 1950s scholars such as Hughes and Warren explored the musical relationships between pairs or groups of works. In her thesis Ann Signe Edahl addresses the way in which pre-existing material is incorporated into mass

⁸ Within the 'Introduction' I have shown how Roger Bray believes that Missa 'O quam glorifica' survives in a form that is considerably different from the way that it was originally conceived. Fugler's analysis does not take this into account and so his results differ dramatically from Bray's research in this area. However, I will provide a brief summary of Fugler's findings here.

The seven masses studied vary in their arithmetical complexity and it is Fayrfax's Missa 'O quam glorifica' which has the simplest structure. Many of these numbers are symbolic or are multiples of them. The whole work is constructed around multiples of 27, itself a multiple of three ($3 \times 3 \times 3$ or 3^3) and therefore a 'perfect' number. Although not every section can be analysed in this way, Fugler provides evidence to show that this number does form the basis for the work as a whole. In addition to the lengths of sections the author shows the relationship between perfect and imperfect time, and the semi-choir and *tutti* sections. It becomes apparent that most of these are multiples of 27. Those that are not (indicated by the fact that they contain half beats) are multiples of $13\frac{1}{2}$. Fugler concludes his chapter on Missa 'O quam glorifica' by presenting a hypothesis as to how the work was planned.

Although Fugler's results can be seen to be incorrect – given the fact that his analysis is not based upon the original notation – it is possible that similar proportional patterns are still present within the work. This area of investigation will be discussed further in Chapter 4.

cycles and groups, and how this is used to unify them.⁹ She identifies and explores three types of mass by composers such as Fayrfax, Ludford and Taverner: cantus firmus; polyphonically derived; and freely composed. A chapter is given to each of these types and a number of works are studied in detail. The way in which plainchant is manipulated beyond the traditional method of its presence solely in the tenor is investigated paying particular attention to Taverner's Missa 'Gloria tibi Trinitas'. She explains how notes of the chant can be repeated, omitted or changed in order to accommodate the length of the text. With regard to Fayrfax, Edahl briefly discusses the placement of the cantus firmus and its integration into the texture as a whole, but provides little evidence to show when or how this occurs.

The way in which the missing parts of Fayrfax's motet *O bone Jesu* can be reconstructed by examining the mass of the same name is also given some attention. Where the sole surviving voice of the motet is identical to portions of the mass, Edahl proposes that the other voices were also identical. Having highlighted where these passages occur, a reconstruction of the motet is provided. The whole of the following section is concerned with the explanation as to how the motet was reconstructed. No attempt is made to show how the movements of the mass relate to each other musically, and the way in which the Mass and Magnificat are connected receives only a brief mention. Edahl goes some way to exploring Fayrfax's extended use of motivic writing. The study shows that this element of the composer's music deserves further investigation, particularly if different works are compared rather than concentrating solely on unifying motives within individual works

⁹ Edahl, Ann Signe, *The Use of Pre-existing Material in the Early Tudor Mass Cycle* (Unpubl. PhD thesis: University of Wisconsin-Madison, 1993).

3.3 Analyses of Continental Works

One of the earliest studies examining the problems associated with the analysis of pre-Baroque music was Putnam Aldrich's article 'An Approach to the Analysis of Renaissance Music', published in 1969.¹⁰ Aldrich begins by stating his dissatisfaction with the state of analytical procedures relating to pre-tonal music, particularly the way in which many highly regarded scholars have attempted to analyze music of the period from a tonal perspective. He criticizes the horizontal analyses which have investigated the chord structure of compositions, and states that new analytical methods can be constructed by reading the works of Renaissance theorists. The following sections are intended to show – in Aldrich's opinion – which aspects of music analysis were of greatest importance to Renaissance theorists and musicians. He addresses six issues: modal theory; solmization; structure of the modes; procedure of the modes; hierarchy of cadences; and imitation. Much of the writing is a general description of these terms and only passing references are made as to how they can be applied to Renaissance music.

Aldrich uses two works to demonstrate his analytical methodology: an anonymous three-part setting of *Je suis venu* and Josquin's *Plus nulz regretz* for four voices. In addition to the areas already cited, Aldrich states that the text and harmonic structure must be investigated. In view of this it seems contradictory to begin his first analysis by stating that it is unclear whether *Je suis venu* is a vocal work. He states that the tenor is the most important voice as it establishes 'the cadences and tonal structure of all the main divisions'.¹¹ The use of the word 'tonal' seems very unusual considering his criticism of previous tonal analyses of Renaissance music at the beginning of the article. Aldrich does go some way as to explaining how the work was composed. He

¹⁰ Aldrich, Putnam, 'An approach to the Analysis of Renaissance Music' *Music Review* 30 (1969) pp 1–21.

¹¹ *Ibid.* p 12.

draws the conclusion that the contra-tenor is a 'filler' voice. His reasoning for this is that for the most part – until the end – the tenor and superius share much material, particularly in imitation. The function of the contra-tenor is to change the texture and to modify and clarify the cadences.

The analysis of Josquin's work is conducted in much the same way. The most important feature – in Aldrich's view – is the pairing of the voices. The tenor and superius pair is considered to be the more important as it dictates the main divisions in both the text and music. The way in which the voices share material and the use of imitation are considered briefly but no extended explanation or discussion is presented. Aldrich makes no mention of one of the most important structural devices of the period, the use of *cantus firmi*.

An analysis of another work by Josquin, *Ave Maria...virgo serena*, is presented by Cristle Collins Judd.¹² Her analytical research has concentrated almost exclusively on Josquin's works and a number of her articles have been published since the 1980s. Throughout these articles, Judd's methodologies remain very similar with occasional adaptation according to the individual work under examination. Judd begins her article on *Ave Maria...virgo serena* by outlining the two different approaches taken by analysts of pre-Baroque music. The first is that of the presentist and the second is that in which music 'is examined in terms of its position as a precursor of seventeenth- and eighteenth-century tonality'.¹³ Judd states that her analyses are based upon both of these approaches and use existing analytical techniques which have been modified and expanded. Her study is split into five areas: text, mode, articulation of structure, pitch organization and tonal structure. From within these, the

¹² Cristle Collins Judd, 'Some Problems of Pre-Baroque Analysis: An Examination of Josquin's *Ave Maria ... Virgo Serena*' *Music Analysis* 4/3 (October 1985) pp 201–39.

¹³ *Ibid.* p 201.

methodologies employed for mode, counterpoint, cadence and imitation are said to have been heavily based upon sixteenth-century music theory.¹⁴

Judd breaks down her methodology into two areas. The first of these takes a formalist approach, examining imitation, cadence, and motivic structure, whilst the second looks at ways in which voice-leading can be of use when examining pre-tonal music. Although some of the sections provide a general overview of the theoretical background – for example, the section entitled ‘Mode’, which is now a familiar concept – others examine aspects of the music in a very different way from previous studies. One of the more extended sections, that on cadential treatment, is such a case. Although cadential theory was one aspect examined by Medieval and Renaissance theorists, few scholars had studied the way in which composers vary the placement and weight of cadential points. The theory behind Judd’s work is taken from Meier, but whereas Meier simply describes the different types and functions of cadences – as is the nature and purpose of the study – Judd uses this information as an analytical device.¹⁵ Cadential points are examined as a result of the horizontal movement of melodic lines. The function of each voice is explained clearly and Meier’s vocabulary is used in order to describe the movement of each voice. Judd states that the type of cadence, its voicing and its tone ‘provides a hierarchy of structural patterns’.¹⁶ The type, placement and tone of the cadences are one of the main structural devices of the work. Judd tabulates this information in order to provide an overall view of the work.

Another structural device is the duration of each section, which – in Judd’s opinion – is determined primarily by the text. Judd uses the basic pulse –

¹⁴ One of the most commendable aspects of the article is that the purposes of the analysis are cited from the beginning.

¹⁵ Bernhard Meier (trans. Ellen S. Beebe), *The Modes of Classical Vocal Polyphony* (Broude Brothers Limited: New York, 1988). First published as Bernhard Meier, *Die Tonarten der klassischen Vokalpolyphonie* (Oosthoek, Sceltema & Holkema: Utrecht, 1974).

¹⁶ Cristle Collins Judd, ‘Some Problems of Pre-Baroque Analysis: An Examination of Josquin’s *Ave Maria* *Virgo Serena*’ p 216.

a semibreve in the edition included – as her units of time, rather than bars which have been used in many other analyses. This method is most useful considering the varying number of editions and trends regarding the barring of early music. One flaw in Judd's diagram of durational planning is that the sum of the smaller divisions of the works does not equal the length stated: the third division is 154.5; the fourth 153; whilst 155 is the number given for the duration of the entire work. The way in which Judd arrived at her calculations is not made clear, so it is difficult to account for these discrepancies.

Much of the imitative writing and motivic structure is shown to be based on the *Ave Maria* plainchant. In particular, Josquin uses the rising fourth with which the chant begins, and the rising c-d-e pattern which occurs twice within it. Judd shows that one of these two motifs appears in almost every line of the work – even those that are not based exclusively upon the chant – although some alteration is also employed in places. One of the reasons for the extensive use of the two motifs is that the work is highly imitative. Within *Ave Maria...virgo serena* – as in many of Josquin's works – two primary forms of imitation are used. The first is an almost exact repetition of phrases by one voice, or more. This can be seen most clearly at the beginning of the work in the first two phrases of the text. The second is a repetition of pairs of voices – usually top two followed by bottom two – as seen in bars 32-40 and 54-65.

According to Judd, the text of a work governs many other compositional aspects: choice of mode, musical texture, symbolic associations, and musical borrowing. The mode of the work should be appropriate to the text, and cadential tones – as prescribed by the chosen mode – should coincide with important structural divisions of the text.

Daniel Leech-Wilkinson begins an article on Machaut by highlighting a number of restrictions that are 'particularly effective in inhibiting attempts to

come to grips with anything more than the surface of the music'.¹⁷ Two of these restrictions are given detailed discussion. The first is the view that a work can only be fully understood at the time at which it was written, thus making any analysis of renaissance polyphony highly problematic. Leech-Wilkinson points to the writings of twentieth-century philosophers and structuralists who have shown that this view is untenable.¹⁸ The second restriction frequently encountered is the view that polyphonic works were composed one voice at a time. This process of 'successive composition' is rejected by Leech-Wilkinson for two reasons: (1) because treatises in which this compositional technique was advocated were primarily written for beginners; and (2) because in his view, composers must have had complete control over their musical material – rather than leaving things almost entirely to chance.

Leech-Wilkinson states that the analyst's task is 'to describe what is found [in the music], and to do so in whatever terms may seem most appropriate given the nature of the findings'.¹⁹ Two different methods of description are considered when analysing music of the fourteenth century: (1) those that are based upon fourteenth-century terms; and (2) those that have been developed in more recent times. The latter option is given extended discussion by the author. He states that there is a clear difference between the notion of using modern analytical tools, and identifying compositional techniques that had not yet been developed in the fourteenth century. Leech-Wilkinson therefore believes that twentieth-century analytical methods should be used if they are able to probe more deeply into the music, rather than simply describe what is happening on the surface.

¹⁷ Daniel Leech-Wilkinson, 'Machaut's *Rose, Lis* and the Problem of Early Music Analysis' *MA* 3/1 (March 1984) pp 9–28.

¹⁸ The works of Gadamer (including *Truth and Method*) and Jonathan Culler are cited.

¹⁹ Daniel Leech-Wilkinson, 'Machaut's *Rose, Lis*' p 11.

The methods used by Leech-Wilkinson in the analysis of Machaut's *Rose, lis* are drawn from the preceding discussion of general analytical techniques, and are largely based upon a number of Schenkerian-looking graphs.²⁰ Leech-Wilkinson begins by examining the hexachordal areas employed in *Rose, lis* that form the surface-level structure. After a discussion of the theoretical aspects of fourteenth-century hexachords, the author identifies two that are used for the majority of the work under examination – the Hard and Natural, and Soft and B_♭, of the normal Gamut.²¹ The predominant melodic patterns in the work – all of which are based upon the previously mentioned hexachords – are a falling fourth or fifth from G, or the corresponding ascending phrase beginning on C. After close examination of the entire work, Leech-Wilkinson believes that 'the listener is left in no doubt that the descending hexachord, at least at the level of the musical surface, is the subject of *Rose, lis*.'²²

Leech-Wilkinson states that it is the process of tension and resolution – as seen in the first few bars of *Rose, lis* – that underlies Machaut's songs, and even the entire repertoire of fourteenth-century song: the 'progression from conation to resolution, from desire to fulfilment, is fundamental not only to the music, but also to the poetry and to the whole tradition of Courtly Love, the lover seeking endlessly for rest from his desire which only his Lady can provide'.²³

In terms of the large-scale structure, *Rose, lis* is based upon four descending sequences. The first, from the start of the work – which has already been discussed – descends from C to F and then down to C, whilst the second,

²⁰ The top system displays a new edition of the work in full, and beneath it four other systems appear; these are labelled – from top to bottom – melodic patterns, cadences, voice leading I, voice leading II.

²¹ *Ibid.* p 18. The naming of the hexachords is based upon the work of Hirshberg.

²² *Loc. cit.*

²³ *Loc. cit.*

third, and fourth fall from G to C. Leech-Wilkinson believes that *Rose, lis* is simply a prolongation of these basic structural progressions. He states that:

Despite the relative complexity of the surface, *Rose, lis* is built around nothing more than a sequence of octave intervals (in medieval terms, the most perfect interval), descending through the hexachord towards the final. Indeed, it may be appropriate to see these octaves simply as a vertical projection, enclosing the polyphony, of a unique line, itself a large-scale analogue of the repeated motives of the work's surface.²⁴

By stripping away the 'surface decoration', leaving only various aspects of voice leading and part writing on a number of hierarchical levels, this fundamental structure is revealed.²⁵ It also shows the hierarchical nature of the individual voices. The author demonstrates that in terms of voice leading the work is coherent without the triplum – the upper-most voice. Indeed, much of the work's structural framework is to be found not in the outer voices – triplum and tenor – but in the cantus and contratenor.

²⁴ Ibid. p 23.

²⁵ Ibid. p 20.

3.4 Method

Within this section I hope to outline the methodological framework that underpins the project as a whole. I will explain in general terms the way in which I have approached the analysis, and my reasons for doing so. It is not the purpose here to examine the detailed methods of analytical interrogation used in Part 2, nor to provide a critique of previous studies that have directly influenced my own research; these issues will be addressed within the relevant chapters as they arise.

The previous sections in this chapter and Chapters 1 and 2 have covered a number of analytical issues. I have provided a summary of the main analytical approaches employed during the twentieth century, discussed some of the problems associated with the analysis of renaissance polyphony, and identified ways in which pre-tonal music has been analysed before, both in general terms, and with regard to Fayrfax. Having considered all of this information, two primary questions need to be answered: (1) How is this relevant?; and (2) How can this information be used in my own analysis of Fayrfax's sacred works?

The treatises that survive from a large corpus of theoretical work were written for a number of different reasons: (1) to address the concept of music within a broader philosophical context; (2) to provide a clarification of the basic sets of rules for aspects of chant or polyphony that had been uncertain in previous eras; (3) to act as a pedagogical tool, both as an introduction to basic musical concepts, and for use by more advanced students; and (4) to provide a manual outlining the correct ways in which chant or polyphony should be performed. Much of the surviving theoretical work deals with similar issues such as tuning, modal theory, concepts of consonance and dissonance, arithmetical proportions and notation.

The application of these treatises to the study of early Tudor works is problematic for a number of reasons: (1) the majority of surviving works were

written by continental theorists, and therefore concentrated almost exclusively on continental repertoire; (2) in many cases it is not known for whom the treatises were written – for established composers or beginners; (3) the nature of the treatises is usually retrospective – both in terms of the repertoire discussed, and the methods used; and (4) the compositions were probably cited because they demonstrated the theories that the writers wanted to express.²⁶

The main focus within the vast majority of treatises was not an analysis of every aspect of an individual work, or groups of works, but a thorough investigation of broader issues, using previously composed works only as examples. Although the treatises examined above do not provide a set of clear analytical tools that can be used in order to conduct a detailed interrogation of Fayrfax's sacred works, they are useful in showing aspects of music which theorists considered particularly important. I am more concerned with the topics that have a direct bearing on the analysis of Fayrfax's compositional output, rather than issues relating to practical music-making, such as tuning. In summary these are: the relationship between science, maths, and music – particularly proportion; the classification of consonant and dissonant intervals; and the modal properties of plainchant and polyphony.

Although the vast majority of the surviving theoretical writing concerning renaissance polyphony addresses music written on the continent, studies have shown that both continental music and printed treatises were present in England from the early part of the sixteenth century. By the fifteenth century a number of treatises had found their way into English sources; works by Guido d'Arezzo, including *Micrologus* and *Prologus in Antiphonarium* – both discussed in Chapter 2 – and Jean de Muris, including *Musica speculativa* still survive.²⁷ In

²⁶ For example, the discussion of mode by Glarean. For more information see Chapter 6.

²⁷ Theodor Dumitrescu, *Anglo-Continental Musical Relations c. 1485–1530* (Unpubl. PhD. thesis: University of Oxford, 2004) p 183. See also: Christian Meyer, Michel Huglo, and Nancy C. Phillips, *The Theory of Music Vol IV: Manuscripts from the Carolingian Era up to c. 1500 in Great Britain and in the United States of America* (RISM: München, 1992).

a number of cases the works of different theorists were copied – and recopied – into single manuscripts. The surviving sources – most of which are fragmentary – show an interest in a wide variety of subjects, including intervals and consonance theory, counterpoint, mensuration and proportions, and other more speculative and historical topics.²⁸ Many of these treatises were almost certainly copied for monastic or university use.²⁹ Studies of early Tudor music education have showed the retrospective nature of the texts used, for example those by Boethius and Jean de Muris.³⁰

It therefore seems likely that in the early part of his life an early Tudor composer such as Fayrfax could have come into contact with treatises by continental theorists, as well as those by English theorists such as John Tucke and John Hothby. Even if these works were not used officially as part of a university education, their presence within some of the most important educational and monastic establishments reveals at the very least a passing interest. The majority of the treatises that are known to have existed within these establishments date from the fourteenth and fifteenth centuries. Whilst this shows that early Tudor composers were not necessarily influenced by the major continental theorists of the time, such as Tinctoris and Gafurius, it does demonstrate that within the universities there was an opportunity to study earlier treatises. Whether Fayrfax or his contemporaries made use of this opportunity is unclear, but it seems likely that they were aware of the existence of the most important ones, and may have had some knowledge of their contents through their more general musical education.

Fayrfax almost certainly encountered several of the compositional processes he employed through the performance of works by other composers,

²⁸ Theodor Dumitrescu, *Anglo-Continental Musical Relations* pp 187–8.

²⁹ *Ibid.* p 186.

³⁰ Nan Cooke Carpenter, *Music in the Medieval and Renaissance Universities* (Da Capo: New York, 1972) p 159.

both those of his contemporaries and those of the previous generation. Although at present there is no conclusive evidence to show that Fayrfax was a chorister at any particular institution, given his musical expertise later on in life it seems unlikely that he had no formal musical training whatsoever in his formative years. No primary source material is known to survive recording the choristers' education within the large musical establishments. However, a number of contracts survive showing what was expected of a new *magister choristarum* when he took up his post. Thomas Ashwell's deed of appointment as cantor at Durham in 1513 reveals that he was responsible for teaching the choristers:

assiduously and diligently and in the best way that he knows, to play upon the organ and to sing both plainchant and polyphony, to wit: 'planesong, priknot, faburdon, dischant, swarenote, et coudre', and he will teach them for nothing. He will teach the aforesaid monks and boys four times on every non-festal day, twice before noon and twice after noon. He will diligently and adequately listen to their lessons, not hiding any of the aforesaid skills from them.³¹

This reveals that the musical education of the choristers was quite extensive. The majority of the choristers' time would have been taken up by their presence within the daily liturgy of the establishment with which they were associated. Even before they mastered the more complex aspects of plainchant and polyphony – both improvised and composed – choristers took part in services by acting as crossbearers, censers, taperers, and water bearers.³² Beginning their education at around the age of seven, choristers were first taught to read and write, and to memorize the psalms with their psalm tones, and other Latin

³¹ Reprinted in Frank. LI. Harrison, *Music in Medieval Britain* p 429 from *Historiae Dunelmensis Scriptores Tres*, p 413. Translated by Nick Sandon.

³² Kathleen Edwards, *The English Secular Cathedral in the Middle Ages* (Manchester University Press: Manchester, 1967) p 316.

texts used within the liturgy.³³ Having learnt the process of solmization, they would then be instructed how to read music using the gamut and the practical application of hexachords, how to read mensural notation, and the different forms of improvisation against a pre-existing chant.³⁴

Whilst the education of choristers was almost entirely practical, learning within the universities was probably more speculative. The use of Boethius' works within the *quadrivium* at universities has already been discussed. In addition to arithmetic, geometry, astronomy, and music, which formed the four mathematical subjects of the *quadrivium*, grammar, rhetoric, and logic were also studied. Together, the *quadrivium* and *trivium* – the name given to the additional three expressive subjects mentioned, and known together as the seven liberal arts – formed a basis for the medieval educational system.

The extent to which students were actually instructed in music at the Universities of Oxford and Cambridge remains unclear.³⁵ For the Bachelor of Arts degree students were required to have studied for three years, attended lectures, and taken part in debates.³⁶ The process by which a degree in music was awarded seems to have mirrored this, but rather than taking part in debates, students were required to compose a number of works during their statutory three-year term, some of which were performed at the award ceremony.³⁷ So whilst the instruction may have been theoretical, the degree was awarded for a clear demonstration of ability in practical music-making. The importance of Fayrfax in the history of music education within the early Tudor universities, and the problems surrounding the identification of works submitted for his degrees has already been addressed.³⁸

³³ Jane Flynn, 'The Education of choristers in England', in John Morehen (ed.), *English Choral Practice, 1400–1650* (CUP: Cambridge, 1995) pp182–3.

³⁴ *Ibid* pp 181–8.

³⁵ Roger Bray, 'Music and the Quadrivium', *M&L* 76/1 (Feb., 1995) p 8.

³⁶ *Ibid*. p 7.

³⁷ *Ibid*. p 8.

³⁸ See 'Introduction'.

Two general methods of investigation are possible when analysing a relatively large body of works, rather than individual works. The first is to examine one work at a time, grouping the works by type; such as mass, motet, Magnificat etc – as shown by Warren and Benham in their studies of Fayrfax and Taverner respectively.³⁹ The second is to identify a number of different areas of investigation; such as mode, imitation, cantus firmus treatment etc.⁴⁰ In my own opinion, the second method is preferable to a bar-by-bar analysis of individual works in most cases. It allows a comparative analysis to be carried out more easily, which will help to identify any patterns that may occur throughout all of the works being studied.

The broad concept of subdividing works into smaller components in order to facilitate analysis has been taken from structuralism. However, the criteria for segmentation are based upon linear concepts rather than large blocks of musical material. While it is evident that fifteenth- and sixteenth-century theorists and composers were aware of the vertical nature of polyphonic works to some extent, the initial building blocks available to composers of the time were almost entirely horizontal. The primary examples of these include the use of a cantus firmus and modal theory.

Some methods of analytical notation have been taken from Formalism. However, by doing so I am not suggesting that the fundamental concepts implied by these methods are applicable to early Tudor polyphony – for

³⁹ Edwin B. Warren, *Life and Works of Robert Fayrfax 1464–1521* (American Institute of Musicology: Dallas, 1969). Hugh Benham, *John Taverner: His Life and Music* (Ashgate: Aldershot, 2003). Works are also addressed individually in: Fabrice Fitch, *Johannes Ockeghem: Masses and Models* (Champion: Paris, 1997). However, Fitch's reasoning for this arrangement is clearly stated. The masses are grouped within chapters by 'stylistic affinity' (p 8), thereby enabling a clear identification of similar patterns within groups of works. By stating his reasons for examining Ockeghem's works in this way from the beginning – unlike Warren and Benham – is it easy to see that Fitch has achieved his aims and objectives. Although this arrangement is suitable for Fitch, my preference has been to examine the works without any chronological preconceptions, which is one of the reasons for my approach.

⁴⁰ This method is frequently used when analysing one work, particularly within articles. However, I am not aware of any other large-scale study of renaissance polyphony that pursues this method of investigation.

example, I do not believe that an entire work is seen as a magnification of its individual cells, nor that the relationship between cells is more important than their content. It is only the method, and not the theoretical underpinning implied by the method, that has been utilised.

The ease with which twentieth-century analytical methods can be used in the interrogation of Fayrfax's works is varied. Many of these methods are at different stages of development. Areas of study that have been addressed in considerable detail are not necessarily the easiest to employ. For example, in the twentieth century scholars built upon the work of sixteenth-century theorists in their investigation of mode. By developing new analytical methods pre-tonal polyphonic works have been examined in a variety of different ways. It is not the multiplicity of methods that presents a problem in itself, but rather the fact that at its heart, the suitability of its application depends upon the repertoire being examined. As discussed above, the majority of theoretical writing about mode is based upon continental works. In developing new analytical techniques, twentieth-century scholars – such as Meier and Judd – have continued to concentrate almost exclusively upon the same repertoire. As a result, several problems are encountered when attempting to apply any of these methods to Fayrfax's works, as will be seen in Chapter 6.

Within this study I have made use of two types of statistical interrogation: Confirmatory Data Analysis (CDA) and Exploratory Data Analysis (EDA). CDA is used in order to examine whether or not previously posited claims are correct, whereas EDA is used when analysing material in order to formulate hypotheses by searching for new patterns and trends.⁴¹ Both types of analysis can make use of similar methods. I have made use of fairly simple frequency analyses and descriptive statistics – such as measures of central tendency and statistical

⁴¹ Jan Beran, *Statistics in Musicology* (Chapman & Hall: Boca Raton, 2004) p 23.

variability – in order to summarize data sets.⁴² In doing so the following mathematical symbols have been used: \bar{x} (mean), x_{range} (range), and σ (standard deviation).

Many of the results are presented in tabular or graphical form, which I believe is the clearest and most concise way to do so. Much of the analysis is a commentary on the information recorded in Appendix 2, which provides a basic summary of some of the most important structural features of individual works or mass movements. Throughout the tables in the thesis, the shading of cells indicates the following:

 Voice not included in work  Voice missing from work

Approximately 200,000 datum are available for analytical interpretation within the chosen repertoire, but not all can be used as voices have been lost in some works, therefore making the others redundant from an analytical perspective. Where computer-aided analysis can be used, all data can be examined, but where manual/visual/aural methods are employed, small subsets are used. I am primarily concerned with searching for patterns that occur at the surface level of the musical material, rather than for underlying fundamental structures in a Schenkerian manner.

On several occasions I have provided a detailed comparison of mass movements. These have been a central focus because they were almost certainly written within a short space of time, and so patterns can be identified more easily. If these patterns occur within individual movements as well as within the work as a whole, then it seems less likely that they are not 'kinkera' –

⁴² For a detailed investigation of more advanced statistical analytical methods used within musicology see: Jan Beran, *Statistics in Musicology*.

a term taken from cryptanalysis meaning a pattern, which although highly significant, is coincidental.⁴³

Some people – such as Kerman – have, and still will be, critical of the quantitative approach to music analysis,⁴⁴ but within this particular study I believe it is a valid method for a number of reasons: (1) the highly mathematical way in which music was perceived within the academy from the Middle Ages to the sixteenth century through an education in Boethian principles; (2) the way in which patterns can be identified by suppressing uninformative features ‘so as to make the important features stand out more clearly’;⁴⁵ (3) the practical uses that ensue – such as addressing contentious issues of musical attribution, and the completion of works in which voices have been lost; and (4) the ease with which the quantitative methods can be applied to other music of the period.

The aim of this thesis has been to develop a set of transferable analytical techniques and to uncover some stylistic aspects of Fayrfax’s works. Each chapter could quite easily provide enough material for an entire thesis, so it has been necessary to limit the parameters of my study. By its very nature, it has been impossible to conduct an exhaustive discussion of all aspects covered within each chapter, and as a result, some areas of investigation are more detailed than others. What it has been possible to do is to demonstrate the different ways in which this type of music can be examined, and the types of results that can be obtained.

Three primary methods of investigation have been used: (1) a detailed discussion of the ways in which previous analytical studies have been conducted, the types of results obtained from them, and the resulting problems and potentials for their application to the early Tudor polyphonic repertoire; (2)

⁴³ See: I. J. Good, ‘The Philosophy of Exploratory Data Analysis’, *Philosophy of Science* 50/2 (June 1983) p 290. Cryptanalysis (not to be confused with cryptology) is the breaking of ciphers without a key, relying upon systems such as letter frequency counts amongst other things.

⁴⁴ See Chapter 1 for Kerman’s comments.

⁴⁵ I. J. Good, ‘The Philosophy of Exploratory Data Analysis’ pp 285–6.

an investigation of theories put forward by previous scholars regarding the work of early Tudor composers, an interrogation of Fayrfax's works in light of these theories, and a confirmation or rejection of them; and (3) a fresh evaluation of Fayrfax's surviving works, employing analytical techniques derived from a close examination of the music itself, and from my own previous knowledge of early Tudor polyphonic works.

In view of the lack of previous work in this area of investigation, it has been necessary to devise new methods in order to examine this repertoire. In order to tabulate information clearly and succinctly, symbols have been used on several occasions. Many of these are taken from analytical methods that are not normally associated with music of this period. In examining Fayrfax's sacred works various symbols from these other analytical methods seemed to be most easily and appropriately applicable within this context.

Within the section on cantus firmus treatment, symbols from set theoretical analysis and semiotics have been used. The former seemed particularly appropriate when analysing Missa 'Albanus'. In this work a short nine-note motive is used on various scale steps in its original – or prime – state, in retrograde, and in retrograde inversion. This manipulation of material is handled in exactly the same way as it is in twelve-note composition and therefore the same symbols can be used to identify the different forms. The prime form ($P-0$) is taken to be the statement that begins on the finalis of the mode, in this case F. This form is both the first and last to be heard in the work and is used by Fayrfax within the head motive with which each movement begins. An inversion of the prime form is noted $I-0$ and a superscript r denotes that the form is used in retrograde. The pitch upon which each form begins can be identified by the number in the second half of the notation (0, 1, 2, 3, etc.).

Symbols to show the way in which the cantus firmi are varied in the other

masses owe a great deal to semiotics.⁴⁶ Each of the four chants are assigned paradigmatic heading (*A-D*) as a whole. Lower case letters indicate when the chant is split into different sections. In Missa ‘*Tecum principium*’ for example, where the chant is split into two, the sections are labelled *Ax* and *Ay*, and when it is split into three sections, they are labelled *Ap*, *Aq*, and *Ar*. All of the other symbols – except + to indicate a cadential extension – are also taken from semiotics.

Table 3.1 – Key to Symbols Used in Analysis of Cantus Firmus Treatment

SYMBOL	MEANING
A	Whole chant used
Ax	Segments when chant split into 2
Ay	
Ap	Segments when chant split into 3
Aq	
Ar	
F	Fragment
I	Imitation
^	notes inserted (in middle of phrase)
v	notes omitted (in middle of phrase)
+	phrase extended to cadence

The following abbreviations are used in Part 2 to identify the five voices employed by Fayfax: TR (Triplex), M (Medius), CT (Contratenor), T (Tenor) and B (Bassus). Within the commentary of individual vocal lines a ‘step’ indicates movement by a tone or semitone – depending upon the position of the first note within the mode – a ‘skip’ indicates movement by a third or fourth, and a ‘leap’ indicates an interval of a fifth or greater. Throughout the thesis I have referred to specific pitches using the notation where *c*¹ is ‘middle C’.

⁴⁶ See Chapter 1.

A number of symbols are also used in the musical examples in Chapter 8 (these can be found in Appendix 1 in Volume 2). This chapter deals with the contrapuntal relationships between voices, predominantly the way in which they relate to each other horizontally. These symbols are shown in Table 3.2.

Table 3.2 – Key to Symbols Used in the Analysis of Contrapuntal Textures

SYMBOL	MEANING
~~~~~	motif (Mx above the line identifies the motif used)
<b>CS</b>	consonant skip
<b>C</b>	common tone
<b>LN</b>	upper neighbour note
<b>UN</b>	lower neighbour note
<b>(a)</b>	altered note
<b>P</b>	passing note

### 3.4.1 Computer-Aided Analysis of Renaissance Polyphony

Scholars working in a number of different musical fields have highlighted the benefits of using computer software in music analysis. The greatest advantage of this technique is the time that can be saved when collating large amounts of quantitative data from musical sources.

The monotonous arithmetic calculations involved in laying the groundwork for analysis offer a formidable barrier to meaningful interpretation. This strongly suggests a push towards automation, which offers the potential for advances in the speed, scope, and accuracy of any musical analysis. Passing the bulk of the tedious analytical work to a computer allows musicians to focus on evaluating the results of such an analysis. Free from the repetitive prerequisite effort needed to reach higher-level musical conclusions, musicians can make meaningful analyses more quickly and effectively.⁴⁷

⁴⁷ Michael R. Schutz, *Computer Aided Analysis of Post-Tonal Music* (Unpubl. BMA thesis: Pennsylvania State University, 2002) p 1.

Although the potential for this type of automation has been noted for many years, significant advances have not been made in this area for several reasons.⁴⁸ The first – and probably the biggest obstacle – is that so few people have the unique combination of musical knowledge and technical expertise.⁴⁹ The second is the wide variety of repertoire that exists, and the ways in which different types of music can be analysed. Concentrating more specifically on western classical music, areas of investigation have included: representation, indexing, retrieval, compression, feature detection, machine learning, perception, intellectual property rights, and music analysis.⁵⁰ The third is the fact that the representation of music can take a number of different forms: symbolic, audio, visual, and metadata. All of this research falls under the broad heading of Music Information Retrieval (MIR).⁵¹

One of the greatest problems in studying music with regard to MIR is that the majority of research has concentrated solely upon the study of monophony rather than polyphony. This is partly due to the fact that the most lucrative area in MIR is Query by Singing/Humming. QBS/H systems are able to identify works – most usually pop songs – from melodic fragments hummed by the user.⁵² It is also because the analysis of polyphonic music presents a greater number of

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⁴⁸ An early study highlighting the use of computer-assisted analysis is: Arthur Mendel, 'Towards Objective Criteria for Establishing Chronology and Authenticity: What Help can the Computer Give?', *Josquin des Prez : proceedings of the International Josquin Festival-Conference held at the Juilliard School at Lincoln Center in New York City, 21–25 June 1971* (OUP: London, 1976) pp 297–308.

⁴⁹ It is interesting to note that the majority of scholars carrying out research in this area are based in Computer Science rather than Music departments.

⁵⁰ For an overview of these topics see: Joe Futrelle and J. Stephen Downie, 'Interdisciplinary Communities and Research Issues in Music Information Retrieval', *Proceedings of the Third International Conference on Music Information Retrieval* (ISMIR, 2002) pp 215–221. For a more detailed study see: J. Stephen Downie, 'Music Information Retrieval', *Annual Review of Information Science and Technology* 37 (2003) pp 295–340. Available from [http://music-ir.org/downie_mir_arist37.pdf](http://music-ir.org/downie_mir_arist37.pdf).

⁵¹ Many of the computer applications used in these different areas can be found on the following website: <http://www.music-ir.org/evaluation/tools.html>

⁵² It is the commercial application of this system that has driven it forward. For example, a monophonic line – most usually that of a pop song – can be hummed into a computer system or web-based application; the program can identify the song and then recommend other songs to the user based upon a number of similar characteristics.

conceptual problems than the analysis of monophonic music. As a result, the analysis of large-scale multi-part works has not yet been given much attention.

My search for possible computer applications was influenced by a number of factors. The most important of these was the type of analytical methods I hoped to pursue. A number of articles addressing renaissance polyphony had suggested to me that a computer-aided analysis could provide some fruitful results. Two main areas of investigation seemed to be a good starting-point; I will explain why these areas are of particular interest to me, how I went about researching the use of possible computer applications, the methods I used, and problems I encountered.

The first area of investigation is where statistics can be used in order to trace stylistic features. The following passage referring specifically to Fayrfax's works, and taken from an article by Roger Bowers, is such an example:

[In about 1515–20] an incipient divergence [occurred] between the two voices appointed to sing, respectively, the *contratenor* and *tenor* parts in five-part polyphony. The starting-point in this process, the traditional equality of *contratenor* and *tenor*, may be exemplified by Robert Fayrfax's setting of *Salve regina*, which can be taken as typical of the Eton Choirbook music of the late fifteenth century. Of its five voices, the *contratenor* and *tenor* share virtually identical ranges (respectively, *c-f'* (once *g'*) and *c-f*), and identical tessituras. The mean pitch of the *contratenor* lies 8.46 semitones above *c*, that of the *tenor* 8.19; that is, the mean pitches of both lie barely a quarter of a semitone apart, displaying an insignificant divergence of only 1.66 per cent. However, in *Maria plena virtute*, a much later work by Fayrfax (he died in 1521), visual inspection suggests that the two voices are no longer entirely equal; the *contratenor* appears persistently to explore the higher reaches, and the *tenor* the lower reaches of their respective ranges. Calculation confirms this observation. The mean pitch of the *contratenor* lies 11.05 semitones above *c*, that of the *tenor* only 6.93. A substantial divergence exceeding 22 per cent has opened up,

representing a gap of more than a major third; the mean pitch of the *contratenor* lies a little above *b*, that of the *tenor* a little below *g*.⁵³

The fairly basic set of numbers needed to provide the comparison described above requires a considerable amount of work; the pitch of 2557 notes must be recorded (1387 in *Salve regina* and 1170 in *Maria plena virtute*).⁵⁴ The interesting result, and time-consuming method, suggests that an automated analysis would save a great deal of time when examining this type – and amount – of quantitative data. Finding an application which could record the pitch of each note of a work, rather than performing the task manually, would enable a comparison to be made not only between CT and T – which is obviously an important factor in attempting to provide some clues as to the date of Fayrfax's works – but between all voices.

In a number of publications Rob Wegman has investigated rhythmic density in the works of fifteenth-century composers.⁵⁵ In an appendix to his large-scale study of Obrecht's masses he explains his method for doing so:

Rhythmic density in fifteenth-century music can be studied with the method of average note-value. This method involves the adding up of all note-values in a given piece, and dividing the total by the number of notes, thus arriving at the average value (V). In practice, it seems best to count the top two voices only, since these are least subject to stylistic change. The unit of value is the semibreve (S); an imperfect breve is thus counted as 2 S, a minim as 0.5 S, and a dotted semiminim as 0.375 S. If a mass section has an average note-value  $V = 0.75 S$ , this means that semibreves and minims are used in approximately equal proportion. A section with an average value of 1.5 S uses notes generally twice as large and therefore needs twice the speed to produce a similar sound ( $1.5 \div$

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⁵³ Roger Bowers, 'The Vocal Scoring, Choral Balance and Performing Pitch of Latin Church Polyphony in England, c. 1500–58' *JRMA* 112/1 (1986–1987) p 41. (Author's italics).

⁵⁴ Although Bowers does not explain his method, I assume that his calculations were conducted manually, rather than by computer.

⁵⁵ See: Rob C. Wegman, 'Concerning Tempo in the English Polyphonic Mass, c. 1420–70) *Acta Musicologica* 61/1 (Jan–Apr 1989) pp 40–65; and Rob C. Wegman, 'Rhythmic Density in the Masses of Jacob Obrecht', in *Born for the Muses: The Life and Masses of Jacob Obrecht* (Clarendon Press: Oxford, 1994) pp 375–83.



0.75 = 2). The central idea behind this is that it makes no difference whether one sings large notes quickly or small notes slowly: rhythmic density is held in direct balance to tempo. Changes in density, consequently, are likely to reflect changes in speed. Musical evidence bears this out. In fifteenth-century music there is always a shift to larger values when the mensuration changes from  $\circ$  to the faster  $\text{♩}$ . An example is Obrecht's *Missa Petrus apostolus*, where  $V(\circ) = 0.675$  and  $V(\text{♩}) = 0.757$ . The stroke in the sign prescribes a tempo increase. The synchronous change in rhythmic density suggests that the semibreve speed in  $\text{♩}$  is approximately  $0.757 \div 0.675 = 1.121$  times faster than that in  $\circ$ .⁵⁶

The average note-values are plotted on a scatter diagram with  $V(\circ)$  on the x-axis and  $V(\text{♩})$  on the y-axis. One graph shows Obrecht's masses, and another shows the same group of works together with thirty English masses, and thirty-five motets from the Eton Choirbook. The results for the Obrecht masses are also recorded in a table, and sorted by decreasing rhythmic density.

Wegman's study is conducted in order to investigate the changing function of the mensuration signs  $\circ$  and  $\text{♩}$  over a period of time (1430-1500). He demonstrates that a proportional relationship occurs between the two signs, and concludes that 'the stroke sign in  $\text{♩}$  prescribes a tempo increase'.⁵⁷ This relationship may not be quite as clear-cut in the early Tudor repertoire. Sixteenth-century English copyists frequently do not differentiate between  $\text{♩}$  and  $\text{♭}$ , in fact the two can appear in different voices at the same time; the same is also true of  $\text{♩}$  and  $\circ$ .⁵⁸ However, the methods employed by Wegman can be used in other ways. A visual inspection of Fayrfax's two works mentioned in Bowers' article suggests that note-values increased during the composer's lifetime; the values in *Maria plena virtute* generally being longer than those in *Salve regina*. By calculating the rhythmic density of Fayrfax's surviving works, it

⁵⁶ Rob C. Wegman, 'Rhythmic Density in the Masses of Jacob Obrecht', in *Born for the Muses* pp 375–6.

⁵⁷ Ibid. p 376.

⁵⁸ For example, in the Sadler Partbooks (Oxford, Bodleian Library MS Mus. e. 1-5) different mensural signs are used for the voices in the first section of Fayrfax's *Ave dei patris filia*.

may be that this – together with the analysis of other aspects, such as the relationship between CT and T as described above – will provide some evidence to suggest a possible chronology.

The other defining factor in my search for computer software was the vast amount of music that I hoped to study and the state in which it was present. Fayrfax's surviving works contain a total of approximately 200,000 notes. To encode each of these manually would have taken a considerable amount of time, and although it would have undoubtedly revealed some interesting results, it was beyond the time-frame of this particular study. This immediately ruled out programs such as Humdrum for which music must first be translated into a syntax before any analysis can be performed.⁵⁹ Humdrum syntax requires not only the notes to be encoded, but also time signatures, key signatures, metre, accidentals, and slurs. The majority of Fayrfax's pieces were available in SCORE or Sibelius files, and those that were not could be inputted with relative ease. In view of this I was more interested in searching for programmes that could analyse MIDI files, a format common to both SCORE and Sibelius, and one of the most cross-platform compatible file types.

Three software packages are widely used for statistical analysis within the mathematics, engineering, computer science, and social science communities: SPSS, Statistica, and Matlab. A free Matlab add-on programme finally presented me with a tool which would convert MIDI files into Matlab files. Using Scoremid I was able to convert the works – or individual movements in the case of the masses – into three MIDI files; one of the complete work, one of the section in perfect time and one of the section in imperfect time – where other sections were present, these were also converted separately. Each MIDI file was then imported into a sequencer (Cubasis VST) in order to check for

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⁵⁹ For more information see: <http://www.music-cog.ohio-state.edu/Humdrum/index.html>

mistakes and also to check that the correct MIDI channel had been assigned to each voice. Once any adjustments had been made, I then imported the file into Matlab using the 'readmidi' command contained in MIDI Toolbox.⁶⁰ Matlab turns each MIDI file into a matrix – or array – recording for each note in the work the onset (based on the number of crotchets per note), duration (again in crotchets), MIDI channel, MIDI pitch, velocity, onset (in seconds), and duration (in seconds).

**Table 3.3 – Computer programmes used in analysis**

PROGRAMME	FUNCTION	USE
SCORE 4	Engraving	Type-setting
Sibelius 3	Music processing	Type-setting
Cubasis VST	Sequencer	Checking correct MIDI channels have been assigned
Matlab	Data analysis	Statistical investigation
MIDI Toolbox 1.01	Matlab add-on	Converting MIDI file to note matrix
SCOREMID v1.1	SCORE add-on	Converting SCORE file to MIDI file

The best way to show the capabilities of Matlab is by way of an example. In order to do this I have taken a short passage from the Credo of Missa 'O bone Jesu'. Example 3.1 shows the musical extract, and Table 3.3 shows the resulting matrix, once the correct commands have been executed.

⁶⁰ Created by Tuomas Eerola and Petri Toiviainen (Department of Music, University of Jyväskylä, Finland). <http://www.jyu.fi/musica/miditoolbox/>.

Example 3.1 – Extract Used For Demonstration of Computer-Aided Analysis: Missa 'O bone Jesu', Credo

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The image displays a musical score for the Credo section of a Mass, specifically the 'O bone Jesu' part. It consists of five staves. The first four staves are vocal lines, and the fifth is a bass line. The lyrics are: 'um. Et in u - num do - mi - num'. The score includes various musical notations such as notes, rests, and bar lines. The lyrics are written below the notes, with hyphens indicating syllables that span across multiple notes. The first staff starts with a treble clef and a key signature of one flat. The second and third staves also use treble clefs. The fourth and fifth staves use bass clefs. The score is numbered 24 at the beginning.

um. Et in u - num do -

um. Et in u - num do - mi - num

um. Et in u - num do - mi - num

Et in u - - num do -

Et in u - num do - - mi -

**Table 3.4 – Matlab Matrix of Example 3.1**

Onset (crotchets)	Duration (Crotchets)	MIDI Channel	MIDI Pitch	Velocity	Onset (seconds)	Duration (seconds)
0	2	1	65	64	0	1
0	2	2	60	64	0	1
0	2	3	53	64	0	1
2	3	1	64	64	1	1.5
2	2	2	59	64	1	1
2	2	3	55	64	1	1
4	2	2	60	64	2	1
4	2	3	57	64	2	1
5	1	1	65	64	2.5	0.5
6	2	1	62	64	3	1
6	1	2	59	64	3	0.5
6	1	3	55	64	3	0.5
7	1	2	57	64	3.5	0.5
7	1	3	53	64	3.5	0.5
8	2	1	64	64	4	1
8	4	2	55	64	4	2
8	4	3	52	64	4	2
10	2	1	60	64	5	1
12	8	1	62	64	6	4
12	4	2	57	64	6	2
12	8	3	50	64	6	4
16	4	2	62	64	8	2
24	4	2	62	64	12	2
24	4	3	57	64	12	2
24	4	4	53	64	12	2
24	4	5	50	64	12	2
28	6	1	69	64	14	3
28	4	2	57	64	14	2
28	2	3	57	64	14	1
28	4	4	53	64	14	2
28	4	5	50	64	14	2
30	4	3	53	64	15	2
32	8	2	62	64	16	4
32	8	4	53	64	16	4
32	4	5	50	64	16	2
34	3	1	65	64	17	1.5
34	2	3	50	64	17	1
36	4	3	53	64	18	2
36	4	5	50	64	18	2
37	1	1	64	64	18.5	0.5
38	2	1	62	64	19	1
40	4	1	60	64	20	2
40	4	3	57	64	20	2
40	8	4	52	64	20	4
40	8	5	45	64	20	4
42	4	2	64	64	21	2
44	4	1	64	64	22	2
44	2	3	57	64	22	1
46	2	2	60	64	23	1
46	2	3	57	64	23	1
48	4	2	59	64	24	2
48	4	3	59	64	24	2
48	4	4	52	64	24	2
48	4	5	43	64	24	2
50	2	1	64	64	25	1

Bearing in mind the passages from Bowers and Wegman above, the values in columns 2 and 4 of the array, recording the length and pitch of each note, are of particular interest. In order to work out the average rhythmic density of the whole example, I used the Matlab 'sum' command, which produced another matrix showing the sum of each column.

**Table 3.5 – Sum of Columns in Example 3.1: All Voices**

Onset (crotchets)	Duration (Crotchets)	MIDI Channel	MIDI Pitch	Velocity	Onset (seconds)	Duration (seconds)
1338	192	140	3149	3520	669	96

The value in column 2 (192) was then divided by the total number of notes in the example (55) – equal to the number of rows – to give a rhythmic density for this section of 3.490909091.⁶¹ The unit of value for rhythmic density is the crotchet; a minim is therefore 2, a semibreve 4, and so on. This process was performed on all of the MIDI files: complete works – or movements – perfect, and imperfect sections.

Within SCORE I had written a macro that automatically assigned a MIDI channel to each voice from 1 to 5 (TR-B). This enabled me to use the 'getmidich' command, which recognizes the value in column 3 in order to extract the values for each individual voice. I then proceeded to work out the rhythmic density of each voice in the same way as I had done for all voices. In the example used here these worked out as shown in Table 3.6.

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⁶¹ Values were not rounded down as they were needed for further calculations.

**Table 3.6 – Sum of Columns in Example 3.1: Individual Voices**

	<b>TR</b>	<b>M</b>	<b>CT</b>	<b>T</b>	<b>B</b>
<b>Total Rhythmic Value</b>	42	46	48	28	28
<b>Total Length</b>	14	14	16	5	6
<b>Rhythmic Density⁶²</b>	3	3.29	3	5.6	4.67

These methods were used in order to work out the rhythmic density values for each work and each mass movement. Within the masses, I also calculated the rhythmic density for the entire work – by adding the total rhythmic values and dividing them by the sum of the total lengths.⁶³ Table 3.7 shows an example (Missa ‘Albanus’) where all values have been calculated. The same methods can be used in order to calculate the average pitch of each voice, which results in the figures recorded in Table 3.8. This automation enables a comparison of pitch to be made easily not only between two voices, but between all voices in an entire work.

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⁶² The values are not entirely accurate as they do not take into account the ties at the beginning and end of the line. However, it will serve in order to demonstrate the methods that were used.

⁶³ This is a more accurate method than simply taking an average of the averages for each movement.

**Table 3.7 – Rhythmic density in Missa ‘Albanus’**

Work	Missa 'Albanus' (Gloria)	Missa 'Albanus' (Credo)	Missa 'Albanus' (Sanctus)	Missa 'Albanus' (Agnus)	TOTAL
Total Rhythmic Value	8026	10134	8043	7534	<b>33737</b>
Total Length	1807	2080	1932	1769	<b>7588</b>
Total Rhythmic Average	4.441615938	4.872115385	4.163043478	4.258903335	<b>4.446099104</b>
<b>Metre</b>					
Perfect 1 Total	3236	4170	4515	4190	
Perfect Length	750	948	1119	999	
Perfect Average	4.314666667	4.398734177	4.034852547	4.194194194	
Imperfect Total	4000	4646	3528	3344	<b>15518</b>
Imperfect Length	909	901	813	770	<b>3393</b>
Imperfect Average	4.400440044	5.156492786	4.339483395	4.342857143	<b>4.573533746</b>
Perfect2 Total	790	1356	n/a	n/a	
Perfect 2 Length	148	208	n/a	n/a	
Perfect 2 Average	5.337837838	6.519230769	n/a	n/a	
Perfect 1 & 2 Total	4026	5526	n/a	n/a	<b>18257</b>
Perfect 1 & 2 Length	898	1156	n/a	n/a	<b>4172</b>
Perfect 1 & 2 Average [X-AXIS]	4.483296214	4.780276817	4.034852547	4.194194194	<b>4.376078619</b>
<b>Voice</b>					
Superius Total	1588	1516	1013	1514	
Superius Length	400	350	264	407	
Superius Average	3.97	4.331428571	3.837121212	3.71990172	
Mean Total	1570	1716	1295	1420	
Mean Length	379	431	374	340	
Mean Average	4.142480211	3.981438515	3.462566845	4.176470588	
Contratenor Total	2086	2394	2027	1718	
Contratenor Length	491	512	520	414	
Contratenor Average	4.248472505	4.67578125	3.898076923	4.149758454	
Tenor Total	1364	2482	2067	1538	
Tenor Length	240	408	417	325	
Tenor Average	5.683333333	6.083333333	4.956834532	4.732307692	
Bass Total	1418	2026	1641	1344	
Bass Length	297	379	357	283	
Bass Average	4.774410774	5.345646438	4.596638655	4.749116608	



**Table 3.8 – Average Pitch of Voices in Example 3.1**

	<b>TR</b>	<b>M</b>	<b>CT</b>	<b>T</b>	<b>B</b>
<b>Total Pitch</b>	890	833	875	263	288
<b>Total Length</b>	14	14	16	5	6
<b>Average Pitch</b>	63.57	59.5	54.69	52.6	48

The second area of investigation for which computer-aided analysis could potentially be useful is in identifying motifs. Rhythmic and melodic patterns are frequently found within works falling under the broad category of renaissance polyphony. An example of this type of research is Sean Gallagher's study of rhythmic patterns in the music of Ockeghem.⁶⁴ Gallagher limits his study to musical material appearing in sections of *tempus perfectum*, primarily within the works of Ockeghem, but also in the music of Du Fay, Binchois, Busnoys, Regis, Pullois, Fauges, and Caron amongst others. He identifies a number of distinctive rhythmic motifs, most of which span one perfection, and only occur within a local context. The author highlights the work of other scholars who have noted that an obvious metre is quite often imperceptible in Ockeghem's works. One way in which the composer achieves this effect – Gallagher believes – is by the unusual manipulation of common rhythmic motifs. A number of examples of this process are cited, and reasons given for their placement. Gallagher identifies several motifs that appear in much of the music of the composers mentioned above, and simply counts the number of times that they occur within the corpus of works under investigation.

Identifying patterns in this way is incredibly time-consuming, when examining a vast amount of music. Within MIR, two types of application exist in this area: (1) pattern matching – for which the user must input a pattern for

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⁶⁴ Sean Gallagher, 'Syntax and Style: Rhythmic Patterns in the Music of Ockeghem and His Contemporaries', in Vendrix, P., ed. *Johannes Ockeghem: actes du XLe Colloque international d'études humanistes. Tours, 3–8 février 1997*. (Collection Epitome musical, 1). (Klincksieck: Centre d'Etudes Supérieures de la Renaissance. [Paris], 1998) pp 681–705.

which he/she wishes to search; and (2) pattern searching – where the software will scan through the music for recurring material. The second of these methods is more practical when dealing with large amounts of data. Many of the problems encountered when dealing with pitch and rhythmic density – as described above – are also present when identifying motifs. As a result, I was again searching for programs that would analyse MIDI files, or those which could convert MIDI files into an analysable format.

A number of scholars working within the MIR community suggested options that were available to me through the music-ir mailbase.⁶⁵ I was fortunate enough to be contacted by several people offering their own analytical applications. One of these was Michael Schutz, formerly of Northwestern University, Illinois and now of Longwood University, Virginia. He has developed a program called VirtualScore, designed to search for patterns in post-tonal music. VirtualScore converts MIDI files into a piano-roll – commonly found in music sequencers – before identifying recurring rhythmic and melodic patterns.⁶⁶ In order to test modifications made to VirtualScore for the purpose of my own study, small sections of Fayrfax's works were examined. Although the initial results were promising, a number of problems were encountered when analysing large-scale works. These problems occurred for two reasons, related to the length and metre of works: first, VirtualScore would not recognise the relatively unusual time signatures used in the MIDI files (3/1 and 4/1); and second, it had trouble when sections of works were not multiples of 3 or 4 in perfect and imperfect time respectively. After further modifications and numerous experiments – including the use of MIDI files created in Sibelius rather than SCORE, and changing the time signatures to 6/2 and 8/2 –

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⁶⁵ <http://lists.ircam.fr/www/info/music-ir>. I am particularly grateful for the advice and encouragement from J. Stephen Downie (National Centre for Supercomputing Applications, University of Illinois at Urbana-Champaign), Eleanor Selfridge-Field (Stanford University), and Olivier Lartillot (IRCAM).

⁶⁶ Michael R. Schutz, *Computer Aided Analysis of Post-Tonal Music* pp 14–20.

problems still remained, and so unfortunately the project had to be aborted. With more time and further development it seems likely that VirtualScore – and indeed other programs of a similar nature – could provide some interesting results in this area of investigation.

In the paragraph from his research cited above, Schutz states that – amongst other things – computer aided analysis increases the accuracy of musical investigation. From my own experience I feel this is one statement I must challenge. Having completed Chapter 5, and most of Chapter 7 – both of which make considerable use of this type of analysis – I started to investigate the standard deviation of pitch within Fayrfax's works. Whilst doing so a number of unusually high figures appeared in the CT and T voices. Using the methods described in Chapter 7, I calculated that with a standard deviation of 6.92, the range of T could potentially have exceeded 3½ octaves. Even for the best singers of the time this would almost certainly have been impossible, and also very unlikely to occur within five-part vocal polyphony. After several weeks of unsuccessful investigation I eventually discovered that I had not assigned a MIDI channel to one voice in a single line of the score, and this had skewed the results; the correct value was 3.54. Having discovered this, I then had to repeat the rhythmic analysis conducted in Chapter 5 with the updated MIDI file.

This short example shows that it is the accuracy with which the data is entered into the computer application that determines the overall accuracy of the analysis, not the program itself; computers cannot identify human errors themselves. For this reason, considerable care must be taken when conducting this type of analysis.

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**PART 2:**  
ANALYSIS OF THE SACRED WORKS  
OF ROBERT FAYRFAX

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## CHAPTER 4: Selection and Development of Pre-compositional Material

### 4.1 Introduction

Several decisions may be made regarding the structure of a composition before a single note is written down. Within music of the early sixteenth century, these decisions could include the choice of text, number of voices, mensuration, scoring of sections, and use of pre-existing material. In addition, the length of the entire work – or in the case of a mass, of each movement – and the articulation of the work or movement into smaller sections, indicated by a change of mensuration or scoring, could also be decided in the pre-compositional stages.

It has been shown by a number of scholars that in the primary stages of the compositional process several elements were governed by pre-conceived arithmetical plans incorporating proportion and number symbolism. Paul Fugler's analysis of mass settings by Ludford and Fayrfax has demonstrated convincingly that both composers used these techniques.¹ In his thesis, Fugler deals primarily with works by Ludford and just one by Fayrfax, his *Missa 'O quam glorifica'*. This study shows that arithmetical planning and number symbolism were an important element in the composition of works from the early Tudor period and if Fayrfax uses such techniques in one of his masses, then it seems plausible that they were also employed in his other works. Within this chapter I hope further to explore Fayrfax's works from this perspective and consider other aspects that could have been decided upon in the pre-compositional stages.

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¹ Stephen P. Fugler, *Pre-Compositional Mathematical Planning in Mass Settings by Nicholas Ludford and Robert Fayrfax* (Unpubl. PhD thesis: University of Exeter, 1990).

## 4.2 Number Symbolism

The penetration of number consciousness into the Middle Ages was inevitable from the sheer circumstance that there was literally no reservoir of knowledge or inspiration on which this period could draw which was not impregnated with number philosophy.²

All knowledge in the Middle Ages was inherently numerical. University education – both in England and on the continent – was structured around the *quadrivium*, the individual subjects of which – music, arithmetic, geometry and astronomy – were grouped together because they shared mathematical properties. According to Boethius, music was included in the *quadrivium* because it demonstrated the study of proportional relationships.³ Boethius' treatise *Musica* was used as the primary teaching text at Oxford University until the Elizabethan era when the statutes were revised in 1564–5. Within the treatise, Boethius states that a true musician is someone who is able to understand the arithmetical relationships present in a work that cannot be heard in performance.

Historically, the most important practical use for numerology was as a tool for interpreting the Scriptures. This particular method of study can be traced back to the work of St Augustine, although the origins of number symbolism as a process for understanding everyday life was used as far back as the first Babylonian dynasty (2225–1926 BC).⁴ The scholars of ancient Babylon were primarily concerned with numbers relating to astrology. Each lunar month – consisting of 28 days – was divided into 4 weeks of 7 days each. The solar year – taken to be 360 days – was divided into 12 months of 30 days, the 12 signs of

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² Vincent Foster Hopper, *Medieval Number Symbolism: Its Sources, Meaning, and Influence on Thought and Expression* (Dover: New York, 2000) p 89.

³ Calvin M. Bower, *Boethius' The Principles of Music: An Introduction, Translation, and Commentary* (Unpubl. PhD thesis: George Peabody College for Teachers, 1966) p 29.

⁴ Hopper, *Medieval Number Symbolism* p 13. Much of the following information is taken from Hopper's work.

the zodiac being appointed ruler of each month. The numbers 3 and 4 were significant throughout the ancient world and continued to be so in the Middle Ages and beyond. The primary reason for this is that both their sum, 7 and their product, 12, were of significance in Babylonian times: each year of 12 months being divided into 4 seasons, consisting of 3 months. In astrological terms the number 7 was of importance for two reasons at least: (1) it was the number of the planets – Jupiter, Saturn, Venus, Mars, Mercury, the Sun, and the Moon; and (2) it was the number of clearly visible stars which made up the Pleiades – the constellation commonly known as the Plough. The disappearance from view of this constellation from the Babylonians for 40 days provided another number which was to take on many meanings over the centuries: the length of the Babylonian rainy season, the number of days and nights of the Great Flood, and the number of days in Lent. All of these periods represented times of trial and difficulty and for that reason the number 40 became associated with this. The most significant Babylonian numbers – 3, 4, 7, 12, 28, and 40 – became important to the Israelites and frequently occur in the Old Testament.

The Pythagoreans were more interested in the properties of the numbers themselves, rather than the phenomenal significance of them. Odd numbers were considered to be masculine because they could not be divided into two equal halves unlike the feminine even numbers. Therefore 3 represented unity and perfection, equalling the sum of the first odd and even numbers. It was for this reason that in musical composition in subsequent periods triple time became known as *tempus perfectum* and duple time as *tempus imperfectum*. All of the most significant Babylonian numbers became important to the Pythagoreans but for different reasons. Perfect numbers – those which equal the sum of their divisors – were of particular interest; it has already been shown that the second perfect Pythagorean number, 28 (1+2+4+7+14) had been of great significance in earlier times. The number 10 became increasingly

important and was placed at the centre of the *Tetraktys* – an equilateral triangle consisting of the numbers 1–10 arranged in four rows with 10 in the centre – which could be used to solve almost every mathematical problem.

The work of the Pythagoreans was embraced by sects of philosophers living primarily in Alexandria in the early Middle Ages, known as the Gnostics. Gnosticism combined Greek philosophy and eastern science and religion in order to provide a greater understanding of spirituality through the use of numerology. Very little primary source material survives from these sects; the main body of information is found in the work of the early Church Fathers who considered the Gnostics' work to be heretical. Although this work was condemned, early church leaders from around the fourth century such as Augustine of Hippo used many of the same principles in their interpretation of Scripture. Augustine believed that numerology could be used to explain almost all Christian theology through the manipulation of the most important numbers.

Mathematical planning and proportion can be found in almost every art form in the Middle Ages. The most important principles concerning the composition of thirteenth-century architecture, sculpture and painting are contained in 33 parchment leaves which formerly belonged to the distinguished Picard artist Villard de Honnecourt (*fl* c. 1220s–1230s).⁵ Of approximately 250 drawings contained in the notebook, one of the most interesting is the plan for a Cistercian church. Scholars such as de Bruyne have drawn attention to the relationship between the proportions and ratios used in Villard's plan and those of the Pythagorean musical intervals.⁶ In each case, a square bay situated within the side aisles functions as the basic unit and governs all proportions. His plan shows that the ratio between the transept and the total length of the church

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⁵ Paris, Bibl. nat. de France, MS. Fr. 19093.

⁶ The work of de Bruyne is discussed in: Otto von Simson, *The Gothic Cathedral: The Origins of Gothic Architecture & the Medieval Concept of Order* (Routledge & Kegan Paul: London, 1956) p 198.



of 2:3 is the same as an interval of a perfect fifth; the ratio 1:2 – that of an octave – is used a number of times, between the side aisle and the length of the nave, the width and length of the transept, and the interior elevation and length of the church; the ratio between the width and length of the quire is 3:4, or a perfect fourth; the nave and side aisles have a ratio of 4:5 – a major third; and finally, a proportion of 1:1 can be found relating to the liturgical centre of the church – the crossing – which is the same as that of a unison.⁷

The importance of Pythagorean concepts is evident in the construction of Chartres Cathedral. The seven liberal arts were accepted and embraced by the church as a whole as a means to a knowledge of God. Statues of seven important figures – representing each of the liberal arts – are included in the west front of the Cathedral, and in addition to Pythagoras, include Boethius who was to symbolize music.⁸ The use of proportion in the construction of the Cathedral has been investigated by Otto von Simson. He has put forward a theory that the entire structure is based upon a pentagon, a shape which provided the architect with a 'geometrical matrix from which he could develop the most perfect of all proportions, the golden section'.⁹ Although the golden section is used in the floor-plan of the building, von Simson shows that it can be seen most clearly in its elevation.

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⁷ Von Simson, *The Gothic Cathedral* p 199. Specific cases of the relationship between musical and architectural proportions and symbolism have been questioned by a number of scholars. For example, parallels have been drawn between Dufay's motet *Nuper rosarum flores* and the dome of Santa Maria del Fiore in Florence, particularly in the use of the number seven in: Charles W. Warren, 'Brunelleschi's Dome and Dufay's Motet', *MQ* 59 (1973) pp 92–105. These views have been challenged in: Willem Elders, *Symbolic Scores: Studies in the Music of the Renaissance* (Brill: Leiden, 1994) p 12. See also the chapter entitled 'Cathedralism' in: Christopher Page, *Discarding Images: Reflections on Music and Culture in Medieval France* (Clarendon: Oxford, 1993) pp 1–43, particularly his rejection of Ernest Sanders' quasi-architectural analysis of Perotinus' motet *Sederunt principes* in 'The Medieval Motet', Artl *et al* (eds.), *Gattungen der Musik in Einzeldarstellungen: Gedenkschrift Leo Scrade* (Francke: Bern, 1973) pp 497–573. The issue is discussed further in: Craig Wright, 'Dufay's *Nuper Rosarum Flores*, King Solomon's Temple, and the Veneration of the Virgin', *JAMS* 47 (1994) pp 395–441; and Marvin Trachtenberg, 'Architecture and Music Reunited: A New Reading of Dufay's *Nuper Rosarum Flores* and the Cathedral of Florence', *Renaissance Quarterly* 54 (2001) pp 740–75.

⁸ Raymond Klibansky, 'The School of Chartres' in Clagell, Post and Reynolds (ed.), *Twelfth Century Europe and the Foundations of Modern Society* (University of Wisconsin Press: Madison, 1966) p 14.

⁹ Von Simson, *The Gothic Cathedral* p 207–8.

This type of mathematical planning and proportion can also be found in early-modern English architecture. The Triangular Lodge, built in Rushton, Northamptonshire in 1593 for a Roman Catholic recusant, Sir Thomas Tresham, is an example of this. The length of each of the three walls at ground level is 33 feet and 4 inches, creating a combined total of 100 feet.¹⁰ Appropriate quotations show that each wall symbolized one Person of the Trinity. Christopher Butler has suggested that these lengths were chosen so that when added together they represented unity, or God. This type of proportion and symbolism can be found in almost all forms of art throughout the Middle Ages.

#### 4.2.1 Medieval Numerology

Within Medieval number symbolism the most important numbers – in terms of both their significance and frequency of use – were considered to have originated in Scripture. The use of these numbers in Scriptural exegesis became more widespread in the Middle Ages, particularly in the work of the early-Christian scholars such as Augustine and Hugo of St Victor. However, many of the most important numbers were the same as those revered by the Babylonians, Pythagorans and Gnostics. Much of the work concerning numerology in the late Medieval period, was based upon that conducted in earlier periods.

The number 3 had been sacrosanct in pre-Christian times in astrology and geometry, but its use became more widespread in early-Christian times as a means for expressing the doctrine of the Trinity. Other significant numbers were explained as multiples of 3 – for example, the 12 disciples were really the 3 x 4 disciples preaching the Trinity throughout the 4-fold world.¹¹ Other

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¹⁰ Christopher Butler, *Number Symbolism* (Routledge & Kegan Paul: London, 1970) p 109.

¹¹ Hopper, *Medieval Number Symbolism* p 99.

symbolic occurrences of 3 and its multiples in the New Testament include Christ being crucified at the third hour, darkness covering the earth at the sixth hour for three hours, dying at the ninth hour, and rising from the dead after three days. Although it is not mentioned explicitly within Scripture, it was widely believed that the age of Christ at his crucifixion was the juxtaposition of two 3s – 33.

Several numbers occur within both the Old and New Testaments. These include the 12 tribes of Israel and Apostles, and the 40 days of the Great Flood and Jesus' time in the wilderness. These links, amongst others, were noted by scholars and could be explained through a process of numerical manipulation. Almost every number in Christian theology could be explained in this way; Rabanus assigned particular significance to every number from 1 to 144,000 – the final number of the elect in the Book of Revelation.

One of the most common ways of concealing numbers within art was by the use of the Cabala. The technique whereby each letter of the alphabet is assigned a number – known as gematria – forms an integral part of the Jewish Cabala. The origins of gematria can be traced back to the Babylonian era although the extent to which it was used remains unknown. It was certainly used more extensively from about 200 AD. The 22 letters of the Hebrew alphabet were used for numbers 1 to 22, and different combinations were used to represent 23 and above.¹² Gematria was developed by the Greeks who assigned the numbers and letters as shown in Table 4.1.

As the Greek alphabet had only 24 letters, and 27 were needed, the archaic letters *vau*, *koppa*, and *sampi* were used to complete the series. By

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¹² Graham Flegg, *Numbers: Their History and Meaning* (Andre Deutsch: London, 1983) p 61.

**Table 4.1 – The Greek Gematria**

<b>1</b>	α	(alpha)		<b>10</b>	ι	(iota)		<b>100</b>	ρ	(rho)
<b>2</b>	β	(beta)		<b>20</b>	κ	(kappa)		<b>200</b>	σ (ς)	(sigma)
<b>3</b>	γ	(gamma)		<b>30</b>	λ	(lambda)		<b>300</b>	τ	(tau)
<b>4</b>	δ	(delta)		<b>40</b>	μ	(mu)		<b>400</b>	υ	(upsilon)
<b>5</b>	ε	(epsilon)		<b>50</b>	ν	(nu)		<b>500</b>	φ	(phi)
<b>6</b>	Ϝ	(vau)		<b>60</b>	ξ	(xi)		<b>600</b>	χ	(chi)
<b>7</b>	ζ	(zeta)		<b>70</b>	ο	(omicron)		<b>700</b>	ψ	(psi)
<b>8</b>	η	(eta)		<b>80</b>	π	(pi)		<b>800</b>	ω	(omega)
<b>9</b>	θ	(theta)		<b>90</b>	Ϟ	(koppa)		<b>900</b>	λ	(sampi)

using this method a numerical value for every word could be calculated. The most popular words used in this way during Medieval times were Maria (value  $40 + 1 + 100 + 10 + 1 = 152$ ), Jesus (888), and Christos (1480). As the Greek letter τ symbolized the cross, the number 300 was frequently used to represent the crucifixion.

### 4.3 Mathematical Planning in the Works of Fayrfax

The rhythmic patterns found in the tenor parts of fourteenth-century isorhythmic motets – by composers such as Dufay and Dunstaple – were governed by mathematical proportions. In order to structure the plainchant-based *color* which appears three times in the tenor of each his isorhythmic motets, Brian Trowell has shown that Dunstaple used two different diminishing proportions. With only four exceptions – two of which can be explained as early works, and two as teaching aides – Trowell has discovered that the *color* is stated in the proportion

of 9:6:3 in five motets, and 6:4:3 in the remaining four.¹³ This investigation has shown that mathematical planning, proportion and symbolism are inherent in many of Dunstaple's motets and masses. Composers of the early Tudor period in England would almost certainly have known these earlier works, and combined with the mathematically-based educational system at the universities, these compositional techniques would have influenced composers of the period.

A number of problems are encountered when analysing works from an arithmetical perspective, many of which are outlined by Fugler.¹⁴ The first is the fact that a large quantity of numbers can be obtained from a single work through an investigation of the lengths of sections, total amount of semi-choir and *tutti* writing, the overall lengths of individual works, and in the case of masses, of each movement. An even greater quantity is generated when these numbers are combined in various ways through a series of different arithmetical manipulations. In order to overcome this problem Fugler suggests that by attempting to consider all possible numbers that arise from one work, and by giving a thorough account of how the results were obtained and conclusions reached, transparency can be achieved.

Before obtaining any results, a number of factors must be considered. The first – and probably most important – is deciding upon the value which is to be taken as the basic unit. By referring to original sources of works of the early Tudor period, the basic pulse of polyphony was the semibreve and so in view of this, it is taken as the unit of counting.¹⁵ Earlier research in this area – conducted by scholars such as Thomas Messenger – has used a whole bar as

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¹³ Brian Trowell, 'Proportion in the Music of Dunstaple', *PRMA* 105 (1978–79) p 102–3.

¹⁴ Fugler, *Pre-Compositional Mathematical Planning in Mass Settings by Nicholas Ludford and Robert Fayrfax* pp 60–74.

¹⁵ This is in line with more recent editions of the period in which the original note values are retained after a period of twenty or so years, during which the original values were quartered.

the basic unit.¹⁶ As a result, the detailed compositional techniques and arithmetical planning employed have not yet been fully uncovered.

In many works, the exact point at which one section of scoring ends and the subsequent one begins is not easy to define. The melodic lines of each voice do not always reach a cadential point simultaneously. The underlay may provide some clues, as will the presence of a cantus firmus. Fugler has provided convincing evidence to show that in some works the new section begins when the tenor cadences onto the first note of a cantus firmus, even though the text continues to be that of the previous section.

The cadences at the end of each section present another problem, namely in the value which must be given to the final vertical aggregate. After a considerable amount of investigation through a process of informed trial and error, Fugler concludes that this value is not always constant and frequently depends upon specific criteria applied to the work under study. In some instances, a value of three semibreves can be given to final chords in perfect time and four in imperfect time, whereas in others, they are regarded as being *extra tempus* and so are not included at all.

The greatest problem, however, is that not all composers used the same methods of arithmetical planning; indeed one composer may have used different methods from work to work. As a result, it is impossible to define a standard methodology when examining pieces from this period; each work must be considered in its own terms.¹⁷

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¹⁶ Messenger, Thomas 'Texture and Form in the Masses of Fayrfax', *JAMS* 24/2 (Summer 1971) pp 282–5.

¹⁷ Symbolic numbers found in the underlying structure of musical works also create potential problems. In many cases it is difficult to determine whether the composer has deliberately chosen numbers with particular significance, or whether they appear purely by coincidence. By taking into account the sources in which the works appear, and by bearing in mind the context in which the piece was written, some of these problems can be overcome. For a more detailed discussion of this topic see: Willem Elders, *Symbolic Scores: Studies in the Music of the Renaissance* (Brill: Leiden, 1994) p 12.

Roger Bray has investigated arithmetical planning in a number of Fayrfax's works, along with those of other composers. Those of Fayrfax which he has studied in detail are: Missa 'O quam glorifica', Missa 'Tecum principium', and the pair Missa 'Albanus' and *O Maria/Albane deo grata*.¹⁸ Bray's structural analysis investigates the proportion and balance of works, rather than number symbolism. In addition to the factors examined by Fugler, Bray considers the use of coloration and mensural relationships, but most of all the balance between full and reduced sections, and sections which use the cantus firmus and those that are freely composed. In all of his analysis the division between passages 'occurs at the point just before they reach their *finalis*'.¹⁹ This is the case both when the music comes to a complete stop – usually indicated by the insertion of a fermata – but also when it continues without a clear break. In view of this, the *finalis* is considered to be *extra tempus*, and therefore not included in the counting. The practicalities of this are not explained at all, and given the blurring between some sections – as I will show in Chapter 7 – further discussion of these cases is desirable.

The methods of analysis and presentation of results are the same in each case. Bray begins by tabulating the lengths of sections indicated by a change in scoring; this is done in semibreves and breves, as well as in minims in some places. He shows which voices are used, whether the cantus firmus is present, and where the main sectional divisions occur. He then shows the structure of each individual movement, breaking the work down into smaller sections, and indicating which of these use the cantus firmus. His following table examines the overall structure of the work; recording the total length of

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¹⁸ See Roger Bray, 'Music and the Quadrivium in Early Tudor England' *Music & Letters* 76/1 (February 1995) pp 1–18, Roger Bray, 'Editing and Performing *Musica Speculativa*', *English Choral Practice, 1450–1620*, ed. John Morehen (CUP: Cambridge, 1995) pp 47–73, and Roger Bray (ed.), *Robert Fayrfax I: O bone Jesu, EECM 43* (Stainer & Bell: London, 2002). A similar analysis of Taverner Missa 'Gloria tibi trinitas' appears in 'Editing and Performing *Musica Speculativa*'.

¹⁹ Roger Bray, 'Editing and Performing *Musica Speculativa*' p 70.

each movement, the length of each major section – indicated by a change in mensuration – and the distribution of the cantus firmus within each section. Other tables record the same information, counting in minims rather than breves.

The results of Bray's analysis are readily available, and so I do not intend to provide a detailed summary of each here. However, in order to show the types of results that are found, I will briefly explore some parts of his analysis of Missa 'Albanus' and *O Maria deo grata*.²⁰ Within his studies Bray is primarily concerned with the balance between different aspects of Fayrfax's works. Within Missa 'Albanus' he notes that the first two Full/Cantus firmus sections (18+15) balance the third (33). The second passage also balances the last, both consisting of 15 breves. Although the same pattern occurs in the Sanctus, it does not appear in the other two movements, and Bray makes no attempt to explain this. Throughout both the mass and antiphon, the only lengths used for cantus firmus passages are 15, 18, 24 (its multiple 48), and 33. The number 33 occurs several times in both works, the significance of which I have explained above. Bray notes that there is an exact balance in the overall structure of Missa 'Albanus' in that the total number of breves used for Full/Cantus firmus writing equals the total amount of Section 1 music (339 breves). What Bray fails to note – which would further strengthen his analysis – is that the totals of sections 2 and 3 also equal the total amount of writing for Reduced/non-cantus firmus.

Fugler's lengthy study of arithmetical planning has demonstrated that individual works must be approached in considerable detail in a number of different ways. In view of the wide variety of results that can be obtained, the problems encountered when dealing with arithmetical planning and number

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²⁰ Roger Bray, 'Editing and Performing *Musica Speculativa*' pp 66–70. All information in this paragraph is based upon this article.



symbolism – as outlined above – and previous study in this area, I have decided not to pursue this matter any further. Bray's results in particular have revealed that Fayrfax did plan his works in considerable detail from an arithmetical perspective, but it is beyond the scope of this study to give this area of investigation the time that it deserves; instead I will focus my attention on areas that have not been covered in as much detail.

#### 4.4 Use of Pre-existing Material

It has already been noted that in order to receive a degree from the universities of Oxford and Cambridge during the early Tudor period, musicians were required to submit a Mass and antiphon. This pairing of works also existed outside the university environment, and by studying surviving works, it is evident that musical material was often shared between a number of paired or grouped compositions. The most common pairing was a Mass and antiphon, and the most common group included these two forms as well as a Magnificat. Within Fayrfax's surviving works two Mass-Magnificat pairs are extant, although it is possible that these could be part of a larger group, the motets having been lost.

The sharing of musical material can occur in three ways: (1) by the use of the same cantus firmus; (2) by quoting material from one work in another – or others; and (3) by combining both techniques. A survey of grouped works from the early Tudor period shows that more survive by Fayrfax than any other composer.²¹

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²¹ N. J. Sandon, 'Paired and Grouped Works for the Latin Rite by Tudor Composers', *Music Review* 44 (1983) pp 11–12. Other notable pairings by Tudor composers include: Aston's Missa 'Te matrem Dei' (or 'Te Deum') and motet of the same name; Ludford's Missa 'Inclina cor meum' and votive antiphon *Ave Maria ancilla Trinitatis*, and Missa 'Christus resurgens' and Magnificat by the same composer; Raser's Missa 'Christe Jesu' and a lost votive antiphon; Sheppard's Missa *Cantate* and a lost motet; Taverner's Missa *Mater Christi* and antiphon of the same name; and Tye's Missa *Euge bone* and motet *Quaesumus omnipotens*.

**Table 4.2 – Pre-existing Material in Fayrfax’s Works**

WORK 1	WORK 2	WORK 3	TYPE OF PRE-EXISTING MATERIAL
Missa ‘Albanus’	<i>O Maria deo grata</i> [ <i>O Albane deo grata</i> ]		Shared material and cantus firmus
Missa ‘O bone Jesu’	Magnificat ‘O bone Jesu’	<i>O bone Jesu</i>	Shared material
Missa ‘Regali ex progenie’	<i>Magnificat Regale</i>	<i>Gaude flore virginali</i>	Shared material and cantus firmus
Missa ‘O quam glorifica’			Cantus firmus
Missa ‘Tecum principium’			Cantus firmus
Magnificat*	Nunc dimittis*		<i>Not known</i>

*works do not survive but are listed in an inventory from King’s College, Cambridge.

#### 4.4.1 Paraphrase Techniques in Grouped works

A number of problems are encountered when attempting to investigate Fayrfax’s use of paraphrase. The first of these is the surviving state of the works in the three groups – ‘Albanus’, ‘O bone Jesu’, and ‘Regali’. All of the masses are complete, as are the Magnificats, but TR and T of *O Maria deo grata* have been lost, and only one voice of the other two motets survives – M of *O bone Jesu*, and B of *Gaude flore virginali*. This restricts the extent to which detailed comparisons between works within the same group can be made.

A number of scholars have discussed the use of parody and paraphrase in sixteenth-century polyphonic works.²² In her thesis Edahl concentrates specifically on the relationship between Fayrfax’s Missa ‘O bone Jesu’ and the corresponding motet.²³ She identifies three ways in which a model – usually a

²² For example see: Quentin W. Quereau, ‘Sixteenth-Century Parody: An Approach to Analysis’ *JAMS* 31/3 (Autumn 1978) pp 407–41; David Flanagan, ‘Some Aspects of the Sixteenth-Century Parody Mass in England’, *Music Review* 48 (1988).

²³ Ann Signe Edahl, *The Use of Pre-Existing Material in the Early Tudor Mass Cycle* (Unpubl. PhD thesis: University of Wisconsin-Madison, 1993).

motet – is incorporated into a mass by composers: (1) direct quotation; (2) manipulation and development of material; and (3) structural modelling.²⁴ The first of these procedures occurs when music from the model is used with only minor changes to accommodate the text. Each of the masses studied by Edahl manipulate music from the motet in some way or another. This can include extended ornamentation, or the reworking of a motif into a new point of imitation. Structural modelling occurs when a composer transfers music from the model into a similar place in the mass, both with and without adjustments, and can include one or both of the two procedures already mentioned. Most frequently this occurs in the form of a head or tail motif, or the quotation of music from the beginning of a section in the motet to the beginning of a section in the mass.

Although four of the five voices of *O bone Jesu* have been lost, Edahl has identified several places where the surviving M voice is the same in the motet as it is in the mass and Magnificat. A head motif is used at the beginning of each movement in the mass, and as the M is the same in the motet, Edahl assumes that the other voices are also the same. This theory is reinforced by comparing material shared between the Magnificat and mass, and by that used within different movements of the mass. She continues through the work identifying where the M shares the same material. By doing so she is able to work backwards from the mass and reconstruct several sections of the motet. By following this method eight of the fifteen sections within the motet can be reconstructed; these are of varying lengths, from 22 to 58 semibreves. Although the still fragmentary nature of the motet makes detailed investigation impossible, Edahl demonstrates that a large amount of material is shared between motet, mass, and Magnificat in the 'O bone Jesu' group. It seems likely

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²⁴ Ibid. p 124.

that similar procedures occur within 'Albanus' and 'Regali', but again – for the reasons outlined above – further investigation is beyond the scope of this study.

#### 4.4.2 Cantus Firmus Techniques

Many sacred works of the early Tudor period use plainchant.²⁵ Before investigating the way in which plainchant is integrated into a work, a number of questions must be taken into account. The questions can be split into two categories, documentary and critical. First, is it possible to identify the cantus firmus? If so, this may provide clues as to the occasion, or institution for which it was composed. In some cases, the choice of cantus firmus can have a double meaning. A well-known example of this can be found in the middle of the sixteenth century in the form of Thomas Tallis' Missa 'Puer natus est nobis'. The work is based upon a plainchant antiphon for Christmas day and so it is thought to have been composed specifically for this feast. It has been suggested that the mass was composed for Christmas Day 1554 when Philip II of Spain visited England in order to marry the English queen, Mary.²⁶ The title of the chant, and thus of the mass, also alluded to the fact that at the time the Queen was thought to have been pregnant – it was later discovered that this was not true.²⁷

Second, the way in which the plainchant is incorporated into the work can be investigated. Several further questions arise from this area of study: (1) Is the chant used in its entirety, or is it segmented?; (2) Where within the texture is the chant placed, and in which voices?; (3) Does it appear in the full or reduced sections, or both?; (4) How does the chant influence the surrounding voices, in terms of its placement, and the effect to which it governs cadential

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²⁵ For a detailed discussion of cantus firmus treatment in the Eton Choirbook see: Catherine Hocking, *Cantus firmus procedures in the Eton Choirbook* (Unpubl. PhD thesis: University of Cambridge, 1995).

²⁶ Joseph Kerman, 'The Missa Puer natus est by Thomas Tallis', in *Write All These Down: Essays on Music* (University of California Press: Berkeley and Los Angeles, 1994) p 126.

²⁷ *Ibid.*

tones and the resulting counterpoint?; (5) Is the chant altered by inserting or omitting notes, and if so, where does this occur?; (6) Is it possible to explain why this happens – to pace the contrapuntal unfolding, to manipulate the line towards the chosen cadential tone, or to colour the counterpoint?

#### 4.4.2.1 Identification of the Cantus Firmus: Historical and Documentary Evidence

Fayrfax employed the cantus firmus technique of composition in all except one of his six surviving masses.²⁸ The combination of the cantus firmus used – from which each mass takes its name – and other source material, suggests that two may have been composed for particular institutions.

The archives of King's College, Cambridge, record that in 1503–4 Fayrfax's Missa 'Regali ex progenie' was copied into a set of partbooks for use in the chapel.²⁹ Given the documentary evidence and choice of cantus firmus it is possible that the mass might have been written for that institution. The cantus firmus used by Fayrfax in the Missa 'Regali ex progenie' is that for the antiphon at second Vespers on the feast of the Nativity of the Blessed Virgin Mary.

It can be conjectured that in view of Fayrfax's choice of cantus firmus, the Missa 'Sponsus amat sponsam' was composed for a wedding – perhaps of a member of the royal family – but no evidence has come to light in order to prove conclusively that this was the case. There are also two other possibilities. The first is that the work was written for a diplomatic occasion and that the title was used as a metaphor for the close relationship between the parties concerned. Meetings such as these would have taken place frequently within the King's court, and music – particularly that performed by the choir of the Chapel Royal – would most certainly have played a considerable role within it, in

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²⁸ The only mass not to use this compositional technique is Missa 'O bone Jesu'.

²⁹ Frank LI. Harrison, *Music in Medieval Britain* (Routledge and Keegan Paul: London, 1958) pp 164 and 432–3.

**Table 4.3 – Chants Used by Fayrfax in his Masses**

WORK	CANTUS FIRMUS	FEAST	SOURCE
Missa 'Albanus'	<i>Alloquio dulcis vultu</i>	Antiphon at Matins from the Rhymed Office of St Alban	Dunstaple <i>Albanus roseo rutilat</i>
Missa 'O quam glorifica'	<i>O quam glorifica</i>	Hymn in honour of BVM	<i>Liber Wigorniensis</i>
Missa 'Regali ex progenie'	<i>Regali ex progenie</i>	Antiphon at second Vespers of the Nativity of the BVM	<i>Antiphonale Sarisburiense</i>
Missa 'Sponsus amat sponsam'	<i>Sponsus amat sponsam</i>	Office for St Catherine of Alexandria	<i>Antiphonale Sarisburiense</i>
Missa 'Tecum principium'	<i>Tecum principium</i>	Antiphon at second Vespers on Christmas Day, Epiphany and their octaves	<i>Antiphonale Sarisburiense</i>

order to display both the King's wealth and the skill of his musicians.³⁰ The second is that the plainchant was chosen for its liturgical significance; for example as a link within the celebration of the mass between the music and the story in St John's Gospel of the wedding at Cana in Galilee. It is possible that the mass was written at the request of a cleric who intended to preach about this story. Alternatively it could have been chosen to demonstrate the love of God 'the bridegroom' for his church 'the bride'.

Missa 'Albanus' seems to have been written for St Albans Abbey – or for a group that met within it – with which the composer was connected.³¹ Within this mass Fayrfax does not use a long cantus firmus as in his other masses of this type; instead he takes a short nine-note motif. The motif is subjected to different changes: the rhythmic values are altered; and it is stated in its prime form, in retrograde and in retrograde inversion. The chant is thought to have

³⁰ The musical exchanges at the Field of the Cloth of Gold between the French and English Chapels Royal – at which Fayrfax was present – are a later example of this.

³¹ See pp 28–31 for a detailed discussion.

been the opening phrase of the fifth line of an antiphon in honour of St Alban entitled *Alloquio dulicis*. This was used for the second nocturn in the metrical office of St Alban. Unfortunately the only extant source of the office contains only the words of the antiphon and not the chant. However, the original chant does survive as the tenor of Dunstaple's isorhythmic motet *Albanus roseo rutilat*. Margaret Bent has suggested that Dunstaple may have been connected with the Benedictine Abbey in St Albans, since he wrote the motet *Albanus roseo rutilat* in honour of St Alban and the text of the work – based upon an older poem – was possibly written by John of Wheathampton, abbot of St Albans between 1390 and 1401.³² Whether Dunstaple composed the work during an extended period in the employment of the Abbey or for a specific occasion when he visited St Albans is unknown.³³ It is possible that Dunstaple's work was still being sung when Fayrfax became associated with the institution and it was this that inspired him to compose *O Albane deo grata* and Missa 'Albanus'. It is also possible that the motet was commissioned by the Abbey in order to replace Dunstaple's motet, which by then may have been considered dated in comparison with the music being composed in England at the time.

The chants used by Fayrfax in the two remaining cantus firmus masses are set for specific offices or festivals. *Tecum principium* is the first antiphon at second Vespers on Christmas and Epiphany and their octaves, and *O quam glorifica* is a hymn for first Vespers on the feast of the Assumption. In view of this, it seems likely that these works were composed for these particular occasions.

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³² Margaret Bent, *Dunstaple* (OUP: Oxford, 1981) p 4.

³³ D. R. Howlett has suggested that it was written for the visit of the Duke of Bedford – in whose household Dunstaple worked – to St Albans in 1426. See: D. R. Howlett, 'A Possible Date for a Dunstable Motet', *Music Review* 36 (1975) p 84.

#### 4.4.2.2 Analysis of Cantus Firmus Use

The chants used by Fayrfax as the basis for his cantus firmus masses are employed in various ways. A number of similarities can be seen in the techniques used, particularly regarding the way in which the chants are segmented and used at different places within the work. Although the chant is used predominantly in T in the tutti sections, there are a number of instances where this is not the case. This section examines in detail the way in which Fayrfax employs the pre-existing chant melody, not only within his masses, but all of his works.

The manipulation of the cantus firmus in Missa 'O quam glorifica' is probably Fayrfax's simplest. The chant is split into three sections (*Ap*, *Aq*, *Ar*) as shown in Example 4.1. As can be seen from the example, the three sections are not equal in length; *Ap* consists of 16 notes, *Aq* of 15 notes, and *Ar* of 34 notes. The chant appears in T in all four movements of the work within each tutti section.

Close examination of the chant within the mass reveals that the uneven segmentation is not as unusual as it first appears. Three tutti sections are employed within each movement – two in the first half and one in the second. Table 4.4 shows that *Ap* and *Aq* appear in the tutti sections in the first half, and *Ar* in the second. As a result, the chant is split evenly between perfect and imperfect sections.

Within the remaining sources, the notes of the chant are split in order to accommodate the text. Notes are also repeated for no apparent reason, but it is difficult to explore this further given the unusual situation surrounding the work, as discussed earlier.³⁴ The progress of the chant is punctuated mid-phrase in places by the insertion of rests. These occur at different points in each

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³⁴ See pp 37–43 for further details.



**Table 4.4 – Segmentation and Placement of Chant in Tuttis of Missa ‘O quam glorifica’**

MENSURATION	INCIPIIT				CHANT SECTION
	GLORIA	CREDO	SANCTUS	AGNUS	
○	<i>Gratias agimus...</i>	<i>Et in unum...</i>	<i>Domine deus...</i>	<i>miserere nobis (1)</i>	<i>Ap</i>
	<i>Domine Deus...</i>	<i>Qui propter nos...</i>	<i>Hosanna...(1)</i>	<i>miserere nobis (2)</i>	<i>Aq</i>
⊂	<i>qui sedes...</i>	<i>et resurrexit...</i>	<i>Hosanna...(2)</i>	<i>qui tollis...dona...</i>	<i>Ar</i>

movement and vary quite considerably in length. As a result, it seems likely that they are inserted because the tone of the chant does not fit with the surrounding voices in these places.

Within each statement of *Aq*  $e^0$  is inserted between notes 29 and 30, and within *Ar* the same note is inserted between notes 61 and 62. The fact that this occurs in every statement suggests that Fayrfax may have been using a variant source that included these notes, rather than any of those sources that now survive. These notes therefore appear with open heads in Example 4.1.

The transition between semichoir and tutti sections is of interest, particularly the interaction between chant and cadential tone. In Missa ‘O quam glorifica’ *T* is frequently employed in the semi-choir section before the tutti in which the cantus firmus is present. On most occasions the first note of the chant acts as the cadential tone of the previous section. In the majority of cases in the other cantus firmus masses *T* is not used in the preceding section. When it is used, there is a usually clear distinction between the freely-composed material and the chant, either by the presence of a rest, or by the semi-choir section coming to a clear end before the tutti begins. In Missa ‘O quam glorifica’ the chant is not only influencing the cadential tone itself, but also the path of the other voices towards the end of the reduced section.

Example 4.1 – Segmentation of *O quam glorifica* Plainchant: Missa ‘O quam glorifica’

The image shows a musical score for a plainchant. It consists of two staves of music in a single treble clef. The first staff is divided into three segments by brackets, each with a dynamic marking above it: *Ap*, *Aq*, and *Ar*. The notes are mostly quarter notes with stems pointing down, except for a few half notes. The lyrics are written below the notes, with hyphens indicating syllables that span multiple notes. The second staff continues the melody with similar note values and lyrics.

*Ap* *Aq* *Ar*

O quam glo - ri - fi - ca lu - ce cho - ru - scas stir - pus da - vi - di - ce re - gi - na ___ pro - les sub - li - mis re - si - dens ___ vir - go ma - ri - - a

sup - - ra co - li - - ge - nas ___ o - the ris ___ om - nes.

The chant also occurs in two of the reduced sections. The first of these occurs at the beginning of the ○ section of the Credo. Here section *Ap* of the chant is stated whole in M, in the middle of the 3-part texture. Whilst the notes are shorter than when the chant is placed in T, they are still longer than those in TR and CT which are also used in this section. It is possible that the chant influences CT with the words 'ex *maria*'. Here the final four pitches of *Ap* – which have just been stated in T – are used. This short melodic motif occurs frequently throughout Fayrfax's works, so it could be argued that the relationship with the chant is coincidental. However, the fact that it occurs in such close proximity to the end of the chant, and that Fayrfax uses similar techniques in other works suggests that the material is related. The same section of chant (*Ap*) also appears in the second half of the Gloria. Rather than being stated complete in one voice, the first six notes appear in CT before being passed to M which completes the section.

A source for the *Tecum principium* chant can be found in the *Sarum Antiphonarium*. Fayrfax uses the chant (as shown in Example 4.2) in two different ways: (1) as a head motif in T at the beginning of each movement; and (2) as a structural device at various points throughout the rest of the mass. The function of the chant changes depending upon the way in which it is integrated into the work. As a head motif it is an audible anticipation of the plainchant proper. Both the singers and those closely involved in the liturgical performance would almost certainly have been familiar with the chant. By placing it in the reduced texture – only M, T and CT are singing – the chant would have been easily heard. Within the full sections of the mass the chant is placed in the middle of the texture in T where it is used to structure these sections.

**Example 4.2 – Segmentation of *Tecum principium* Plainchant: Missa ‘Tecum principium’**

The image shows a single line of musical notation on a five-line staff, starting with a treble clef. The melody consists of a series of eighth notes. The lyrics are written below the staff, with hyphens indicating syllables that span multiple notes. Two horizontal brackets are placed above the staff to segment the melody. The first bracket, labeled 'Bx', covers the first 14 notes. The second bracket, labeled 'By', covers the remaining 14 notes. The lyrics are: Te-cum prin-ci - pi-um in di - - e vir - tu - tis__ tu - ae in splen do - ri - bus san - cto - rum et in ____ te-ro an- te lu - ci - fe - rum__ ge - nu - i te



The head motif – shown in Example 4.3 – consists of the first eight pitches of the chant, corresponding with the words ‘Tecum principium’. In the Credo and Sanctus the head motif is stated without rhythmic or melodic alteration. In the Credo the whole chant is then stated, whilst in the other movements T continues with freely composed material.

**Example 4.3 – Head Motif: Missa ‘Tecum principium’, Sanctus**

A small alteration of the head motif cantus firmus does occur in the Gloria and Agnus Dei. In the Agnus Dei the final  $a^0$  of the motif is omitted and replaced by  $d^1$ . This is in order to accommodate both the melodic properties of the chant and the contrapuntal principles driving the other voices. At this point in each movement the other two voices – M and CT – are in strict imitation. In the first three movements the imitation in these voices ends on the first beat of the sixth note of the chant in T at the latest. In the Agnus Dei, however, the imitative phrase in M continues for a further three semibreves. In order to continue in this fashion the cantus firmus could have been altered, as  $a^0$  in T would have clashed with  $b^{b1}$  in M. It is possible that Fayrfax could have stopped the imitation earlier – as in the other movements – but for some reason he has chosen not to do so.

This alteration almost certainly affects the following melodic line in T. Each line has a rising and falling contour, the peak of which usually represents the climax of the phrase. Fayrfax only rarely changes the tessitura of a voice within a semi-choir section; each phrase is carefully constructed using compact intervals. The alteration of the chant at the start of the Agnus Dei results in the melodic line in T remaining at the top of its range – and above CT. The entrance of T in a high tessitura highlights the entrance of the new phrase which then falls towards the bottom of the phrase.

Suggesting a reason for the change at the opening of the Gloria is more problematic. Here the sixth note of the chant is shortened to two semibreves and the final  $a^0$  is omitted completely – as it is in the Agnus Dei. By this point the imitation has finished and so the voices have free counterpoint. One possibility is that the chant was altered in order to prepare for the following cadence. The placement of the cadence may have been carefully planned to take account of the nature of the text and the cadential tone. If the movement in T to cadence on  $d^0$  was decided beforehand then the pitches in the other voices may have been as well, including the movement in M to  $a^1$ . If the chant had been continued in the same manner as in the Sanctus the same pitch ( $a^1$ ) would have been sounded for seven consecutive semibreve beats. Fayrfax may have changed the chant in order to vary the pitches of the voices in the progression to the pre-determined cadential tone.

Composing in strict imitation whilst the cantus chant is in the lowest voice severely restricts the contrapuntal possibilities. Fayrfax has set himself a major challenge by beginning all four movements in the same way. The decision to begin each movement with this section of the chant must have been made in the pre-compositional stages in order that the chant could be easily identified. As a result, a minor adjustment of the pre-existing material would have been necessary in order to continue with the imitation in the upper-most voices. If this

is the case then it suggests that the way in which the chant is continued was not fixed in any way during the pre-compositional stages. It seems likely that the position was decided upon but not necessarily the way in which it was used.

This investigation suggests that the Credo and Sanctus were the first movements to be composed as no alteration of the head motif occurs within them. This also corresponds with the composer's setting of the text. In order to ensure that each movement was of a similar length – as many are within this period – the movements with the greatest and fewest words would probably have been planned first.

In terms of the composer's use of the cantus firmus as a structural device in the rest of the work, the Gloria and Credo are handled in one way, and the Sanctus and Agnus Dei in another.

**Table 4.5 – Cantus Firmus Treatment in Missa 'Tecum principium'**

	GLORIA 1	GLORIA 2	CREDO	SANCTUS	AGNUS DEI
○			<i>B_x</i>		
	<i>B</i>	<i>B</i>	<i>B</i>	<i>B_x</i>	<i>B_x</i>
	<i>B₊</i>	<i>B₊</i>	<i>B</i>	<i>B_y</i>	<i>B_y</i>
⊂	<i>B₊</i>		<i>B₊</i>	<i>B_x</i>	
	<i>B₊</i>	<i>B₊</i>	<i>B₊</i>	<i>B_{y₊}</i>	<i>B</i>

In all of the movements the cantus firmus appears predominantly in T; only fragments of the chant occur in other voice parts. The Agnus Dei is the simplest movement of the mass, and most prototypical for the period; for this reason it will be examined first. The complete cantus firmus appears twice in the movement – once in each half – indicated by a change of mensuration. Within



each half, the cantus firmus appears only in the fully scored sections – apart from the opening head motif with which each movement begins. In the first part of the movement the chant is segmented into two halves and one half is used in each of the two tutti sections, whereas the whole unsegmented chant is used in the second half. This segmentation can also be found in the Sanctus, where it only appears in this form. The second half of the chant is present in the ‘Hosannas’ of the Sanctus and Benedictus, which occur at the end of the perfect and imperfect sections respectively, and both of which employ all of the voices. The first part of the chant occurs earlier in each section. The Credo contains the greatest number of statements of the chant. The first half is heard at the beginning of the movement and is followed by four further complete statements. As has already been stated, the Gloria of the Missa ‘Tecum principium’ survives in two different versions. The first half of the movement and the last tutti are the same in both cases but the two semi-choir sections at the start of the half in imperfect time are different. Fayrfax’s use of the cantus firmus differs in each version. In the first version, the chant appears in T in its entirety, but with a cadential augmentation, whereas in the second it is not used at all.

Every statement of the chant within the mass is altered in some way by Fayrfax. This adjustment occurs in three ways: (1) rhythmic values are altered through a process of augmentation or diminution; (2) rests are inserted; and (3) pitches are added and subtracted. Fayrfax inserts notes in two different ways; as either single notes within the middle of the chant, or at the end – for example to a cadential point – where T finishes on the same note as the chant. The cadential extension occurs only at the end of movements in the Missa ‘Tecum principium’, more specifically at the final cadences of the Credo and Sanctus. On only one occasion – at the beginning of the Credo – does Fayrfax add a note to the pre-existing cantus firmus, and within the work as a whole, no notes are omitted. The chant is augmented rhythmically for contrapuntal reasons.

At certain points in the mass, Fayrfax anticipates the entrance of the cantus firmus by using the first three notes of the chant in imitation in voices other than T. This technique of pre-imitation can be found more widely in later periods, particularly in consort songs.³⁵ An example of this can be seen in the Gloria in CT with the words 'gratias agimus tibi', shortly before the first full statement of the chant in T.

A more prominent example occurs in the same movement of the mass immediately before the final tutti, and can be seen in Example 4.4. Here M and TR anticipate T with the same three-note motif, taken from the beginning of the chant. The entries are not evenly spaced; TR enters after all three notes have been stated, whilst T enters after the first two notes. This creates an overlap of the cantus firmus between the two voices. The reasoning for this is probably the same as that used in the head-motif, as an audible anticipation of the chant in

**Example 4.4 – Pre-imitation: Missa 'Tecum principium', Gloria**

³⁵ See Mike Smith, "Whom Music's lore delighteth": words-and-music in Byrd's Ye sacred Muses' *EM* 21/3 (August 2003) p 432. The technique is also employed in continental works; for example, the very opening of the 'Introitus' in Victoria's Missa *Pro Defunctis* and at the words 'Christe eleison' within the same movement. In both cases the first three notes of the cantus firmus are placed in T before it is heard in full in TR. A statement of the cantus firmus is heard in full in TR at the beginning of the 'Kyrie' in Josquin's Missa 'Hercules Dux Ferrariae' before appearing in T. The same process occurs in the third section of the 'Agnus Dei'.

T. In the middle of the texture the chant cannot be heard clearly, but by using the first few notes of the chant in imitation, Fayrfax highlights its entrance. The entries do not need to be evenly spaced on this occasion; once the first three notes of the chant have been stated, other entries will be more obvious to the listener as they would be expected. There may also be a psychological reason for T entering before TR has completed the opening of the chant. When listening to the work, sixteenth-century listeners – who were much more familiar with this repertoire than we are now – would almost certainly have expected T to enter after TR had stated the chant, as M does beforehand. By bringing T in a beat early, Fayrfax creates an unexpected effect.

For most of the work the cantus firmus is placed in T in the full sections. As a result, the chant is in the middle of the texture, enabling Fayrfax to compose more freely around it. There are, however, instances where it appears in reduced sections. For the most part, it continues to be placed in the middle of the three-part texture in these sections. On one occasion – at the words ‘qui venit’ in the Sanctus – T is the lowest voice, and so appears at the bottom of the texture.³⁶ Fayrfax does not choose to shorten the rhythmic values of the cantus firmus at this point in order to blend in with the other voices – they are, if anything, longer than in many other places. On this occasion Fayrfax creates a series of pedals for all the vertical configurations around it. As a result, the type of melodic writing in the upper voices is considerably restricted. Fayrfax overcomes this melodic restriction by repeating the same motif four times in M

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³⁶ Whilst the use of the cantus firmus at the extremes of the texture is unusual within the early Tudor repertoire, it is not confined solely to the works of Fayrfax. For example, at the words ‘Agnus Dei, qui tollis peccata mundi: miserere nobis’ (2) in the Agnus Dei of his Missa ‘Praise Him Praiseworthy’ Alwood places the five-note cantus firmus motif in M, which here is the highest voice of the four-part section. Placing the cantus firmus in the upper-most part seems to be used more commonly in continental works; the settings of the Missa *Pro Defunctis* by Victoria (a 4) and Cardoso (a 6) employ this technique throughout. Interesting comparisons can be made with these settings and that of the Missa *Pro Defunctis* (a 5) by Lassus where the same cantus firmus is in T.

**Example 4.5(a) – Motivic Writing Around the Cantus Firmus: Missa ‘Tecum principium’**

155

Musical score for Example 4.5(a) showing five staves. The first staff is a treble clef with a key signature of one flat and a common time signature. The second staff is a treble clef with a key signature of one flat and a common time signature, featuring a melodic line with two 'm1' annotations. The third staff is a treble clef with a key signature of one flat and a common time signature, featuring a melodic line with two 'm1' annotations. The fourth staff is a bass clef with a key signature of one flat and a common time signature, featuring a melodic line with a slur. The fifth staff is a bass clef with a key signature of one flat and a common time signature.

**Example 4.5(b) – Motivic Writing Around Common Tones: *Salve regina***

97

Musical score for Example 4.5(b) showing five staves. The first staff is a treble clef with a key signature of one flat and a common time signature. The second staff is a treble clef with a key signature of one flat and a common time signature. The third staff is a treble clef with a key signature of one flat and a common time signature, featuring a melodic line with a slur and an 'm2' annotation. The fourth staff is a treble clef with a key signature of one flat and a common time signature, featuring a melodic line with a slur and an 'm1' annotation. The fifth staff is a bass clef with a key signature of one flat and a common time signature, featuring a melodic line with a slur and an 'm1' annotation.

101

Musical score for Example 4.5(b) showing five staves. The first staff is a treble clef with a key signature of one flat and a common time signature. The second staff is a treble clef with a key signature of one flat and a common time signature. The third staff is a treble clef with a key signature of one flat and a common time signature, featuring a melodic line with a slur and 'm2' and 'm3' annotations. The fourth staff is a treble clef with a key signature of one flat and a common time signature, featuring a melodic line with a slur and an 'm3' annotation. The fifth staff is a bass clef with a key signature of one flat and a common time signature, featuring a melodic line with a slur and an 'm2' annotation. There are 'e:' annotations at the end of the fourth and fifth staves.

and CT. A similar type of compositional technique can also be found in *Salve regina* at the trio beginning 'Virgo mater ecclesie' where a series of motifs is heard around common tones in every voice. In *Salve regina* the statement of long common tones is a feature decided upon by the composer, rather than as the result of including any pre-existing material. The way in which motif *M1* is used in Missa 'Tecum principium' is most similar to the manipulation of motif *m2* in *Salve regina* – see Example 4.5. On both occasions the motif is heard more than twice and appears both above and below the common tone. The function of the motifs is to disguise the slow moving contrapuntal rate of change. In Missa 'Tecum principium' the motif outlines a triad of f, a, c: in *Salve regina*, *m1* outlines the same notes; *m2* outlines c, e, g; and *m3* also outlines f, a, c.³⁷

When integrating a portion of pre-existing material into a work, the composer had to consider at least five parameters: (1) the choice of cantus firmus – or section of it; (2) the voice in which it is to be placed; (3) how many other voices are used in addition to the cantus firmus-carrying voice; (4) the surrounding free counterpoint; and (5) the text. Within Missa 'Tecum principium' it is possible to examine two sections where four of these five parameters are the same. The 'Hosannas' of the Sanctus and Benedictus use the same section of the cantus firmus (*By*) in T, and are both scored for all five voices; the only variables are the way in which the cantus firmus is used, the free counterpoint in the other voices, and in this case, the mensuration. However, the way in which the cantus firmus is used, and the way in which it relates to the other voices is also different. The 'Hosanna' from the Benedictus, which concludes the movement – the Sanctus and Benedictus always being considered as one liturgical item at this time – is the simpler of the two. Here the pace of the 'free' counterpoint in the voices other than T seems to be governed by the cantus firmus. The chant is stated in long note values, which change most frequently

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³⁷ The use of motivic treatment will be investigated in greater detail in Chapter 8.

on every other semibreve beat. The same is true of the musical material in CT and B. In view of this, the chordal rate of change is particularly slow, changing only on every other beat, with the cantus firmus. The quicker rhythmic values in TR and M rarely alter the successive vertical aggregates, they are simply decorating the lower voices. This is in contrast with much music of this period in which – during tutti sections – TR and CT are the most florid, followed by M, B and T respectively. This suggests that the lowest three voices in the ‘Hosanna’ of the Benedictus were composed first and the top two added afterwards in order to add increased rhythmic density. The rhythmic intensity in CT does increase at the end of the section, most probably in order to create a sense of forward motion towards the final cadence. The cantus firmus remains predominantly unaltered in the Benedictus, possibly in order to give a sense of completeness at the end of the movement. One minor adjustment of the chant occurs at the end where a cadential extension is added.

The use of the chant in the ‘Hosanna’ of the Sanctus is very different. Here the cantus firmus is driven by the contrapuntal principles governing the other voices. The primary device used by Fayrfax within this section is a melodic motif – *m1* in Example 4.6(a). This is stated five times and appears in the top three voices. The rhythmic value of each note of the cantus firmus is much shorter than in the Benedictus. As a result, there is a much faster contrapuntal rate of change, most probably in order to take account of the motif. One motif is also heard twice in the ‘Hosanna’ of the Benedictus. However, when this occurs the note in the cantus firmus is lengthened and does not change whilst the motif is stated. Although the pitches of the chant remain unaltered in the Sanctus, Fayrfax inserts a number of rests throughout the section. This occurs in order to cadence onto the required pitches. There is also a clear interaction between the cantus firmus-carrying voice and the surrounding voices when the first rests are inserted. Usually  $g^0$  in T before the

Example 4.6(a) – ‘Hosanna’: Missa ‘Tecum principium’, Sanctus

The image displays a musical score for the 'Hosanna' section of a Mass, specifically the 'Tecum principium' from the Sanctus. The score is organized into three systems of staves, each beginning with a measure number: 107, 113, and 118. Each system consists of five staves: a vocal line (likely soprano or alto) and four piano accompaniment staves (treble and bass clefs). The lyrics are written below the vocal line. The first system (measures 107-112) features the word 'san' repeated. The second system (measures 113-117) features the words 'na in na in ex'. The third system (measures 118-122) features the words 'ex cel in ex cel'. The score includes various musical notations such as notes, rests, and dynamic markings like 'm1' (mezzo-forte) and 'mf' (mezzo-forte). Arrows point to specific notes in the piano accompaniment staves, likely indicating performance instructions or editorial changes.

Musical score for five staves. The first staff is in treble clef with a key signature of one flat. The second and third staves are in treble clef. The fourth and fifth staves are in bass clef. The lyrics 'sis.' are written below the first, second, third, and fourth staves. The lyrics 'cel' are written below the second and fifth staves. A line connects the first 'cel' to the first staff. The score consists of five measures, ending with a double bar line and repeat dots.



Example 4.6(b) – ‘Hosanna’: Missa ‘Tecum principium’, Benedictus

188

O - - - - - san - - - - - na

O - - - - - san - - - - - na

O - - - - - san - - - - - na

O - - - - - san - - - - - na in

O - - - - - san - - - - -

194

ml

in - - - - - ex - - - - -

in - - - - - ex - - - - -

in - - - - - ex - - - - -

ex - - - - -

na in ex - - - - -

199

ml

cel - - - - -

cel - - - - -

cel - - - - -

cel - - - - -

cel - - - - -

204

The image shows a musical score for five voices, numbered 204. The score is written on five staves. The top staff is Soprano, the second is Alto, the third is Tenor, the fourth is Bass, and the fifth is another Bass. The Tenor part has a sharp sign above a note in the third measure. The text 'sis.' is written below the notes in each voice part. The score ends with a double bar line and repeat dots.

rest in bars 118-9 would be followed  $f^0$ . The next note in the chant is  $a^0$ , and so B provides the resolution of T by providing  $f^0$ . A similar example occurs when the chant re-enters where the melodic movement in the CT should culminate in  $a^0$ . Fayrfax chooses to bring T back here in order to provide the resolution. This type of linear motion also influences the other voices, as shown between TR and M – indicated by an arrow towards the end of Example 4.6(a).

The segmentation of the chant within the Missa ‘Regali ex progenie’ occurs in three different ways, as shown in Example 4.7. In the Sanctus and Agnus Dei it is split into three segments ( $Cp$ ,  $Cq$  and  $Cr$ ); in the first half of the Gloria it is split into two ( $Cx$  and  $Cy$ ), and in the second half of the Gloria and Credo it is used complete. Throughout each movement the chant is used at the same pitch as it appears in the Sarum *Antiphonale*, the source that bears closest resemblance to the version of the chant used by Fayrfax. The presence of the chant becomes immediately apparent in the Lambeth choirbook; it is mostly stated in long notes in T, with the same repetitions as appear in the *Antiphonale*.³⁸ On all but one occasion the chant is stated in T.

³⁸ This creates problems when editing the work as note values must be split in order to accommodate the whole text of the mass.

**Example 4.7 – Segmentation of *Regali ex progenie* Plainchant: Missa ‘Regali ex progenie’**

The image shows a single line of musical notation on a five-line staff with a treble clef. The melody consists of a series of eighth notes, with some notes beamed together. The lyrics are written below the staff, with hyphens indicating syllables that span across multiple notes. Above the staff, four horizontal brackets indicate segments:  $C_p$  covers the first 12 notes,  $C_x$  covers the first 18 notes,  $C_q$  covers the first 24 notes, and  $C_r$  covers the entire 24-note phrase.

Re - ga - li ex pro - ge - ni - e Ma - ri - a ex - or - - ta re - ful - get cu - ius pre - ci - bus nos _____ ad - ju - va - ri men - te _____ et - spi - ri - tu de - vo - tis - si - me _____ po - sci - mus

The chant is stated in its entirety three times in the Credo, once in perfect time and twice in imperfect time. At its first occurrence in the second half of the movement the first few notes are stated in CT part before moving back into T. The complete statement occurs at the same pitch; only a semibreve beat divides them. The chant appears twice in the Gloria, segmented in the first half and whole in the second. Here the chant is split in half, the first section ending after the word 'precibus' in the *Antiphonale*. This segmentation must have been implemented by Fayrfax for musical rather than textual reasons as the sense of the words is broken up in the process. Further segmentation occurs in the Sanctus and Agnus Dei. Within these movement the chant is split into three, but at more natural points in the text.

**Table 4.6 – Cantus firmus treatment: Missa 'Regali ex progenie'**

	GLORIA	CREDO	SANCTUS	AGNUS DEI
○	Cx	C	Cp	Cp-F ^y
	Cy [^]		Cq	Cq+
C		C		
	C+	C	Cr	Cr [^]

The first time that the cantus firmus appears in the Agnus Dei the first few notes of the chant are omitted. Only a small number of insertions and omissions occur in the cantus firmus throughout the mass. The greatest number appear in the Agnus Dei, where every segment is altered in some way. The first – as has already been mentioned – omits the first few notes, the second is augmented towards the cadence, and the third has several notes inserted at the end. This type of treatment also occurs in the Gloria. Here g⁰ is inserted between the

penultimate and final notes in the second half of the first statement at the end of the section in perfect time. A cadential augmentation is used at the end of the movement.

The cantus firmus is used solely in the tutti sections in the Gloria, Sanctus and Agnus Dei. Within the Credo it appears in the reduced sections, but in two different ways. The first of these occurs in the second of the three statements where it can be heard in its entirety in one semi-choir section. The semi-choir section is scored for the lowest three voices, and therefore the chant continues to be placed in the middle of the texture. The second is found at the end of the movement. Here the cantus firmus almost acts as a type of pivot, around which the others parts revolve. It begins as a full section, continues throughout the following semi-choir section, and concludes in the final tutti. Again the chant placement is in the middle of the texture, the semi-choir section being scored for the four lower voices.

The rhythmic values given to the chant in the fully scored sections and those that are reduced vary considerably. For the most part, the chant appears in the full sections and is stated in long notes. As a result it is clearly distinguishable from the freely composed material in the other voices. Within the reduced sections – and in particular the trio in which it features – Fayrfax attempts to integrate the chant more fully into the texture by shortening the lengths of the notes.

As has already been mentioned, Missa 'Albanus' uses a nine-note motif as a cantus firmus, shown in Example 4.8. The motif appears 40 times in the mass – five times in the Gloria, seven in the Credo, nine in the Sanctus and 19 in the Agnus Dei. As the work progresses the manipulation of the motif becomes more complex and it occurs with increasing frequency.

**Example 4.8 – ‘Albanus’ Motif: Missa ‘Albanus’**



The Gloria is the simplest movement using only  $P-4$  and  $P-4^r$  versions of the motif – apart from the single occurrence of  $P-0$  in the head motif. Within this movement – and the mass as a whole – the chant appears solely in the tutti sections in the T and at no point are notes added or omitted, only the lengths and repetition of notes are subjected to change. The Credo, Sanctus and Agnus Dei use the same structural device, a series of rising and falling patterns of the ‘Albanus’ motif.

Table 4.7 clearly shows that the second group of the motif in the Credo and Sanctus is a retrograde of the first. Although this is the case in terms of the pitches used, the lengths of the notes are not a mirror image. The Agnus Dei is constructed in a slightly different way. Here the second group is not a mirror image of the first in the same way as the other movements, but an inversion. Fayrfax does follow a similar pattern of rising and falling motifs, but in this movement – although the starting pitch is the same – a rising rather than falling

**Table 4.7 – Pitches of ‘Albanus’ Motif in Tenor: Missa ‘Albanus’**

	CREDO	SANCTUS	AGNUS DEI
○	$l-4$ $l-3$ $l-2$	$P-4$ $P-3$ $P-2$	$P-4^r$ $P-5^r$ $P-6^r$
		$P-2^r$ $P-3^r$ $P-4^r$	$l-6^r$ $l-5^r$ $l-4^r$
○	$l-2^r$ $l-3^r$ $l-4^r$	$l-4^r$ $l-3^r$ $l-2^r$	$l-4$ $l-3$ $l-2$

pattern follows first. The contour of the cantus firmus in the Agnus Dei is therefore an inversion of its contour in the other two movements. In the Credo the first group is placed in the section of perfect time, and the second in imperfect time. In the Sanctus and Agnus Dei both appear in perfect time, and a further group is then heard in imperfect time. Within each group, the different variations of the motif follow on without any break, rest, or freely composed material. Sections of the text do not coincide with new statements of the chant; a considerable amount of overlapping occurs.

Both the beginning and end of individual statements or groups of the cantus firmus usually coincide with a change in text and texture. On one occasion, however, this is not as clear cut. This occurs in the Gloria in the first tutti of the section in imperfect time. Here the change in texture coincides with the entrance of the cantus firmus which occurs two semibreves before the next section of text (*Qui sedes ad dexteram...*). Fayrfax begins the tutti on the final syllable of the previous section (*-stram*) in a way which does not appear anywhere else in the work. A similar effect is found at the end of the same section where the chant continues for two semibreves into the following semi-choir section.

The final section of the Agnus Dei deserves particular attention. Here the 'Albanus' motif first appears – as *P-4* – in T, before occurring in all other voices. M states the same variation of the motif as T, whilst the remaining voices have *P-0*. The motif begins in T and then rises towards the top of the texture through CT, M and TR before finally appearing in B. The motif returns to the tenor at *P-4* before falling in the sequence *P-4, P-3, P-2, P-1, P-0* to the final cadence. On every occasion in this final section, the motif is stated without any rhythmic alteration; each note being assigned a semibreve in the original notation. In order to enable the motif to be heard clearly the scoring is reduced to three

voices whilst it moves through the different parts; the full texture is reserved until T enters with the final falling sequence.

Each movement of the Missa 'Albanus' begins with a contrapuntal head motif in the top three voices. Within this section Fayrfax uses pitches from the 'Albanus' motive in CT and M – annotated 'x' in Example 4.9(a). In order to investigate the way in which the chant is being used it is first necessary to look at the beginning of the antiphon *O Maria deo grata* – originally entitled *O Albane deo grata* – upon which Missa 'Albanus' is based, seen in Example 4.9(b). Although the antiphon survives incomplete – TR and T parts are lacking – the voices containing the 'Albanus' motif at the beginning of the mass do survive. In the motet the chant appears whole in the CT with the text 'O Maria'. The first three notes are heard in M before the entry of CT in a similar vein to the technique of pre-imitation that has already been noted in Missa 'Tecum principium'.

In view of this, it is easier to explain the way in which the chant is used within the head motif of the mass. The musical material based upon the chant in the M and CT is exactly the same in both the mass and antiphon. This suggests that the first three pitches of the chant are stated in the M at the beginning of the mass and that the pitches in CT are an anticipation of them. The octave equivalence at semibreve 13 acts as a pivot, passing the chant into CT. The chant is then completed in this voice, as it is in the antiphon, only an octave lower.

As has already been stated, the motet *O Maria/Albane deo grata* shares much musical material with Missa 'Albanus'. Unfortunately T, which would almost certainly have carried the 'Albanus' motif in the motet – as it does in the mass – does not survive. However, a large amount of material in T can be reconstructed with some certainty, particularly in the two tutti sections. Here



Example 4.9(a) – Head Motif: Missa' Albanus', Agnus dei

The first system of the musical score consists of five staves. The top staff is a vocal line in G major, starting with a whole note 'A' followed by a series of rests and ending with a half note 'gnus'. The second staff is a piano accompaniment line with a whole note 'A' followed by rests and a half note 'gnus'. The third staff is a vocal line with a whole note 'A' followed by rests and a half note 'gnus'. The fourth and fifth staves are piano accompaniment lines with whole notes and rests.

The second system of the musical score consists of five staves. The top staff is a vocal line starting with a whole note 'De' followed by a series of eighth notes. The second staff is a piano accompaniment line with a whole note 'gnus' followed by rests and a half note 'De'. The third staff is a vocal line with a whole note 'gnus' followed by rests and a half note 'De'. The fourth and fifth staves are piano accompaniment lines with whole notes and rests.

Example 4.9(b) – Beginning of *O Maria deo grata*

Editorial  
 Treble  
 O _____ Ma -

Mean  
 O _____ Ma -

Contratenor  
 O _____ Ma - -

Editorial  
 Tenor  
 O _____ Ma -

Bass

7

- ri - - - a.

- ri - - - a, de - o gra - ta, Ma - ter chri - - sti pre -

- ri - - - a, de - o gra - ta, Ma - ter chri - - sti

- ri - - - a, de - o gra - ta, Ma - ter chri - sti

De - o gra - ta, Ma - ter chri - sti

**Table 4.8 – Reconstructed Use of ‘Albanus’ Motif: *O Maria/Albane deo grata***

MENSURATION	MOTIF	VOICE
○	1-4' 1-3' 1-2' 1-2 1-3 1-4	T
C	P-4' P-5' P-6' P-6 P-5 P-4	T
	P-4 P-0 P-4 P-0 P-3	T CT M TR B
	P-0 P-4 P-6 P-4 P-2 P-4	T

Sandon has demonstrated that Fayrfax used the ‘Albanus’ motif in the same way as he does in the mass.³⁹ The manipulation of the nine-note melodic phrase is recorded in Table 4.8.

The fragmentary state of Missa ‘Sponsus amat sponsam’ makes detailed examination of Fayrfax’s cantus firmus treatment difficult. The tutti sections survive complete for only one of the four movements – the Credo. This reveals that the chant was segmented in a similar way to the other masses discussed above. The chant is split into two sections: *Dx* and *Dy*. The first section

³⁹ Robert Fayrfax, *O Maria deo grata* (ed. Nick Sandon) (Antico Edition: Newton Abbot, 1995). Comparison here could be made with Alwood’s Missa ‘Praise Him Praiseworthy’, based upon a five-note cantus firmus motif in M. Whilst Fayrfax’s varies the starting pitch of the ‘Albanus’ motif, Alwood chooses to begin each repetition on the same note. In addition, Alwood’s rhythmic use is much more strict; at the start of each movement the motif appears in breves, before shortening to semibreves towards the end. Minor alterations are made in order to avoid dissonances, usually with the insertion of rests within the motif, rather than omissions of complete pitches. A continental example could include Josquin’s Missa ‘Hercules Dux Ferrariae’.

Example 4.10 – Segmentation of *Sponsus amat sponsam* Plainchant: Missa ‘Sponsum amat sponsam’

*Dx*

Spon - sus a - mat — spon-sam sal - - va - tor vi - si - tat il - - lam,

*Dy*

R. Fra - grat o - dor dul - - cis, — can-tant ce - li a - gni - na — lau - - des.

**Table 4.9 – Notes of Chant Omitted in Cantus Firmus: Missa ‘Sponsus amat sponsam’**

MOVEMENT	SECTION	NOTES OMITTED
Gloria	<i>Dx</i>	12
	<i>Dy</i>	29, 31, 54, 65
Credo	<i>Dx</i>	12
	<i>Dy</i>	29, 67
	<i>Dy</i>	28, 57, 60, 67
	<i>Dx</i>	10, 12

corresponds with the verse of the antiphon, and the second with the respond. It is probably for this reason that the first section of chant is placed at the end of the Credo. Within the Credo the whole chant is stated twice.

More notes are omitted from the chant in this mass than in any of the others. Example 4.10 shows the chant as it appears in the Sarum *Antiphonale*, and Table 4.9 records which notes are omitted. It is relatively easy to account for a number of the omissions. On all but one occasion Fayrfax adheres to the repetition of notes as prescribed in the chant. However, in the final statement of *Dx* in the Credo *a*⁰ (note 9 or 10) is absent; it has either been omitted, or the two notes have been elided. Whenever the chant appears, notes 12 and 29 are omitted. The fact that this occurs every time indicates that Fayrfax may have been using a lost variant source – as suggested in Missa ‘O quam glorifica’. It is in view of this, that these notes have open heads in Example 4.10.

#### 4.5 Conclusion

Many elements of the large-scale structure of Fayrfax’s works were probably decided upon in the pre-compositional stages. Some works were almost certainly constructed through the use of arithmetical proportions and number symbolism. Although the reasons for the significance of particular numbers changed over time, the numbers that were considered to be of particular importance remained the same.

Scholars such as Fugler and Bray – and Messenger to some extent – have demonstrated that Fayrfax employed arithmetical proportion in his works. The lengthy discussion by Fugler in his thesis reveals that the way in which works were constructed using arithmetical planning varied considerably. As a result, a vast quantity of numbers can be generated from an individual work. In view of this, it has not been possible to provide a comprehensive account of arithmetical planning in Fayrfax's works. However, it has been demonstrated that the composer did employ these techniques within his surviving works, and so this area of investigation merits further research in the future.

A survey of Fayrfax's extant works reveals that he relied heavily upon the inclusion of pre-existing material. The three familiar early Tudor compositional genres are grouped together in different combinations through the use of a common cantus firmus, the sharing of musical material, or a combination of both. Whilst some research has been carried out in this area, the incomplete and partial state of works within each group presents significant problems when attempting to investigate this further.

Many of Fayrfax's works are based upon the cantus firmus. In the majority of cases theories can be put forward for the choice of chant; most usually for specific institutions, patrons, or important liturgical feasts. The ways in which the chant is used within the masses are similar. Almost exclusively it appears in T in the tutti sections of each movement, although it is possible to identify a number of examples where it is employed within semi-choir sections, and fragments appear in other voices, usually in the form of pre-imitation. Within all of the surviving masses the plainchant is segmented. This occurs in two ways; the chant can be split into two or three subsections. Notes are omitted or inserted, and cadential extensions added to take into account the melodic properties of the surrounding voices. In several instances specific reasons for

these changes can be identified, whilst on other occasions the reasons remain unclear.

Through a detailed investigation of the ways in which Fayrfax uses pre-existing chant, it becomes apparent that it provides a large-scale structural device both for individual works and grouped works. In addition, it dictates cadential pitches, and the motion of surrounding voices. Whilst the specific ways in which the chant was manipulated may not have been decided upon in the pre-compositional stages, its inclusion is of vital importance to the works as a whole on a number of significant levels.

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## CHAPTER 5: Rhythm and Metre

### 5.1 Introduction

To study rhythm is to study all of music. Rhythm both organizes, and is itself organized by, all the elements which create and shape musical processes.¹

Since the 1960s scholars such as Wallace Berry, Victor Zuckerkandl, Jonathan Kramer, and Grosvenor Cooper and Leonard Meyer have published large-scale analytical studies of rhythm. These either concentrate solely upon – or include a large section on – the study of rhythm and metre. Although the detailed analysis in each work varies slightly, the basic analytical concepts are remarkably similar, and are summarized in Chart 5.1.

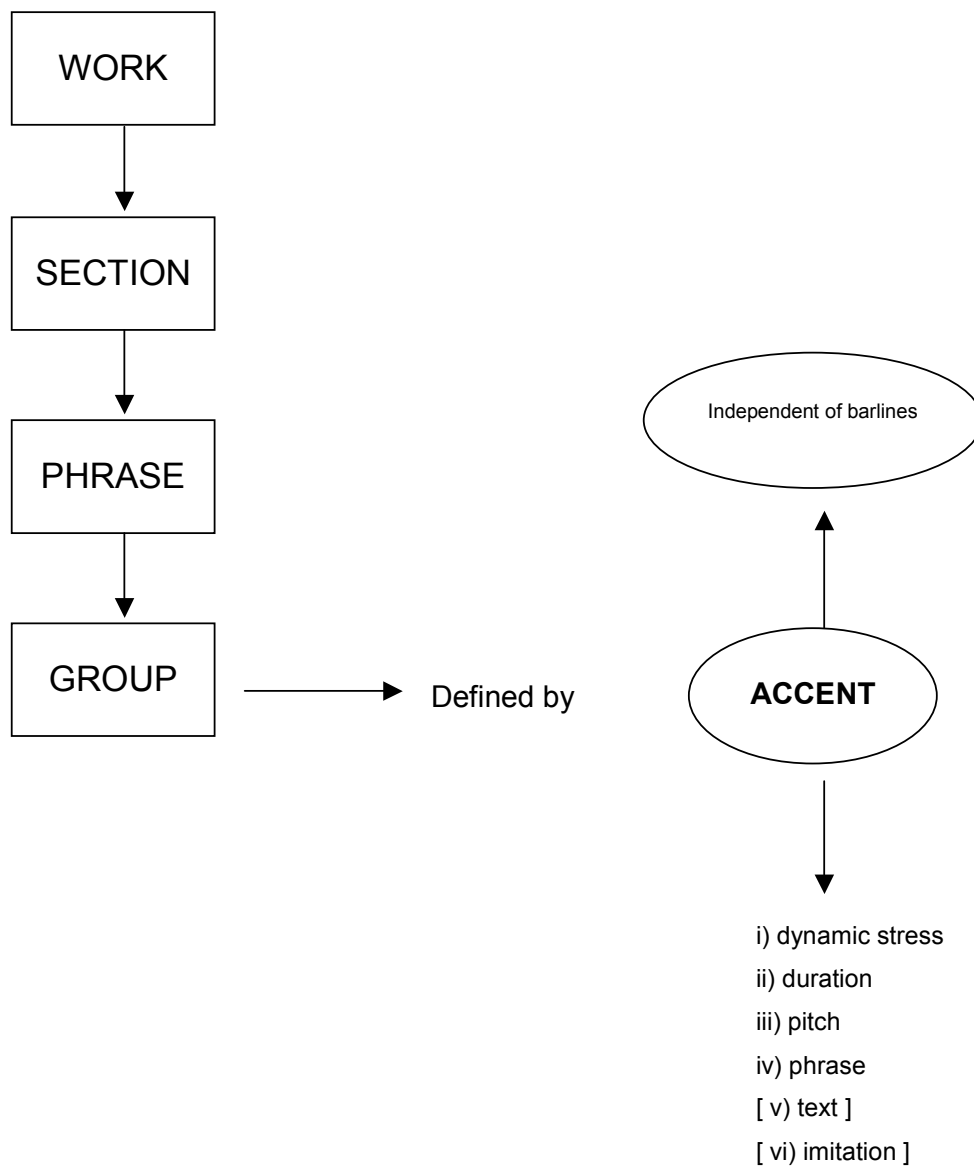
Each author – or group of authors – considers that rhythm and metre function on several different hierarchical levels within an individual work, and can be broken down into three areas: section; phrase; and rhythmic group. As with much analytical work carried out at this time, the authors limit their analyses to late-eighteenth-century and nineteenth-century texts, particularly piano works and string quartets. Many of these works can easily be broken down into the elements mentioned above given the periodic and highly tonal/cadential nature of the music. Entire formal sections can be identified by strong cadences – most of all V-I – and the cessation of the melodic line. Within pre- and post-tonal music this type of analysis is not always appropriate, therefore other defining characteristics must be sought. In identifying where new sections begin within music of the early Tudor period, changes in texture,

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¹ Grosvenor Cooper and Leonard B. Meyer, *The Rhythmic Structure of Music* (University of Chicago Press: Chicago, 1963) p 1.



Figure 5.1 – Segmentation of Work Governed by Rhythmic Phrases



scoring-transition type and text may be of use. Text, recurring musical material and rests will most probably define phrases.

On a more detailed analytical level, accents show where rhythmic groups begin and end. These do not always coincide with the strongest beats as indicated by the bars. Scholars have identified four ways in which accents can manifest themselves: (1) dynamic stress; (2) duration; (3) pitch; and (4) phrase. The first of these is obviously not appropriate when studying pre-tonal music, as neither dynamic markings, nor phrasing preferred by the composer exist. To the four already existing characteristics, textual underlay and imitation can be added.

The extent to which scholars examine the rhythmic structure of a work varies considerably. Kramer is more concerned with structure in terms of phrases and large groups, whereas Cooper and Meyer break each melodic line down and assign either a weak or strong accent to almost every single note.²

Polyphonic music is rarely mentioned in these texts, the primary reasons for which are stated by Kramer:

One of the pitfalls in the analysis of rhythmic groups ... is that no one has yet devised a viable method for studying simultaneously sounding groups that conflict. Yet much music is polyphonic. Although polymeter is not particularly common, except in certain fairly recent and quite old music, polyrhythms (by which I mean simply the simultaneous existence of different rhythmic groups in different voices) are pervasive in music. The problem is not so much in delineating concurrent groups – that would be cumbersome on paper but conceptually straightforward – but explaining how they interact.³

Zuckerandl briefly mentions polyphonic works of the sixteenth and early seventeenth centuries by Byrd and Palestrina in order to show how much of this

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² Jonathan D. Kramer, *The Time of Music: New Meanings, New Temporalities, New Listening Strategies* (Schirmer: New York & London, 1988) and Grosvenor Cooper and Leonard B. Meyer, *The Rhythmic Structure of Music* (University of Chicago Press: Chicago, 1963).

³ Jonathan D. Kramer, *The Time of Music* p 112.

repertoire displays irregular rhythmic groupings within individual voices, and metrically overlapping groups within different voices.⁴ The term used by Berry where accents do not coincide with strong beats in the bar is 'metric dissonance'.⁵

One of the problems with the analysis of pre-tonal music in this area is the absence of bar lines. As a result, it is impossible – or at least very difficult – to pinpoint exactly where metrical accents occur. The vast majority of works from the early Tudor period are bipartite in structure; the first section being in *tempus perfectus* and the second in *tempus imperfectus*. This was one of the standard structural techniques used by composers. As a result the musical material was governed by the metre unlike that of later periods.

Rhythmic groups are defined by two different types of accents, rhythmic and metrical. Although the two sometimes occur at the same point, in many instances they do not. In order to understand the difference between the two types of accent, it is necessary to examine the difference between beat and pulse. Beats are usually evenly spaced throughout a work and are timepoints created by the metre; they can be experienced but not heard. Pulses – on the other hand – are events which are interpreted by the performer and can be heard by the listener; they usually occur near beats and can be subjected to a wide variety of articulations and stresses.⁶ Metrical accents are defined by the beat of a work, and rhythmic accents by the pulse.

Kramer states that the way in which rhythmic groups interact within a polyphonic work has not been investigated successfully. In view of this I will concentrate on a small section of one of Fayrfax's works – the Benedictus of

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⁴ Victor Zuckerkandl, *The Sense of Music* (Princeton U.P.: Princeton, N.J., 1971) 111.

⁵ Wallace Berry, *Structural Functions in Music* (Prentice Hall: Englewood Cliffs, New Jersey, 1976) p 363.

⁶ Jonathan D. Kramer, *The Time of Music* p 97.

Missa 'Albanus' – in order to develop an appropriate analytical method. This is re-printed in full as Example 5.1 in Appendix 1 of Volume 2.

## 5.2 Rhythmic Segmentation

The principles of segmentation used by Kramer and Zuckerkandl – adapted as appropriate – can be applied to early Tudor music. In this earlier repertoire segmentation occurs on a number of different hierarchical levels. I intend to explain this by working from the large-scale to small-scale level in a similar way to the abovementioned theorists. For clarity, the terms Level 1, Level 2 and Level 3 will be used.

The parameters for large-scale, or Level 1, rhythmic segmentation are the same as those which I have already discussed in Chapter 3, and which I will investigate in more detail later in this chapter and in further chapters. These include: a change in mensuration – dividing a work usually into two, or sometimes three parts; a change in scoring; or a complete cessation of all voices, indicated by a single vertical line in original sources (a double bar in modern editions) and a fermata above the final vertical aggregate. Level 2 segmentation breaks each large-scale section into phrases, and on the final level (Level 3), each phrase is segmented into a number of smaller rhythmic groups, defined by recurring patterns. Within this chapter, I will deal primarily with Level 2 and 3 segmentation.

The Benedictus of the Missa 'Albanus' – as in all of Fayrfax's masses, and indeed most works of this type in the period – is only half of a larger movement, the Sanctus. The movement begins in *tempus perfectus* and changes to *tempus imperfectus* as the Benedictus starts. The second half of the movement is broken down into four further sections, defined by a change in

scoring. Three trio semi-choir sections scored for different combinations of voices are followed by a tutti section which concludes the movement.

### 5.2.1 Level 1 Segmentation

Metrical planning is one of the defining characteristics of Level 1 segmentation. It is possible to study the overall metrical structure of the incomplete works, as long as at least one voice survives in full, such as the motet *O bone Jesu*. Each mass movement and votive antiphon is usually broken down into two major sections, the first in *tempus perfectum* and the second in *tempus imperfectum*. Tables 5.1(a)-(c) show that there are a few exceptions to this rule in a number of Fayrfax's works; a second triple time section is added at the end of both settings of the Magnificat, the Gloria and Credo of Missa 'Albanus', the Credo of Missa 'Regali ex progenie', and *Salve regina*. The table also shows that one of his shorter works, *O lux beata trinitas*, has no change in mensuration, being composed in imperfect time throughout. The tables also reveal that Section 2 begins at the same point in the text in each movement of the six masses. The same is true in Sections 2 and 3 of the Magnificats, changes of metre occurring at the words 'Fecit potentiam' and 'Sicut locutus est' in both works. It is possible that large-scale arithmetical planning influences Level 1 Segmentation, but – as has already been discussed in Chapter 4 – further investigation in this area is beyond the scope of this study.

**Table 5.1(a) – Level 1 Rhythmic Segmentation: Masses**

WORK	MOVEMENT	SECTION 1 [O]	SECTION 2 [C]	SECTION 3 [O]
Missa 'Albanus'	Gloria	<i>Et in terra pax...</i>	<i>qui tollis...</i>	<i>Cum sancto...</i>
	Credo	<i>Patrem...</i>	<i>Et incarnatus...</i>	<i>Et expecto...</i>
	Sanctus	<i>Sanctus...</i>	<i>Benedictus...</i>	
	Agnus Dei	<i>Agnus Dei...</i>	<i>Agnus Dei...</i>	
Missa 'O bone Jesu'	Gloria	<i>Et in terra pax...</i>	<i>qui tollis...</i>	
	Credo	<i>Patrem...</i>	<i>Et incarnatus...</i>	
	Sanctus	<i>Sanctus...</i>	<i>Benedictus...</i>	
	Agnus Dei	<i>Agnus Dei...</i>	<i>Agnus Dei...</i>	
Missa 'Regali ex pro genie'	Gloria	<i>Et in terra pax...</i>	<i>qui tollis...</i>	
	Credo	<i>Patrem...</i>	<i>Et incarnatus...</i>	
	Sanctus	<i>Sanctus...</i>	<i>Benedictus...</i>	<i>in excelsis.</i>
	Agnus Dei	<i>Agnus Dei...</i>	<i>Agnus Dei...</i>	
Missa 'Sponsus amat sponsam'	Gloria	<i>Et in terra pax...</i>	<i>qui tollis...</i>	
	Credo	<i>Patrem...</i>	<i>Et incarnatus...</i>	
	Sanctus	<i>Sanctus...</i>	<i>Benedictus...</i>	
	Agnus Dei	<i>Agnus Dei...</i>	<i>Agnus Dei...</i>	
Missa 'Tecum principium'	Gloria (V1)	<i>Et in terra pax...</i>	<i>qui tollis...</i>	
	Gloria (V2)	<i>Et in terra pax...</i>	<i>qui tollis...</i>	
	Credo	<i>Patrem...</i>	<i>Et incarnatus...</i>	
	Sanctus	<i>Sanctus...</i>	<i>Benedictus...</i>	
	Agnus Dei	<i>Agnus Dei...</i>	<i>Agnus Dei...</i>	

**Table 5.1(b) – Level 1 Rhythmic Segmentation: Missa 'O quam glorifica'**

WORK	MOVEMENT	SECTION 1 [O]	SECTION 2 [O]
Missa 'O quam glorifica'	Gloria	<i>Et in terra pax...</i>	<i>qui tollis...</i>
	Credo	<i>Patrem...</i>	<i>Et incarnatus...</i>
	Sanctus	<i>Sanctus...</i>	<i>Benedictus...</i>
	Agnus Dei	<i>Agnus Dei...</i>	<i>Agnus Dei...</i>

**Table 5.1(c) – Level 1 Rhythmic Segmentation: Magnificats and Motets**

<b>WORK</b>	<b>SECTION 1 [O]</b>	<b>SECTION 2 [C]</b>	<b>SECTION 3 [O]</b>
Magnificat 'O bone Jesu'	<i>Et exultavit...</i>	<i>Fecit potentiam...</i>	<i>Sicut locutus est...</i>
<i>Magnificat Regale</i>	<i>Et exultavit...</i>	<i>Fecit potentiam...</i>	<i>Sicut locutus est...</i>
<i>Ave Dei patris</i>	<i>Ave Dei patris...</i>	<i>Ave Domini filia...</i>	
<i>Ave lumen gratiae</i>	<i>Ave lumen gratie...</i>	<i>Ave ros dulcedinis...</i>	
<i>Eterne laudis liliium</i>	<i>Eterne laudis...</i>	<i>Isachar quoque...</i>	
<i>Gaude flore virginali</i>	<i>[Gaude flore...]</i>	<i>Gaude mater...</i>	
<i>Lauda vivi alpha</i>	<i>Lauda vivi...</i>	<i>Lauda admirabilis...</i>	
<i>Maria plena virtute</i>	<i>Maria plena virtute...</i>	<i>Dixit Jesus...</i>	
<i>O bone Jesu</i>	<i>O bone Jesu...</i>	<i>O nomen Jesu...</i>	
<i>O lux beata trinitas</i>	<i>O lux beata...</i>		
<i>O Maria/Albane deo grata</i>	<i>O Maria Deo grata...</i>	<i>O Maria, mater...</i>	
<i>Salve regina</i>	<i>Salve regina...</i>	<i>Virgo mater...</i>	<i>O pia...</i>

### 5.2.2 Level 2 Segmentation

Several different options are available at Level 2 segmentation in view of the fact that the term 'phrase' has no clear-cut meaning when discussing early Tudor music. A 'phrase' could be defined in several different ways: by text, contour, cadential articulation, repeated durational patterns or presence of rests. A number of problems are encountered when attempting to use each of these terms to define phrases. The placement of text in the original sources is not always clear, and in some cases – especially where text is repeated – it does not appear at all. Although the rising and falling contour of the melodic line is clear in some voices, particularly TR, in others it is not so, for example, in B when large intervallic leaps are used, rather than moving by step. Regular lengths of phrases are not used as they are in later periods and so segmenting by predetermined lengths does not seem to be an appropriate method either.

After careful consideration, taking into account the inadequacies of other methods of segmentation, I have decided that rests would be used as the primary indication of where phrases begin and end.

There is, however, one case in which rests do not indicate the beginning of a new phrase. This is when the same short motif is repeated several times in one voice and short rests are inserted in order to punctuate each statement. This can be seen in TR between semibreves 373 and 388, where a five-note motif is repeated four times. As a result, the total phrase is taken to be from semibreve 366.5 to 388. This interpretation is supported by the fact that the vocal line in the T contains the same motive, but without the minim rest between each repetition.

The phrase lengths used in the Benedictus can be seen in Tables 5.2(a)-(d). This shows that the lengths used in all parts range from 2.5 to 68 semibreves. The mean length of phrases in each voice in each section is recorded, along with the range. The range is important as it shows the difference between the longest and shortest phrase. A low number means that the phrases are of a more equal length than a large number. Several comparisons can be made with the mean in each voice, for example, seeing whether the place of the voice within the texture has any bearing on phrase length (i.e., whether in the semi-choir sections it is at the top, middle or bottom, and whether there is any difference between reduced and full sections).

At first glance, the most distinctive figure in the tables is that for T in the tutti section – shown in Table 5.2(d). The value of 68 is by far the greatest present and is the only phrase that lasts for a whole section. On closer examination, the reason for this becomes clear. At this point T carries the cantus firmus motif upon which much of the mass is based. The nine-note motif occurs three times at this point, without a break between each repetition. As a result, this is not characteristic of the majority of phrases in this section.



**Table 5.2(a) – Level 2 Rhythmic Segmentation: Missa ‘Albanus’, Benedictus (344-407)**

VOICE	PHRASE	LENGTH/ SEMIBREVES	MEAN LENGTH	RANGE
TR	1	8	11.8	15
	2	11		
	3	22.5		
	4	7.5		
	5	10		
T	1	12	15.38	8.5
	2	13.5		
	3	20.5		
	4	15.5		
B	1	14	31.25	34.5
	2	48.5		

**Table 5.2(b) – Level 2 Rhythmic Segmentation: Missa ‘Albanus’, Benedictus (408-59)**

VOICE	PHRASE	LENGTH/ SEMIBREVES	MEAN LENGTH	RANGE
M	1	13	9.4	14.5
	2	8		
	3	4.5		
	4	3.5		
	5	18		
CT	1	18	10.38	12.5
	2	8.5		
	3	5.5		
	4	9.5		
T	1	9	8	16
	2	2.5		
	3	8		
	4	4.5		
	5	18.5		
	6	5.5		

**Table 5.2(c) – Level 2 Rhythmic Segmentation: Missa ‘Albanus’, Benedictus (460-551)**

VOICE	PHRASE	LENGTH/ SEMIBREVES	MEAN LENGTH	RANGE
<b>CT</b>	1	12	12.07	30.5
	2	33		
	3	7		
	4	15.5		
	5	2.5		
	6	5.5		
	7	9		
<b>T</b>	1	6	10.44	14
	2	13		
	3	3.5		
	4	8		
	5	12.5		
	6	7.5		
	7	15.5		
	8	17.5		
<b>B</b>	1	34	30.17	28.5
	2	51		
	3	5.5		

**Table 5.2(d) – Level 2 Rhythmic Segmentation: Missa ‘Albanus’, Benedictus (552-619)**

VOICE	PHRASE	LENGTH/ SEMIBREVES	MEAN LENGTH	RANGE
TR	1	6	9.5	11
	2	7		
	3	7		
	4	11		
	5	17		
	6	9		
M	1	4	7.69	12.5
	2	15		
	3	13		
	4	12		
	5	6.5		
	6	4		
	7	2.5		
	8	4.5		
CT	1	6	10.5	20
	2	7		
	3	3		
	4	9		
	5	23		
	6	15		
T	1	68	68	0
B	1	22	16	15
	2	9		
	3	9		
	4	24		

The B phrases in the two semi-choir sections are much longer than the phrase in the tutti. The low mean in T in the second semi-choir section, where this voice is at the bottom of the texture, suggests that it is not the place in the texture that is important but the part used. The phrase lengths in CT further substantiate this interpretation – the values being similar in both the semi-choir and full sections, and when it appears in the middle and at the top in the reduced sections. In the final semi-choir section, B has only three phrases whilst T and CT have eight and seven respectively. The fact that the last of the B phrases is only 5.5 semibreves long, indicates that for the most part, the phrases are considerably longer than those in T and CT.

Where four or more phrases are present in one voice in a section, the way in which the phrases change in length over time can be investigated. The tables show three patterns: (1) an increase in length followed by a decrease; (2) a decrease followed by an increase; and (3) an increase only. It is important to note that these are only general patterns; when a pattern is said to increase, one value will not necessarily be larger than the previous one, though on a larger scale, the values will increase. Moreover, the patterns are not the same in every voice in each section. For example, in the second semi-choir section the lengths decrease in M and CT before increasing again, whilst the opposite occurs in T. Of the 11 sections containing four or more phrases, the highest or lowest value – depending upon the general trend – occurs in the penultimate section of all but two. This produces a sense of tension and then release, building towards the final cadential point.

### 5.2.3 Level 3 Segmentation

Given the conceptual problems in identifying rhythmic and metrical accents within the early Tudor repertoire my investigation of small-scale rhythmic segmentation differs from that of Kramer and Zuckerkandl. I have decided to investigate the possibility that Fayrfax employs recurring rhythmic patterns within his works as a structural device.

Table 5.3 records a number of rhythmic groups identified within the Benedictus of Missa 'Albanus'; it also shows in which voice(s) and section they are to be found, and the frequency with which they are repeated within that particular section. Some groups include rests, which are particularly used to punctuate recurring patterns, thereby making them more prominent within the polyphonic texture. All of the groups identified contain between three and eight

notes – or a combination of notes and rests – with the majority containing four or five items, and being between three and four semibreves in total length.

The distribution of these rhythmic groups within the Benedictus merits some investigation. The 22 groups identified (A-V) fall into four different categories: (1) those that are used imitatively – indicated by *i*; (2) those that are used sequentially – indicated by *s*; (3) those that are used concurrently – indicated by *c*; and (4) those that seem to occur in no specific place – indicated by *r*.

Section 3 of the Benedictus (semibreves 460-551) provides a good example of the way in which rhythmic groups are manipulated. It begins with a fairly standard imitative procedure using groups *L* and *M* – the only point at which they are employed within the Benedictus. After the opening imitative phrase group *K* is heard twice in T at 476, and is then repeated three times in CT. Further repetitions in the B at 504 show that *K* is not used solely on a local level – as *L* and *M* are, for example – but regionally. Whenever this four-note pattern is used the rhythmic density of the other voices decreases considerably, particularly when it first occurs. This – together with the fact that it appears eight times in total – suggests that it is designed to be a feature of the section as a whole.

Group *J* also appears eight times within Section 3. The most prominent example of this is to be found at 516, where it is heard imitatively in CT and T voices. However, the group first appears in T at 484. The insertion of rests either side – thereby highlighting the pattern – confirms that this is the case. At 528 a transmogrification of *J* can be seen. The phrase in CT begins in the same way as *J* but is subsequently altered. This may be connected to the use of rhetoric, a subject studied thoroughly within universities of the early Tudor period as part of the *quadrivium*. An *exordium* began a classical oration, and





































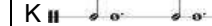










was intended to catch the audience's attention.⁷ Fayrfax achieves this through the use of imitative entries and repetitions of *J*. The unexpected alteration of *J* – rather than the introduction of a completely new rhythmic idea – is possibly intended to recapture the listener's attention. This example supports the theory that group *I* morphs into *H* at 449-50.

The patterns discussed so far are encountered only on a local or regional level. Eleven of the rhythmic groups identified in the Benedictus are to be found throughout the work, and in many ways these are the most important. This is particularly true when they appear more than twice, both in different voices and in different sections. Tables 5.3 and 5.4 show that four groups display all of these characteristics: *A*, *I*, *O* and *Q*. In addition, groups *U* and *V* are to be found in different voices and different sections, but are only used twice. Further investigation including a broader range of works, might prove that these rhythmic groups are some of the building blocks of Fayrfax's music. This will be considered in more detail within Chapter 8.

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⁷ For more information about this subject see: Richard A. Lanham, *A Handlist of Rhetorical Terms* (University of California Press: Berkeley, 1991) pp 75 and 171.

**Table 5.3 – Level 3 Rhythmic Segmentation (Benedictus)**

	SECTION 1	SECTION 2	SECTION 3	SECTION 4
<b>TR</b>	<p>A  x 4</p> <p>C  x 4</p> <p>D  x 2</p> <p>I </p> <p>U </p> <p>V </p>			<p>P </p> <p>R </p>
<b>M</b>		<p>E </p> <p>G </p> <p>H </p> <p>I  x 2</p> <p>O </p>		<p>N  x 2</p> <p>O </p> <p>P </p>
<b>CT</b>		<p>E </p> <p>I </p> <p>O </p> <p>Q </p>	<p>J  x 3</p> <p>K  x 3</p> <p>L </p> <p>M </p> <p>S </p> <p>T </p> <p>U </p>	<p>R </p>
<b>T</b>	<p>B </p> <p>F </p> <p>Q </p>	<p>A  x 2</p> <p>E </p> <p>G </p> <p>H </p>	<p>J  x 5</p> <p>K  x 2</p> <p>L </p> <p>M </p> <p>Q </p> <p>T </p>	
<b>B</b>	<p>B </p> <p>F </p>		<p>A </p> <p>K  x 3</p> <p>S </p> <p>V </p>	





In general rhythmic patterns occur more frequently within the reduced sections than in those scored for all five voices, as demonstrated in Table 5.3. This suggests that other structural devices are employed within the full sections, rather than small-scale rhythmic groups. Within the Benedictus, we have seen that it is the cantus firmus in T that provides the structural underpinning. There may also be another reason why small-scale rhythmic groups are not used as frequently within full sections: patterns such as those listed above are less easily audible within the larger polyphonic framework.

### 4.3 Rhythmic Intensity

In the previous section it was noted that several patterns occur regarding the lengths of phrases within the Benedictus. I also wanted to investigate the possibility that Fayrfax creates a sense of climax within each section of the movement by increasing the rhythmic intensity. A graphical representation seemed to be the best way of displaying this, but finding a satisfactory solution proved surprisingly difficult. After a number of failed attempts I settled on the presentation seen in Graphs 5.1-5.4. The x-axis shows time in semibreves and the y-axis shows the rhythmic intensity from low at the top to high at the bottom. The rhythmic intensity scale is also in semibreves (1=semibreve, 2=breve, 4=long etc.). Each point representing a note in the section – was entered manually into Microsoft Excel, recording its length and position. An example of this can be seen in Table 5.5, showing the first 32 semibreves of the TR, T, and B semi-choir section of the Benedictus. In addition to recording the rhythmic intensity of each voice, I also noted the composite effect, created by combining the rhythmic values of all three voices. Having plotted these values on a series of graphs, I added a line showing the moving average – the average of all values at one point – throughout the section.

**Table 5.5 – Rhythmic Intensity: Missa ‘Albanus’, Benedictus (Section 1)**

BAR	SEMIBREVE	COMPOSITE	BASS	TENOR	TREBLE
1	1	2	4	4	
	2				
	3	2			2
	4				
2	5	1	1	4	1
	6.5	0.5	0.5		0.5
	7	0.5	1		1
	7.5	0.5			0.5
	8	0.5	0.5		0.5
	8.5	0.5	0.5		0.5
3	9	3	4	4	2
	10		1		
	11		1		
	12	1			1
4	13	0.5			0.5
	13.5	0.5			0.5
	14	0.5			1
	14.5	0.5		0.5	
	15	0.5		0.5	1
	15.5	0.5		0.5	
	16	0.5		1	1
	16.5	0.5	0.5		
5	17	0.5	0.5	1	1
	17.5	0.5	0.5		
	18	1	1	1	1
	19	0.5	1	0.5	1
	19.5	0.5		1.5	
	20	1	1		1
6	21	1	1	1	1
	22	1	1	1	1
	23	0.5	1	1	
	23.5	0.5			0.5
	24	0.5	1	1	0.5
	24.5	0.5			1
7	25	0.5	2	2	
	25.5	0.5			0.5
	26	1			1
	27	1	1.5	1	1
	28	0.5			1
	28.5	0.5	1	2	
8	29	0.5			1
	29.5	0.5	1		
	30	0.5			1
	30.5	0.5	1	1	
	31	0.5			0.5
	31.5	0.5	1	1	0.5
	32	0.5			1
	32.5	0.5	1.5	1	

In order to demonstrate the ways in which rhythmic intensity can be studied from graphs such as these, I will first provide a detailed examination of Graphs 5.1(a)-(d), covering the first reduced section in the Benedictus. This will then enable me to then make broader statements about the other sections.

A number of trends are apparent when comparing the moving average on Graphs 5.1(a)-(d). In very general terms the intensity is low at the beginning and end of the section and high in the middle. A steep gradient shows that the intensity increases rapidly whilst a shallow one indicates that it increases more slowly. The initial increase in rhythmic intensity in TR and B – although over different periods of time – is fairly similar. In contrast, the increase in T is much more gradual.

After the initial increase, the pattern in TR and B is the same: trough, peak, trough, peak, trough. On the other hand, T follows a slightly different pattern: trough, peak, trough. Graphs 5.1(a) and 5.1(c) reveal that the rhythmic intensity at both troughs in the TR and B graphs is roughly equal, whilst the final trough on all graphs is the lowest, showing the greatest rhythmic intensity. Graph 5.1(b) reveals that in T the final trough is again the lowest. All three troughs in the TR and B graphs come within a range of 2 semibreves of each other (9 and 10.5), (32 and 30) and (55 and 54).

The vertical position of the line in each graph also merits closer attention. After the initial increase, the peaks and troughs oscillate around different rhythmic values. In TR and T, the difference between each peak and trough is fairly small, although there is a slight increase, as mentioned above. The TR values oscillate between 1 and 0.5 semibreves, giving an average of 0.75 (or  $\downarrow$ ). The range of T is slightly higher – between 1.125 and 0.75 – giving an average of approximately 1 semibreve. The shape of the line in B is different from that of the other two voices. Taking an average over the whole line is therefore not appropriate. A more productive approach is to split the line after the initial

increase into two sections; the first from semibreve 7-47 ( $S_1$ ) and the second from 47-58 ( $S_2$ ). The difference between the two troughs in  $S_1$  is negligible, however, the final trough is much lower, by about 0.5 semibreves. The troughs and peaks in  $S_1$  oscillate around 1 whilst the trough in  $S_2$  dips to 0.5. This difference is much greater than in the TR and T graphs.

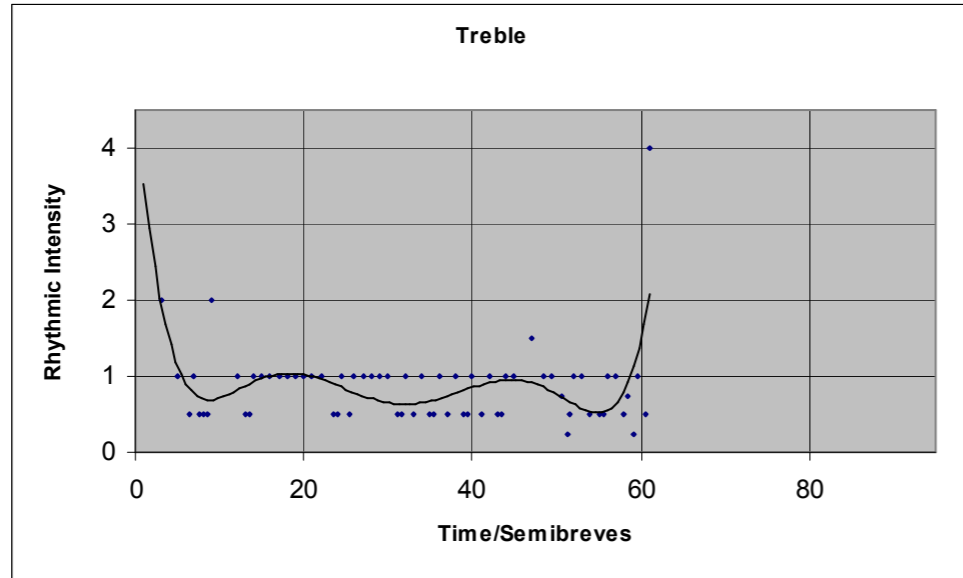
The fact that the greatest points of rhythmic intensity in TR and B occur within only two semibreves of each other indicates that they have the most significant bearing on the composite graph. As a result, the difference between the peaks and troughs in Graph 5.1(d) is not as great as in the other ones. The rhythmic intensity increases by a crotchet at each trough, a greater value than in any of the individual voices but the difference between the peaks and troughs is not as great.

Although the rest of graphs generally speak for themselves, a number of features are worth highlighting. By retaining the same scale on the x-axis in each graph, it is clear that patterns in the rise and fall of rhythmic intensity are not dependent upon the length of the section. The increase in intensity towards the end of Section 2 is due to the rapid decrease in CT rather than an increase in the outer voices (M and T). A similar pattern can be seen in the middle voice in Section 3 – here T. However, on this occasion the composite graph remains level between the initial increase in intensity and final decrease; the increases in CT and B balancing the decrease in T. Graphs 5.3(a)-(c) also show that the lengths of notes are varied more considerably than the previous two sections.

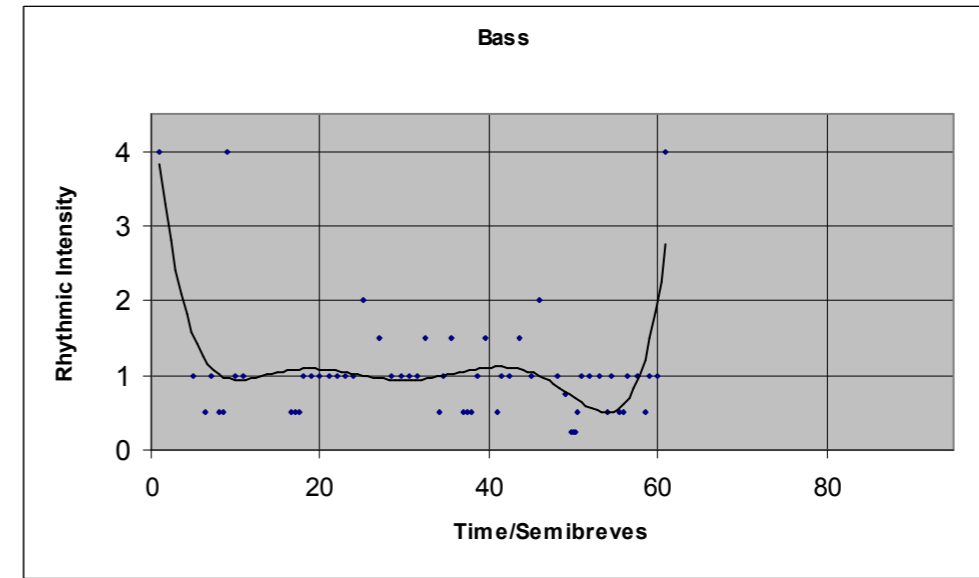
The tutti section at the end of the Benedictus shows a number of interesting features. Although the rhythmic intensity in each individual voice is generally much lower than in the sections scored for reduced voices, the overall intensity – shown by the composite graph – is not dissimilar to those of the others. The T graph reveals the large-scale rhythmic planning of the entire section. At first it looks as though two patterns are repeated, each consisting of

seven semibreves and two longs, thereby ignoring the values either side. However, in Chapter 4 I have investigated Fayrfax's use of a nine-note motif throughout the work. Counting in groups of nine from the first note in T, the pattern actually consists of a semibreve, followed by two longs and six semibreves. The final statement of the motif brings the movement to a close, and so on this occasion the last note is changed from a semibreve to a long. It is the repetition of this motif that underpins the rhythmic structure at the end of the movement.

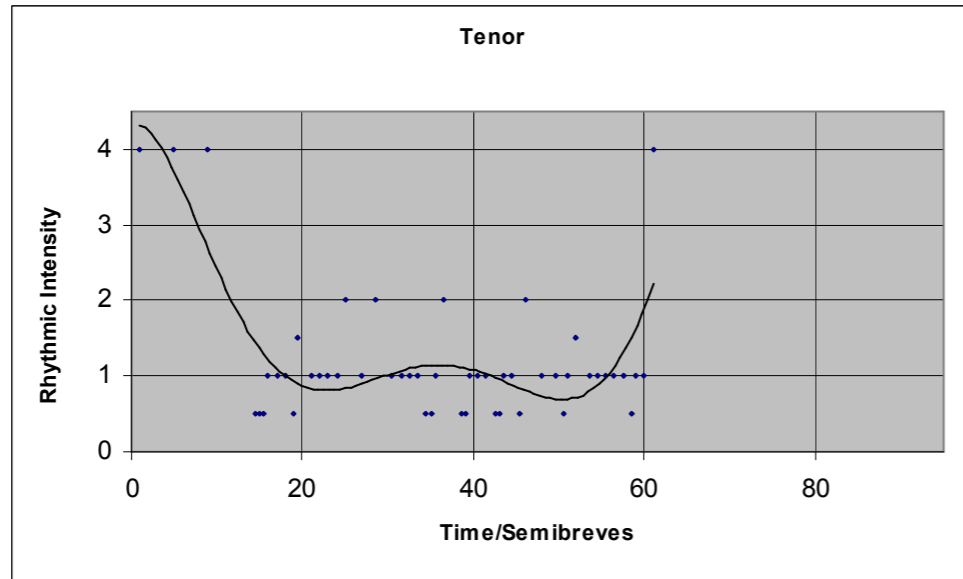
Graph 5.1(a) – Rhythmic Intensity in Section 1: Missa ‘Albanus’, Benedictus (Treble)



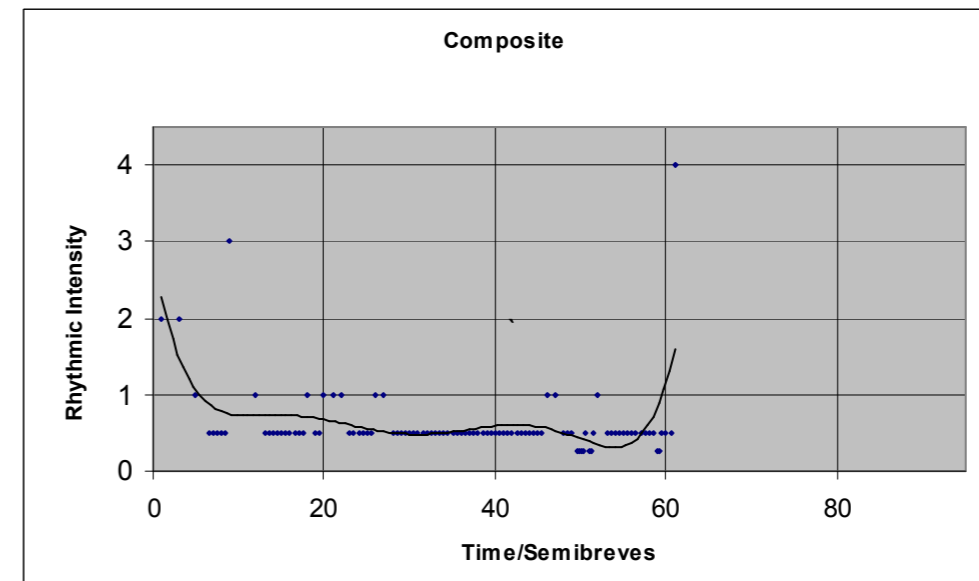
Graph 5.1(c) – Rhythmic Intensity in Section 1: Missa ‘Albanus’, Benedictus (Bass)



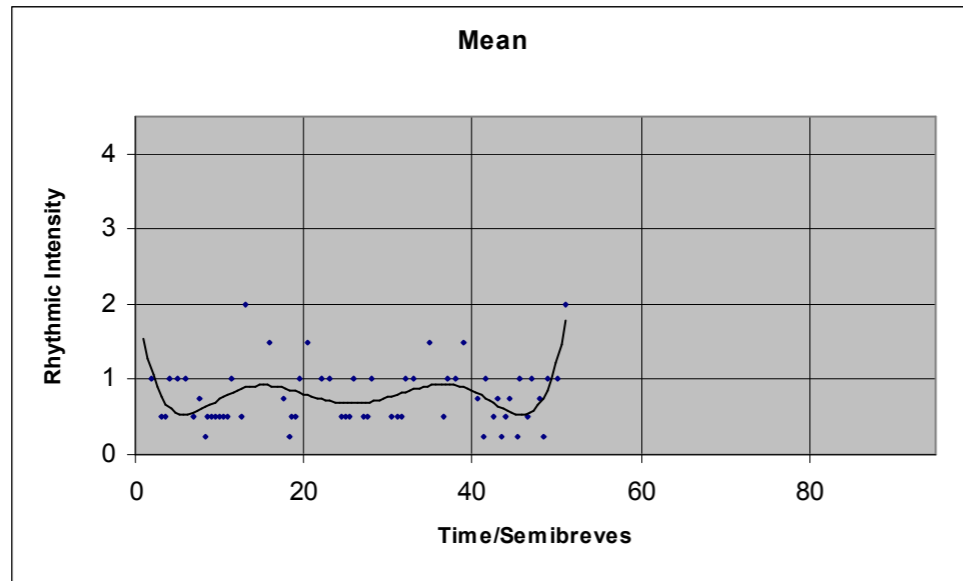
Graph 5.1(b) – Rhythmic Intensity in Section 1: Missa ‘Albanus’, Benedictus (Tenor)



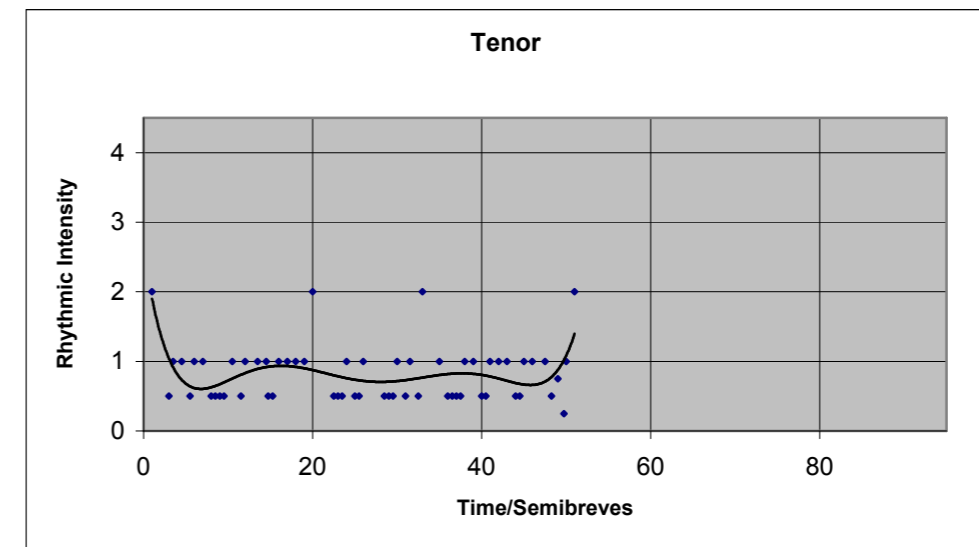
Graph 5.1(d) – Rhythmic Intensity in Section 1: Missa ‘Albanus’, Benedictus (Composite)



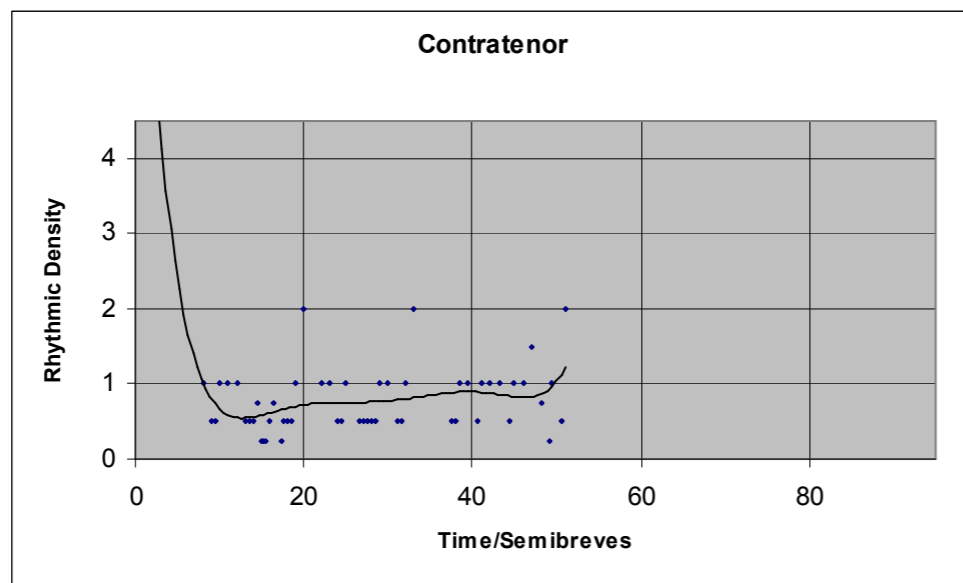
Graph 5.2(a) – Rhythmic Intensity in Section 2: Missa ‘Albanus’, Benedictus (Mean)



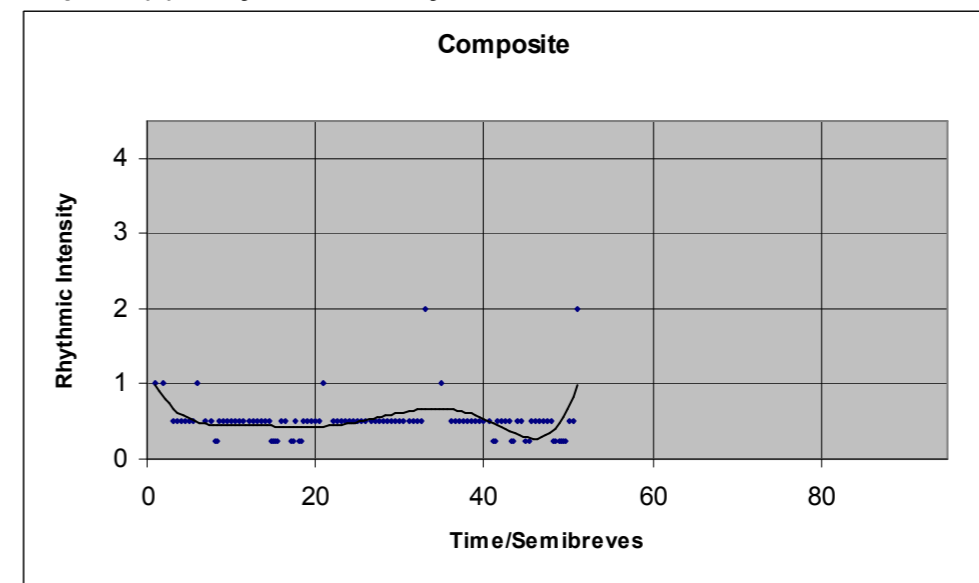
Graph 5.2(c) – Rhythmic Intensity in Section 2: Missa ‘Albanus’, Benedictus (Tenor)



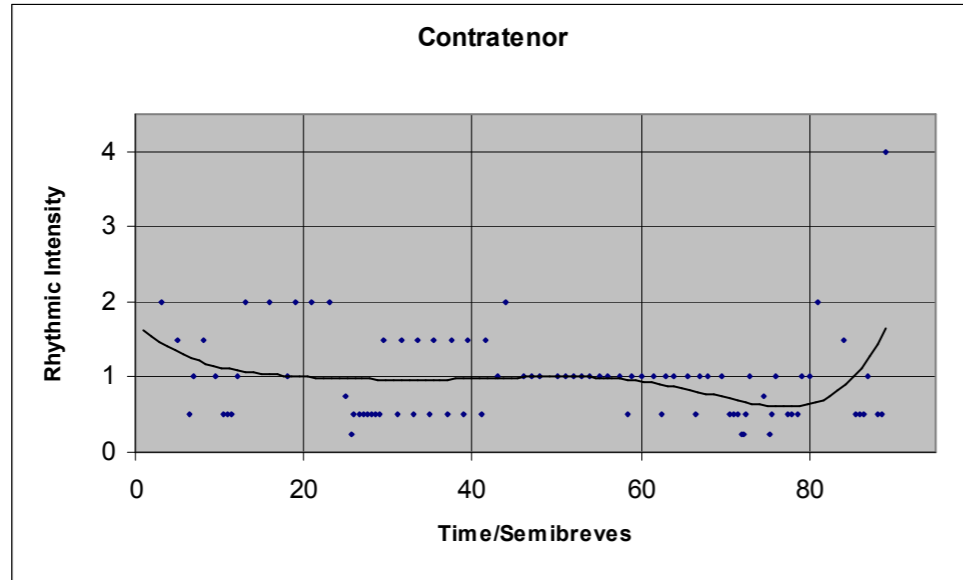
Graph 5.2(b) – Rhythmic Intensity in Section 2: Missa ‘Albanus’, Benedictus (Contratenor)



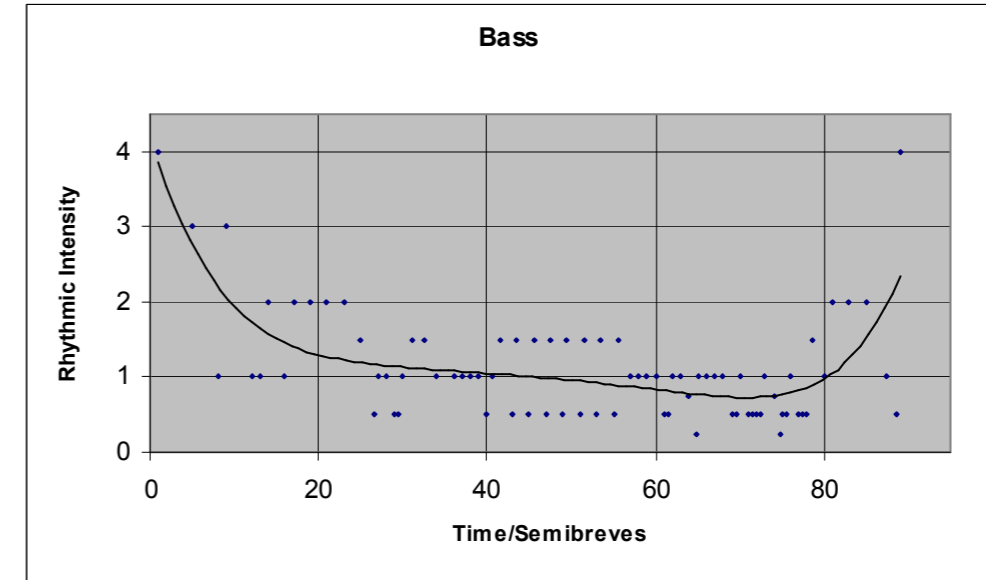
Graph 5.2(d) – Rhythmic Intensity in Section 2: Missa ‘Albanus’, Benedictus (Composite)



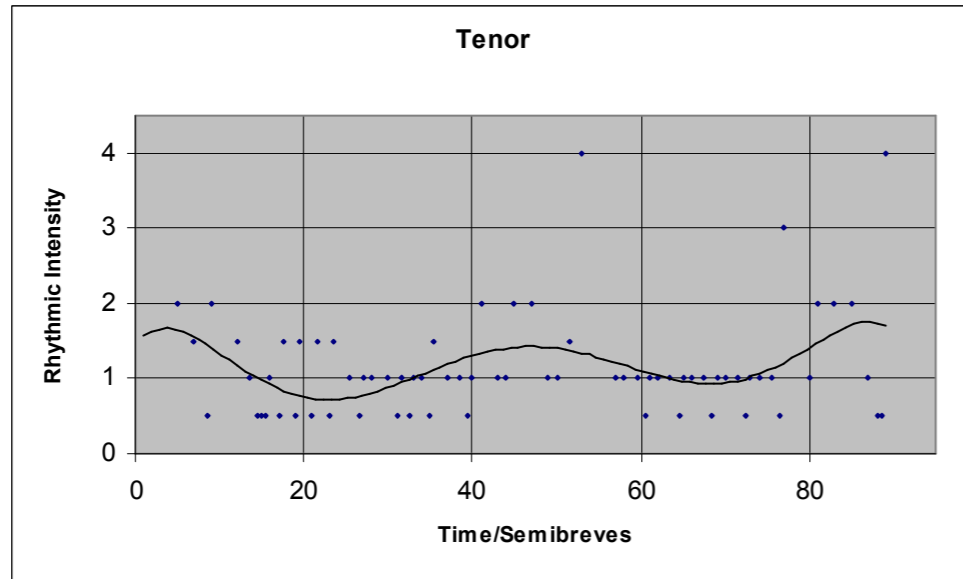
Graph 5.3(a) – Rhythmic Intensity in Section 3: Missa ‘Albanus’, Benedictus (Contratenor)



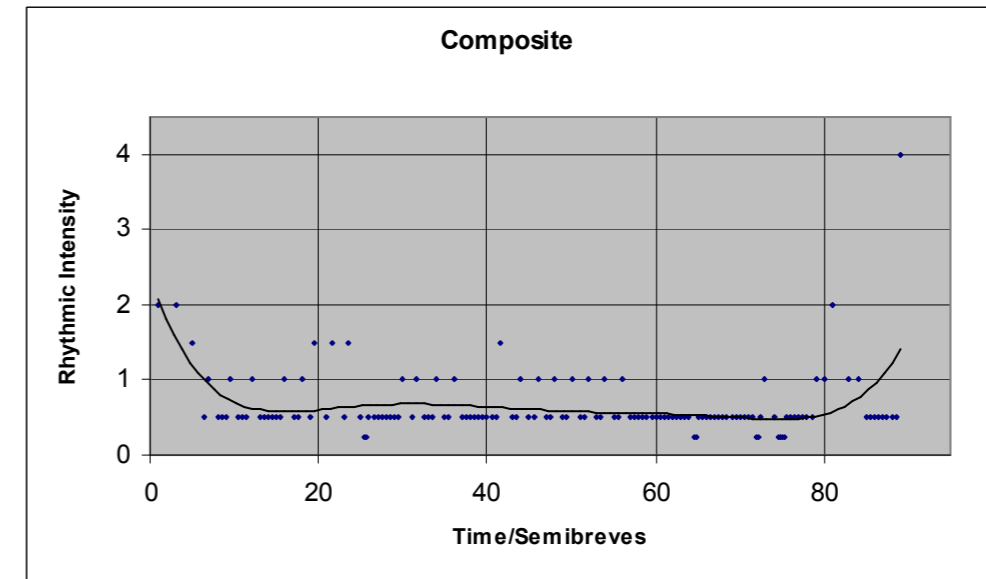
Graph 5.3(c) – Rhythmic Intensity in Section 3: Missa ‘Albanus’, Benedictus (Bass)



Graph 5.3(b) – Rhythmic Intensity in Section 3: Missa ‘Albanus’, Benedictus (Tenor)

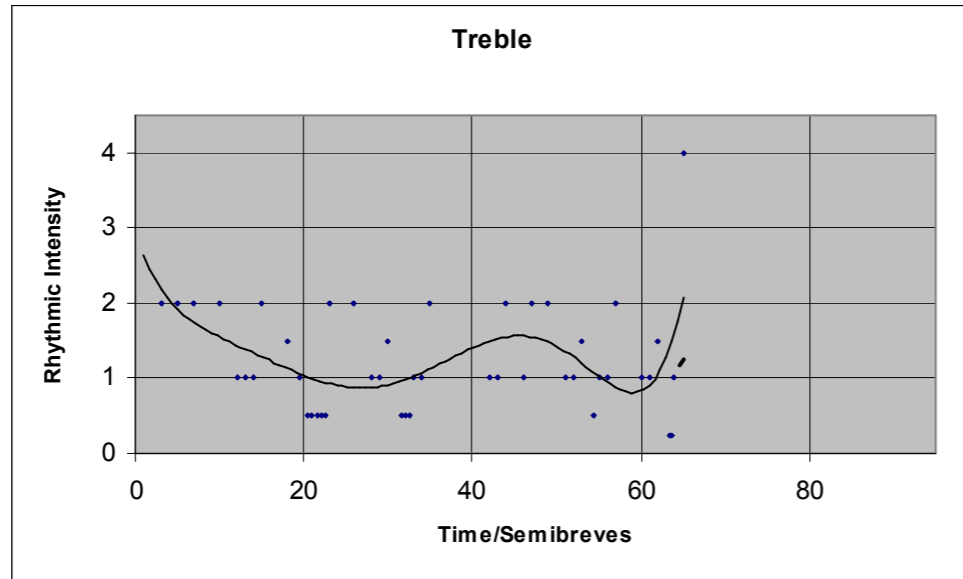


Graph 5.3(d) – Rhythmic Intensity in Section 3: Missa ‘Albanus’, Benedictus (Composite)

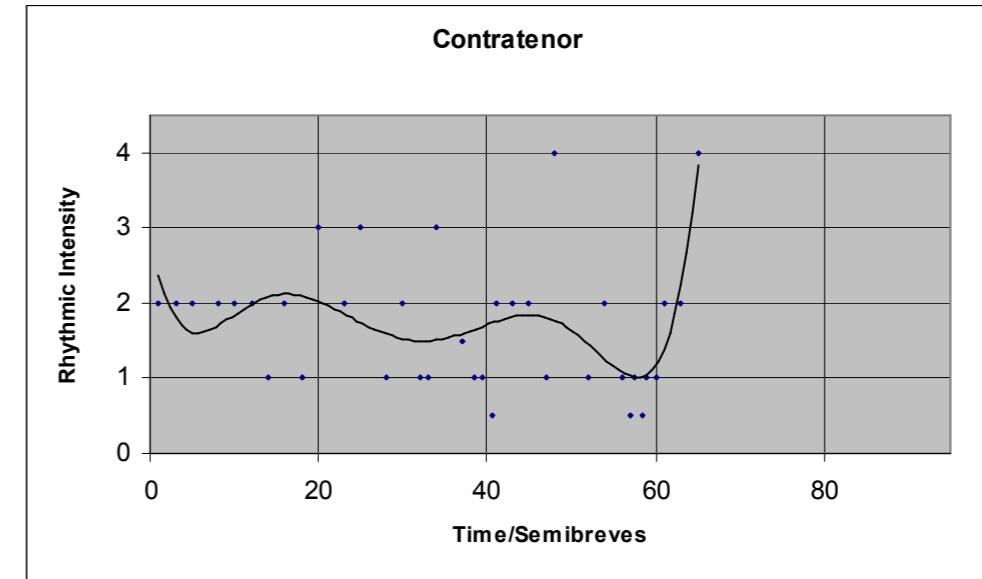




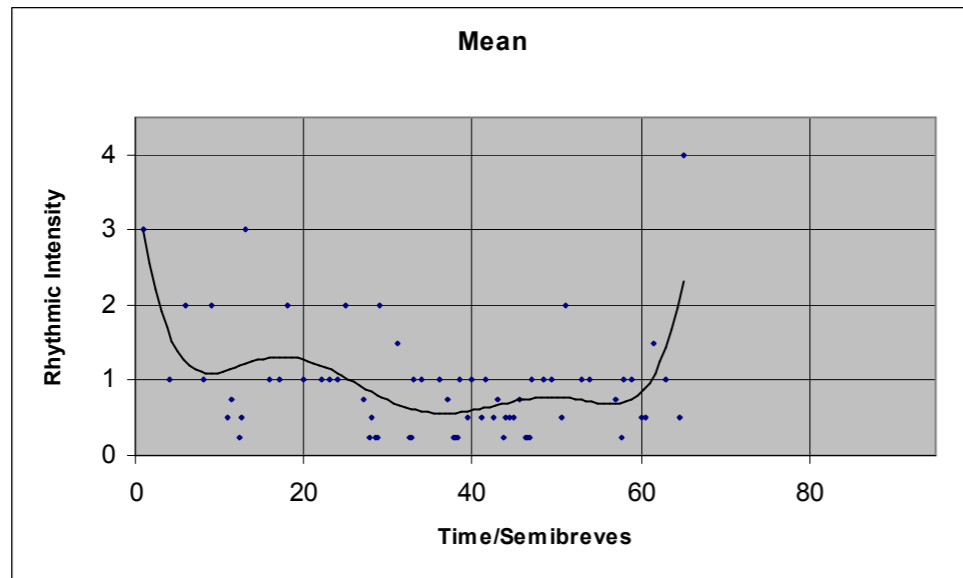
Graph 5.4(a) – Rhythmic Intensity in Section 4: Missa ‘Albanus’, Benedictus (Treble)



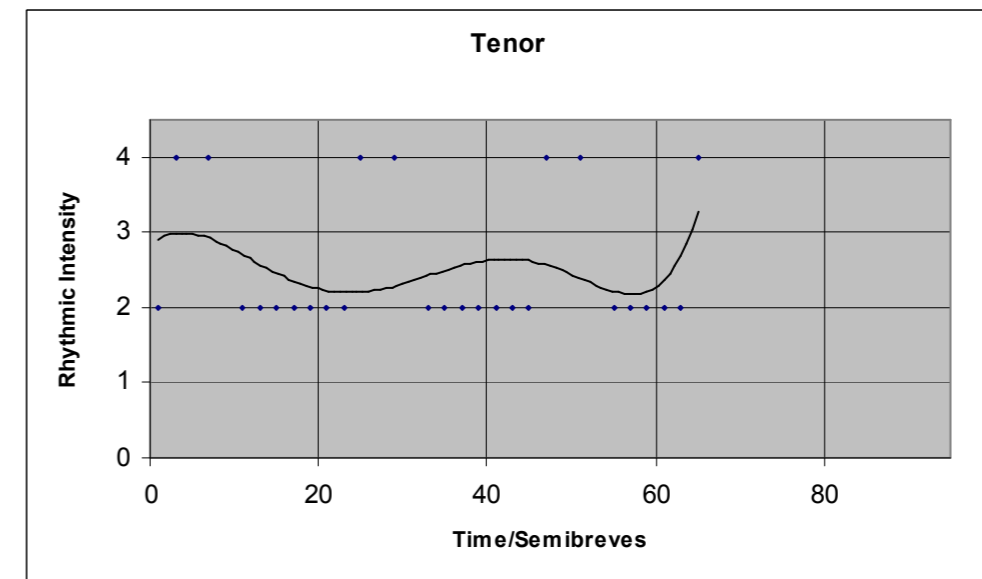
Graph 5.4(c) – Rhythmic Intensity in Section 4: Missa ‘Albanus’, Benedictus (Contratenor)



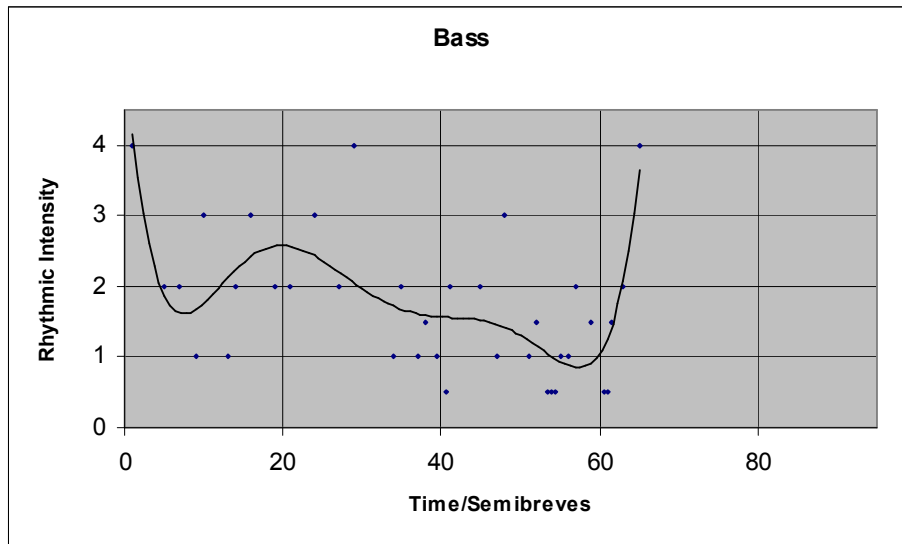
Graph 5.4(b) – Rhythmic Intensity in Section 4: Missa ‘Albanus’, Benedictus (Mean)



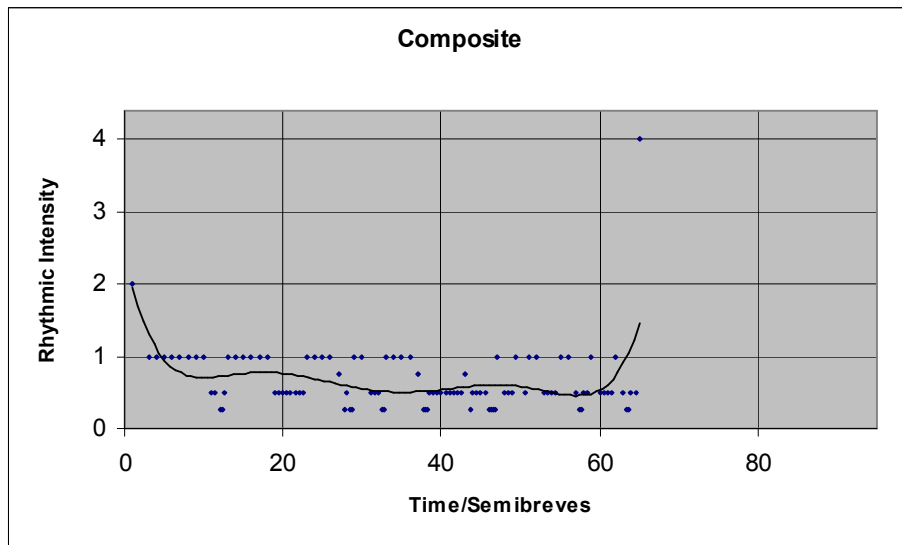
Graph 5.4(d) – Rhythmic Intensity in Section 4: Missa ‘Albanus’, Benedictus (Tenor)



Graph 5.4(e) – Rhythmic Intensity in Section 4: Missa ‘Albanus’, Benedictus (Bass)



Graph 5.4(f) – Rhythmic Intensity in Section 4: Missa ‘Albanus’, Benedictus (Composite)



## 5.4 Rhythmic Density

Rhythmic density is the rate at which one note moves to the next in a musical work. In reference to the works of Obrecht, Wegman writes that ‘the progressive increase in rhythmic density...underlies all mensural polyphony from the thirteenth to seventeenth centuries’.⁸ This statement is true in general terms; works from the thirteenth century tend to move in values of longs and breves, whilst those of the late-sixteenth and early-seventeenth centuries move in minims. However, a detailed look at works by Fayrfax shows that the opposite occurs. The difference in rhythmic durations of notes between the composer’s earlier and later works can be seen easily, simply by looking at the score.

The approximate dates of composition of several surviving works by Fayrfax are known through detailed studies of the manuscripts that contain his music. By examining the score it is apparent that the earlier works – such as *Salve regina*, which is present in the Eton Choirbook (compiled around 1500) – are much more rhythmically dense than his later works – such as *Maria plena virtute*. In order to study this in greater detail, I used Wegman’s method of comparing average note values (V) in each surviving work.⁹ Not only did I work out these averages for whole works, I also studied the difference between metrical sections, and between individual voices.¹⁰ This enables certain questions to be answered, for example: (1) Does the average rhythmic duration of T vary between works which use a cantus firmus and those that do not?; (2) Is one voice consistently the most/least rhythmically dense throughout a mass?; (3) Does the rhythmic density vary between perfect and imperfect sections?

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⁸ Rob C. Wegman, ‘Rhythmic Density in the Masses of Jacob Obrecht’, in *Born for the Muses: The Life and Masses of Jacob Obrecht* (Clarendon Press: Oxford, 1994) p 375.

⁹ Again I will use the word ‘average’ rather than the more correct arithmetical term ‘mean’, so as not to cause any confusion with the voice of this name.

¹⁰ In his study Wegman calculated (V) using only the values of the top two voices – unless they carried the cantus firmus. I have, however, used all of the voices in my work so that I can expand on Wegman’s method and attempt to find answers to questions such as those that I have posed above.

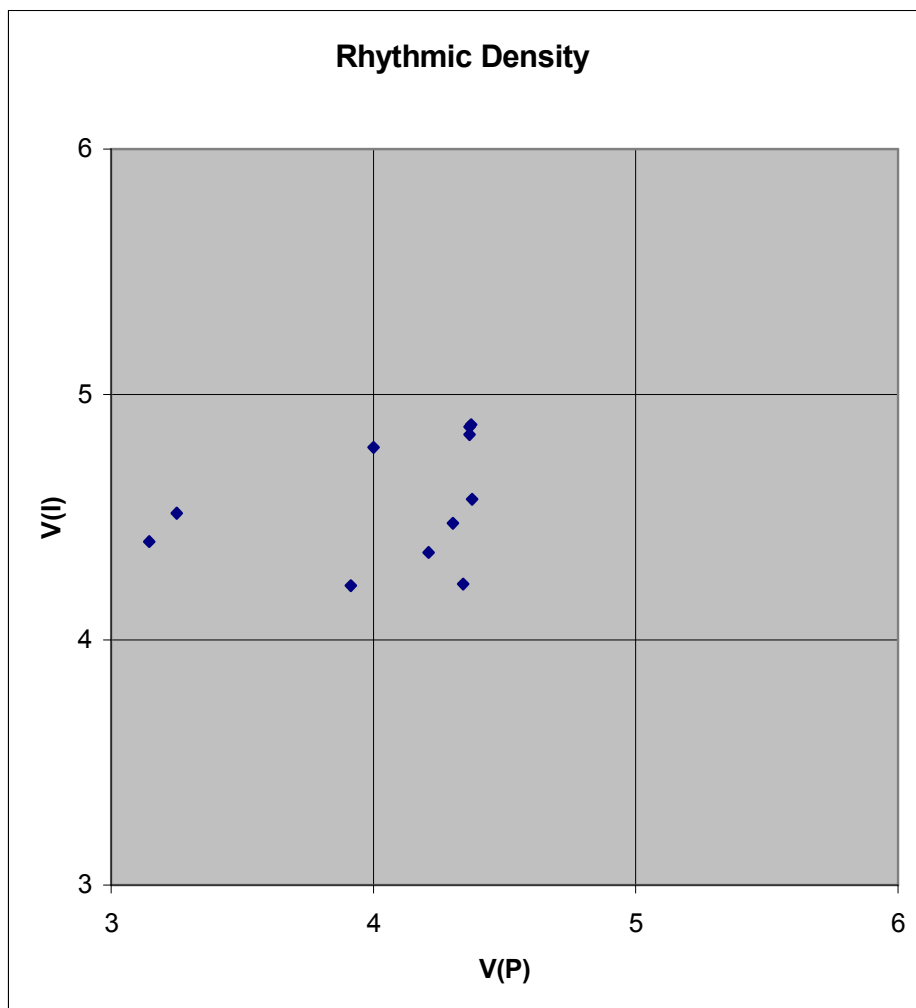
In order to calculate these values, I divided the total rhythmic value by the total number of notes – both of which were taken from my Matlab files of the works being examined, as discussed in Chapter 3. Once all of the values had been calculated for each work – with a crotchet as the basic unit – I was able to display the results in different ways depending upon the area I wanted to investigate. The first was simply to sort the works in Excel by their rhythmic density, highest to lowest – the lowest average value indicated the highest rhythmic density and *vice versa*. The second was to plot the values of the perfect and imperfect sections on a scatter diagram;  $V(\text{C})$  plotted on the y-axis, and  $V(\text{O})$  on the x-axis. And the third was to sort the values for each voice within the individual works or movements. Once the results had been arranged in this way, broader comparisons could be drawn.

Sorting the works by increasing rhythmic density produced some significant results. Table 5.7 records the rhythmic density for the complete 5-part works; including incomplete works would skew the results, particularly given that T is missing. The works that appear at the top of the table – with greatest total rhythmic density – are known to date from the early part of the composer's career. This is in complete contrast to Wegman's statement that density increased over time. It is also interesting to note that the two Mass/Magnificat pairs appear together in the table.

**Table 5.6 – Works Sorted by Rhythmic Density**

WORK	○	◐	TOTAL
<i>Salve regina</i>	3.144960362	4.400437637	3.574691127
<i>Magnificat Regale</i>	3.25	4.515535098	3.654766286
Missa 'Regali ex progenie'	3.913709116	4.220779221	4.078898857
<i>Ave dei patris</i>	4.342749529	4.22705314	4.280381944
Missa 'O bone Jesu'	4.209933436	4.355277476	4.292541543
Magnificat 'O bone Jesu'	4.303075769	4.475698035	4.358596795
Missa 'Albanus'	4.376078619	4.573533746	4.446099104
<i>Maria plena virtute</i>	4	4.784338896	4.453432282
Missa 'Tecum principium' (1)	4.366136657	4.836438923	4.579478751
Missa 'Tecum principium' (2)	4.366136657	4.867662204	4.594284376
<i>Eterne laudis liliium</i>	4.371900826	4.8768	4.65644725

**Graph 5.5 – Rhythmic Density: All Works**



**Table 5.7(a) – Voices Sorted by Rhythmic Density: Masses**

WORK	MOVEMENT	P1	P2	P3	P4	P5
Missa 'Albanus'	Gloria	TR	M	CT	B	T
	Credo	M	TR	CT	B	T
	Sanctus	M	TR	CT	B	T
	Agnus Dei	TR	CT	M	T	B
Missa 'O bone Jesu'	Gloria	TR	M	CT	T	B
	Credo	M	CT	TR	T	B
	Sanctus	M	TR	CT	T	B
	Agnus Dei	M	TR	CT	T	B
Missa 'Regali ex progenie'	Gloria	CT	TR	M	B	T
	Credo	M	CT	TR	B	T
	Sanctus	TR	CT	M	B	T
	Agnus Dei	TR	CT	M	B	T
Missa 'Tecum principium'	Gloria (V1)	M	TR	CT	B	T
	Gloria (V2)	M	TR	CT	B	T
	Credo	M	TR	CT	B	T
	Sanctus	M	CT	TR	B	T
	Agnus Dei	M	CT	TR	B	T

**Table 5.7(b) – Voices Sorted by Rhythmic Density: Magnificats and Motets**

WORK	P1	P2	P3	P4	P5
Magnificat 'O bone Jesu'	TR	M	CT	T	B
<i>Magnificat Regale</i>	CT	M	TR	B	T
<i>Ave dei patris</i>	TR	CT	T	B	M
<i>Eterne laudis liliium</i>	CT	T	B	M	TR
<i>Maria plena virtute</i>	TR	M	CT	T	B
<i>Salve regina</i>	CT	T	M	B	TR

Several patterns can be seen once the positions of voices have been sorted in descending order of rhythmic density within each work, as shown in Tables 5.8(a)-(b). The voice with the greatest density within each work or movement appears in column P1, moving through to the lowest in column P5.

By comparing the relative rhythmic density of the voices within each mass, it seems that the relationship between the voices was not random, but carefully planned by the composer. This is shown by the fact that the voices appear in the same – or close – position in each movement. For example, in Missa ‘Tecum principium’ M, B and T are always in the same positions – P1, P4 and P5 respectively – whilst TR and CT are in positions P2 and P3 in the Gloria and Credo, and the other way round in the following movements.

The T and B voices appear most frequently at the bottom of the lists. The T is the least rhythmically dense voice in all four movements of the two strict cantus firmus masses, ‘Regali’ and ‘Tecum principium’ – the re-composition of one section in the Gloria of the latter not producing any significant difference. This is unsurprising considering the long note values used by the composer to state the pre-existing material. The T also has the lowest rhythmic density in all but one movement of Missa ‘Albanus’. A theory that T of Missa ‘O bone Jesu’ is based on an unknown cantus firmus has been put forward in the past.¹¹ However, the results here – showing that T lies in P4, rather than fifth position – weakens this conjecture. The T and B voices are found to be the least rhythmically dense in other works such as *Magnificat Regale*, but also in *Maria plena virtute* which is freely composed.

The M voice most frequently has the greatest rhythmic density. This is particularly true in the masses ‘Albanus’, ‘O bone Jesu’ and ‘Tecum principium’ in which it appears in P1 in all but three movements, where it is in P2. However,

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¹¹ This is discussed in: Ann Signe Edahl, *The Use of Pre-existing Material in the Early Tudor Mass Cycle* (Unpubl. PhD thesis: University of Wisconsin-Madison, 1993).

in the motets *Eterne laudis liliun* and *Ave dei patris* it is found in penultimate and last place respectively. *Eterne laudis* displays an unusual property, in that TR is the least rhythmically dense, as it also is in *Salve regina*. It is difficult to put forward a theory suggesting the reason for this, particularly given that these two works lie at opposite ends of the overall density range shown in Table 5.7.

Patterns also appear when comparing mass/Magnificat pairs. The T and B voices appear in P4 and P5 in both compositional types of the 'O bone Jesu' group. Furthermore, the ordering of CT, T, B found in the Magnificat is also present in three of the mass movements – the Credo being the only movement not to conform to this pattern. A similar arrangement can be seen in the 'Regali' group, B and T lying in P4 and P5 respectively in both mass and Magnificat.

Wegman states that rhythmic density 'is held in a direct balance with tempo'.¹² He believes that as the tempi of works slowed down over time, rhythmic density increased. A result of this was that the overall rate of change from note to note would not have sounded any different; choirs moved from singing long notes quickly to short notes slowly. I have already showed that within Fayrfax's compositional output rhythmic density decreased rather than increased as Wegman writes. One of the factors that Wegman believes proves his theory is that – in music of the fifteenth century at least – the values increase when moving from perfect to imperfect time. This is generally true within Fayrfax's works, particularly those with the lowest overall rhythmic density, such as *Salve regina* (increase of 1.26) and *Magnificat Regale* (1.27). However, the increase in some works is negligible – for example the mass and Magnificat of the 'O bone Jesu' group that increase by 0.15 and 0.17 respectively – and in *Ave dei patris* the rate actually decreases slightly (by 0.12)

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¹² Rob C. Wegman, 'Rhythmic Density in the Masses of Jacob Obrecht', in *Born for the Muses: The Life and Masses of Jacob Obrecht* (Clarendon Press: Oxford, 1994) p 376.



when moving into imperfect time. The way in which the different mensural sections relate to each other can be seen in Graph 5.5.

## 5.5 Conclusion

Building upon previous scholarly research – primarily by those analysing music of the common-practice era – it has been possible to identify a number of ways in which rhythm and metre in Fayrfax's works can be examined. Having defined the parameters of three different hierarchical levels – section, phrase, and rhythmic motif – these have been explored in detail, taking the Benedictus of Missa 'Albanus' as a case study.

Fayrfax's large-scale segmentation of works is typical of the period. The majority of his surviving compositions are split into sections, defined by a change in metre, most usually from  $\circ$  to  $\subset$ . Although the phrase-lengths are sometimes pre-determined by the use of a cantus firmus, Fayrfax is able to manipulate them to create a sense of tension and release towards cadential points. The small-scale rhythmic structure is governed by a number of recurring motifs, which can be categorised into four groups, depending upon the way in which they are employed.

The tension/release effect is further highlighted in the investigation of rhythmic intensity. Examining the moving average of note-lengths reveals that Fayrfax increases the rhythmic intensity towards the ends of sections by shortening the note values. Although the rate at which this increase varies within individual voices, it can clearly be demonstrated that the entire contrapuntal fabric of the Benedictus is driven forward by the composite rhythmic intensity – that is the total intensity calculated as a result of combining the intensity of individual voices employed within the different sections.

Using a simple process of comparing average note values of Fayrfax's complete works, these were then sorted by increasing rhythmic density. Those works known to have been written in the earlier part of his career – and appearing in earlier contemporary sources – have a greater rhythmic density than those written in the latter part. One of the notable aspects of these calculations was that the two mass/Magnificat pairs appeared together in the table. Although this was to be expected – considering that they were almost certainly written at a similar time – it suggested that this was a reliable method of investigation.

The relationship between the rhythmic density of individual voices was also studied. This revealed that within the vast majority of Fayrfax's complete surviving five-part works T and B were least rhythmically dense. This, together with the other aspects considered, demonstrated that a considerable amount of careful rhythmic and metrical planning was employed by the composer on a number of different hierarchical levels.

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## CHAPTER 6: Mode and Cadential Planning

### 6.1 Introduction

Within existing theoretical treatises concerning medieval and renaissance music, the use of the church modes is probably the most widely discussed issue; it is also one of the most contentious. The first reason for this is that theorists frequently disagreed on the number, order, and nomenclature of the modes. The second is that the modes were alleged to have induced particular effects upon people. Harold Powers recounts an ancient story concerning a youth from Taormina who was 'incited to attempt rape on hearing the Phrygian mode and was calmed when the mode was changed to the Hypophrygian'.¹

The analysis of mode within polyphony poses a number of problems. On the whole, twentieth-century modal theorists can be divided into two groups: (1) the historicists – who develop their analytical methods based upon the work of sixteenth-century modal theorists such as Aron, Glarean, and Zarlino; and (2) the presentists – those whose methods are based upon the modern scholarship of writers such as Dahlhaus and Meier, and upon the music itself. With regard to early Tudor polyphony, both analytical methods present difficulties. As very few theoretical sources originating in England from before the late sixteenth century survive, scholars have had to rely on continental theory when studying early Tudor works.

Within twentieth-century scholarship, the study of modes – and in particular their use within works of the Medieval and Renaissance periods – has created a great deal of debate. The primary reason for this was in view of the

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¹ Harold Powers, 'Tonal Types and Modal Categories in Renaissance Polyphony', *JAMS* 34/3 (Autumn, 1981) p 430.

perceived transition from mode to key in the latter part of the period and beyond. Some scholars firmly believe that late-Renaissance music was composed with tonal principles in mind, whilst others argue that it is entirely modal. This range of views can be seen by the wide variety of book and article titles addressing the subject, some of which include:

- *Tonal Structures in Early Music*
- 'The Polyphonic Magnificat of the Renaissance as a Design in Tonal Centers'
- 'Aspects of Mode in Sixteenth-Century Magnificats'
- 'Tonal Types and Modal Categories in Renaissance Polyphony'
- 'Modal Types and "Ut, Re, Mi" Tonality: Tonal Coherence in Sacred Vocal Polyphony from about 1500'
- 'Modality, Monality and Tonality in the Sixteenth and Seventeenth Centuries'
- *Tonality and Atonality in Sixteenth-Century Music*

In his large-scale study of modal theory, Meier cites numerous mid-sixteenth-century theorists who stress the importance of choosing the correct mode for a work. In the fourth book of his *Practica Musica* (published in 1556), the German theorist Hermann Fink states that:

Knowledge of the modes is absolutely necessary...For anyone who wants to compose skillfully should consider the mode itself before anything else, so that the whole business is directed according to a certain norm and rule, lest he exceed the limits and endings of the modes, or confuse the modes among themselves...For we see that the most outstanding composers have observed that principle diligently.²

Not only did modal theory instruct a composer the correct mode to choose, but also – according to Gallus Dressler – taught him how to invent motives and

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² Hermann Fink, *Practica Musica* (Wittenberg, 1556). Cited in Bernhard Meier, *The Modes of Classical Vocal Polyphony* (Broude Brothers: New York, 1988) p 24.

arrange cadences. Originally the modes were defined by the melodic fragments which were to be found in sections of plainchant. However, over time the final and range of the voice-parts became the defining characteristics.³

In several continental collections of chansons and motets, works are grouped together according to three different musical criteria: (1) whether the work includes B^b in the signature or not; (2) whether a high or low group of clefs is employed; and (3) according to the lowest note in the final vertical aggregate, whether that be in T or not.⁴ This is in contrast to many modal theorists who state that the final is always the last note in T, even if the work is not based upon a cantus firmus.

## 6.2 Methods of Investigating Modality

The majority of music that a composer of the early Tudor period would have come into contact with would have been plainchant. Plainchant formed an integral part of the liturgy every day, sung both by clergy and by musicians employed in the wealthy institutions of the time. The influence of chant on composers is evident by the use of it in their own compositions. Very few scholars dispute that chant is modal, indeed – as has already been stated – much modal theory was developed as a result of the characteristics of chant itself.⁵ In view of this it seems likely that both consciously and unconsciously composers were strongly influenced by chant as it formed a major part of a church musician's 'sound world'.

No detailed study has yet been carried out regarding Fayrfax's use of mode. Indeed, very little research has been completed concerning mode within

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³ David Hiley, *Western Plainchant: A Handbook* (Clarendon Press: Oxford, 1993) p 455.

⁴ Harold Powers, 'Tonal Types and Modal Categories in Renaissance Polyphony' p 436.

⁵ A number of twentieth-century scholars have attempted to show that chant is tonal, or that at the very least it displays certain tonal characteristics. The analyses have generally been conducted by proponents of Schenkerian theory such as Saul Novack and Felix Salzer, as discussed in the following section.

music of the early Tudor period at all.⁶ In view of this there are no developed methods for investigating modal aspects of music of this period. Two choices are available: (1) to apply existing methods used to investigate Continental music; and (2) to explore new ways of looking at mode within the chosen repertoire. My intention is to explore the ways in which mode has already been studied, and see if any methods can be applied to Fayrfax's works, before attempting to develop any new methods.

### 6.2.1 Cleffing, Signature, and Final

Harold Powers noted that continental music of the later Renaissance period does not always conform directly to the modes set out in contemporary theory. In view of this he devised a different method of classifying a work – largely based upon Hermelink's *Tonartentypen* – by taking into account the clefs used in each voice, the signature, and the final.⁷ Through various combinations of these three factors, he found that 24 'tonal types' are possible, rather than the eight church modes, or twelve modes later set out by Glarean.

A number of problems occur when attempting to classify works of the early Tudor period using Powers' methods. Studies of continental cleffing reveal that only two groups of clefs appear: 'high' or 'low'. The high group usually consists of the clefs g2 – c2 – c3 – c3 – F3, and the low of c1 – c3 – c4 – c4 – F4. Other clef combinations are by no means unknown; the lowest clef of the 'high' combination is often C4, and fourth-tone pieces are often notated in the 'natural' combination with F5 in the bassus. Within sets of modally-based compositions by composers such as Lassus, de Rore, and Palestrina, Powers

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⁶ Two studies which have dealt with this topic to some extent are: Catherine Hocking, *Cantus firmus procedures in the Eton Choirbook* (Unpubl. PhD thesis: University of Cambridge, 1995); Lisa Mackay, *Mode in the Salve regina settings of the Eton College choirbook* (Unpubl. PhD thesis: Monash University, 2002).

⁷ Harold Powers, 'Tonal Types and Modal Categories in Renaissance Polyphony'.. For Hermelink's discussion of *Tonartentypen* see: Siegfried Hermelink, *Dispositiones Modorum: Die Tonarten in der Musik Palestrinas und seiner Zeitgenossen*, (Tutzing: H. Schneider, 1960).

**Table 6.1 – Clefs, Signature and Final**

		CLEFS	CLEF GROUP	WORK	SIGNATURE	FINAL
<b>5-PART</b>		<b>g1 – c1 – c3 – c3 – c5</b>	j	<i>Eterne laudis lilium</i>	b	F
				Missa 'Albanus'	b	F
				[ <i>O Maria/Albanus deo grata</i> ]	b	F
		<b>g2 – c2 – c4 – c4 – F4</b>	k	<i>Maria plena virtute</i>	b / 2b	G
				<i>Salve regina</i>	b	G
				[ <i>Lauda vivi alpha</i> ]	b	D
				Missa 'O quam glorifica'	b	D
				Missa 'Tecum principium'	b	D
		<b>g2 – c3 – c4 – c4 – F4</b>	l	Missa 'Regali ex progenie'	b	F
		<b>g2 – c3 – c4 – c5 – F4</b>	m	Magnificat <i>Regale</i>	b	F
		<b>c2 – c4 – c5 – F4 – F5</b>	n	<i>Ave dei patris</i>	♯	D
				Magnificat 'O bone Jesu'	♯	D
Missa 'O bone Jesu'	♯			D		
[ <i>O bone Jesu</i> ]	♯			D		
<b>4-PART</b>		<b>c1 – c3 – c4 – c4</b>	p	Missa 'Sponsus amat sponsam'	b	F
		<b>c3 – c3 – c4 – c4</b>	q	<i>O lux beata trinitas</i>	♯	E
		<b>c4 – c4 – c5 – F4</b>	r	<i>Ave lumen gratie</i>	b	C

has shown that only these two groups of clefs are to be found. A detailed examination of Fayrfax's surviving works reveals that things are not so simple in England. Table 6.1 shows that a total of eight groups of clefs appear, five within the five-part works (*j-n*), and three within the four-part works (*p-r*). The clef groupings are recorded with the highest at the top and lowest at the bottom, first in the five-part works, and then within the four-part.

The second problem when using Powers' method in English music concerns transposition. In general the performing pitch of works from the Medieval and Renaissance periods has created a great deal of debate. Ledger lines were rarely used in manuscripts of the period, and so the range of the voice had to fall within the notes that were available on the stave with regard to the clef. The position of the clef could be changed within a composition, but this rarely occurs for more than one line within manuscripts. Some evidence exists to prove the exact interval of transposition, particularly in Continental music scored for voices and instruments, in which the pitch of the instrument is known and so the transposition can easily be calculated.⁸ Powers' method dictates that works appearing in different transpositions should be assigned different tonal types. However, a great deal of evidence suggests that works were not performed at written pitch, but rather a suitable pitch was chosen for the available performers.⁹ In many cases there would have been no difference between the performance pitch of works which had been transposed on paper, and so Powers' differentiation between these works would not have occurred in practice.

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⁸ See for example: Rudolf Rasch, 'Modes, Clefs, and Transpositions in the Early Seventeenth Century' in *Theorie et analyse musicales 1450-1650* (Universite Catholique de Louvain: Louvain, 2001) pp 403-432.

⁹ By comparing the pitch of works in MS sources and lute tabulatures of the same piece, it can be seen that works were not always performed at written pitch. For an example of this, citing Josquin's *Absalon fili mi*, see: Andrew Johnstone, 'High' Clefs in Composition and Performance', *EM* 34/1 (February 2006) p 38.



A number of scholars such as Judd and Rasch have built specifically upon Powers' work, whilst also drawing upon other aspects of contemporary theory. It is clear – as further scholars have pointed out – that the three aspects cited by Powers are of importance when examining any work of the period; the clefs determine the relative range of the voices, the signature can indicate transposition or inflection, and the final is important when attempting to classify the mode of the work. In view of this, I intend to address each within this chapter with regard to Fayrfax's surviving works.

Although some of Fayrfax's works are incomplete – those that appear in parentheses in Table 6.1 – it is possible to speculate as to which clefs were originally used given the existing evidence. Works in which fewest voices have been lost are obviously easier to complete. All four of the remaining voices of *Lauda vivi et alpha* share clefs with four other complete works. This suggests that the missing tenor voice of *Lauda vivi alpha* shares the same clef as well. Voices from one work in each of the 'Albanus' and 'O bone Jesu' groups have been lost. It seems reasonable to suggest that grouped works would share the same clefs. However, Table 6.1 shows that this is not the case in the 'Regali' group, the mass and Magnificat having different clefs in T. The relationship between mass and Magnificat is different from other grouped works; here the grouping is by name rather than by shared musical material. In contrast, Missa 'Albanus' and *O Maria/Albane deo grata* do share musical material, as discussed in Chapter 4. It therefore seems more likely in this case that the ranges – and hence the clefs – are the same in the two missing voices of the motet as they are in the mass. Although only one voice of the motet *O bone Jesu* survives, the reasoning as was stated for the 'Albanus' group can be applied to the 'O bone Jesu' group, particularly as here the same clefs are used for the Magnificat as they are for the mass. The incomplete work that presents the greatest problem in this regard is *Gaude flore virginali*. Only one voice

survives – on this occasion B – and as no material is shared with another work, it is difficult to ascertain which clefs were originally used for the other voices. In view of this, it has been omitted from the table and assigned a clef group x. Sections from all voices of the fragmentary works Missa ‘Sponsus amat sponsam’ and *Ave lumen gratie* survive, and so determining the clefs used within them is not a problem.

The reasons for the inclusion of B^b within chant and polyphony has created a considerable amount of debate by sixteenth-century and modern day modal theorists. Some scholars – such as Saul Novack – have argued that the inclusion of B^b in the Lydian mode indicates a move towards tonality.¹⁰ However, B^b was frequently included in chant within any mode for inflection. Glarean considered that the presence of a B^b in a work could only indicate transposition, and as a result, all of the modes with F as a final and B^b signature were reclassified as Ionian or Hypoionian. Having done this, he could not find any existing examples of the Lydian mode to include in his treatise, so these had to be specifically written for the purpose by the composer Gregory Meyer.¹¹

The majority of Fayrfax’s surviving works have a signature of one flat, and the others no signature. However, *Maria plena virtute* follows neither scheme; TR, M, and T have a signature of one flat, and CT and B, two flats. Here the flats have two different functions; the first is for transposition, and the second for inflection. Two other works also include a signature to indicate transposition: *Salve regina* and *Ave lumen gratie*. I will examine this in more detail in the following section. Discounting the three transposed works, the remaining compositions can be split into three primary groups taking into account the relationship between signature and final: (1) one flat and final F; (2) one flat and final D; and (3) no signature and final D.

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¹⁰ For example, see: Saul Novack, ‘Guillaume Dufay: *Alma redemptoris mater* (II)’ in Mark Everist (ed.), *Models of Musical Analysis: Music before 1600* (Blackwell: Oxford, 1992) p 94.

¹¹ Clement A. Miller (trans.), *Heinrich Glarean, Dodecachordon* (MSD 6: Rome, 1965).

### 6.2.2 Mode, Range and Final

Determining the mode of a work is a complex process. Although a great deal of modal theory survives, not all of it can be applied to Fayrfax's works. Calculating the order in which the tones and semitones fell in relation to the final was a common method of identifying the mode of a work, particularly using the twelve modes proposed by Glarean. However, as previously discussed, it seems that in practice composers never actually used the Ionian and Hypoionian modes. In addition, if the fact that Glarean's modal theory failed to acknowledge that signatures could be included for inflection is also taken into account, then it becomes clear that this method is not appropriate when studying early Tudor polyphonic works.

Having eliminated the four additional modes advocated by Glarean, eight remain. In order to avoid confusion with contemporaneous continental modal theory, and the tone/semitone ordering that is frequently implied by their Greek toponymic designates, I intend to classify Fayrfax's works by the nomenclature derived from Greek ordinal numbers: protus, deuterus, tritus, tetrardus.¹² These modes begin on the tetrachord of finals D, E, F, and G respectively, and can be split further into two tones – authentic and plagal – giving the eight available tones, as shown in Table 6.2. The classification of a work into its authentic or plagal tone is dependent upon the range – or ambitus – of the voices. Within the plagal tones the final falls towards the middle of the ambitus, and the authentic tones usually do not extend more than a step lower than the final. Within traditional modal theory the range of T dictated the tone of the work as a whole. The primary reason for this was that T most frequently carried the cantus firmus, and thus influenced the surrounding voices most strongly.

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¹² These terms have already been encountered in my discussion of the surviving treatises of Aurelian and Hucbald in Chapter 2.

**Table 6.2 – Traditional Church Modes and Tones**

MODE	FINAL	TONE
Protus	D	First
		Second
Deuterus	E	Third
		Fourth
Tritus	F	Fifth
		Sixth
Tetrardus	G	Seventh
		Eighth

Within his surviving works Fayrfax uses all four modes: nine works are protus, one deuterus, seven tritus, and one tetrardus. In order to identify the tone of each work, the range of T must be examined. While doing so I will also investigate the ranges of the other voices to see whether they conform to the octave species set out by contemporary modal theorists. The ranges of all of the vocal parts in Fayrfax's surviving repertoire are recorded in Tables 6.3(a)-(g).

Within all of the surviving works, Fayrfax exceeds the traditional ambitus. On the whole, the range is increased upwards by one or two steps – although occasionally by three – and downwards, but by never more than one step. In contrast, the lower level of the total ambitus set out by continental theorists is not always reached. This only ever occurs in TR – for example in Missa 'Albanus' and Missa 'Tecum principium' – in which it lies one step above the lower limit. The range of T is adhered to most strictly within the masses, exceeding the ambitus by only one step on any occasion. Although this might be expected in the masses in which T carries a cantus firmus, it is also apparent

**Table 6.3(a) – Vocal Ranges: Missa ‘Albanus’**

	TR	M	CT	T	B
<b>Gloria</b>	f ¹ -a ²	c ¹ -e ²	f ⁰ -a ¹	f ⁰ -g ¹	A ⁰ -c ⁰
<b>Credo</b>	g ¹ -a ²	c ¹ -e ²	f ⁰ -a ¹	f ⁰ -g ¹	A ⁰ -d ⁰
<b>Sanctus/Benedictus</b>	f ¹ -a ²	c ¹ -e ²	f ⁰ -a ¹	f ⁰ -g ¹	A ⁰ -c ⁰
<b>Agnus</b>	g ¹ -a ²	c ¹ -e ²	f ⁰ -a ¹	e ⁰ -g ¹	A ⁰ -d ⁰

**Table 6.3(b) – Vocal Ranges: Missa ‘O bone Jesu’**

	TR	M	CT	T	B
<b>Gloria</b>	g ⁰ -c ²	d ⁰ -f ¹	A ⁰ -c ¹	G ⁰ -a ⁰	D ⁰ -d ⁰
<b>Credo</b>	a ⁰ -c ²	d ⁰ -f ¹	A ⁰ -c ¹	G ⁰ -a ⁰	D ⁰ -e ⁰
<b>Sanctus/Benedictus</b>	a ⁰ -c ²	e ⁰ -f ¹	G ⁰ -c ¹	G ⁰ -a ⁰	D ⁰ -e ⁰
<b>Agnus</b>	g ⁰ -c ²	d ⁰ -f ¹	A ⁰ -c ¹	G ⁰ -a ⁰	D ⁰ -f ⁰

**Table 6.3(c) – Vocal Ranges: Missa ‘O quam glorifica’**

	TR	M	CT	T	B
<b>Gloria</b>	d ¹ -f ²	a ⁰ -c ²	c ⁰ -f ¹	c ⁰ -d ¹	F ⁰ -a ⁰
<b>Credo</b>	d ¹ -f ²	g ⁰ -c ²	c ⁰ -f ¹	c ⁰ -d ¹	F ⁰ -b ⁰
<b>Sanctus/Benedictus</b>	d ¹ -f ²	a ⁰ -c ²	c ⁰ -f ¹	c ⁰ -d ¹	F ⁰ -b ⁰
<b>Agnus</b>	d ¹ -f ²	g ⁰ -c ²	c ⁰ -f ¹	c ⁰ -d ¹	F ⁰ -a ⁰

**Table 6.3(d) – Vocal Ranges: Missa ‘Regali ex progenie’**

	TR	M	CT	T	B
<b>Gloria</b>	d ¹ -f ²	f ⁰ -a ¹	c ⁰ -e ¹	c ⁰ -d ¹	F ⁰ -a ⁰
<b>Credo</b>	c ¹ -f ²	f ⁰ -a ¹	c ⁰ -f ¹	c ⁰ -d ¹	F ⁰ -a ⁰
<b>Sanctus/Benedictus</b>	d ¹ -f ²	f ⁰ -a ¹	c ⁰ -f ¹	c ⁰ -d ¹	F ⁰ -a ⁰
<b>Agnus</b>	c ¹ -f ²	f ⁰ -a ¹	c ⁰ -f ¹	c ⁰ -d ¹	F ⁰ -a ⁰

**Table 6.3(e) – Vocal Ranges: Missa ‘Sponsus amat sponsam’**

	TR	M	CT	T	B
Gloria		c ¹ -d ²	f ⁰ -a ¹	c ⁰ -d ¹	F ⁰ -a ⁰
Credo		c ¹ -d ²	f ⁰ -a ¹	c ⁰ -d ¹	F ⁰ -b ⁰
Sanctus/Benedictus					F ⁰ -b ⁰
Agnus					F ⁰ -b ⁰

**Table 6.3(f) – Vocal Ranges: Missa ‘Tecum principium’**

	TR	M	CT	T	B
Gloria (V1)	d ¹ -f ²	a ⁰ -b ¹	c ⁰ -f ¹	c ⁰ -d ¹	F ⁰ -b ⁰
Gloria (V2)	e ¹ -f ²	a ⁰ -b ¹	c ⁰ -f ¹	c ⁰ -d ¹	F ⁰ -b ⁰
Credo	d ¹ -f ²	a ⁰ -c ²	c ⁰ -f ¹	c ⁰ -d ¹	F ⁰ -a ⁰
Sanctus/Benedictus	d ¹ -f ²	g ⁰ -b ¹	c ⁰ -f ¹	c ⁰ -d ¹	F ⁰ -a ⁰
Agnus	d ¹ -f ²	g ⁰ -c ²	c ⁰ -f ¹	c ⁰ -d ¹	F ⁰ -a ⁰

**Table 6.3(g) – Vocal Ranges: Magnificats and Motets**

WORK	TR	M	CT	T	B
<i>Ave dei patris</i>	a ⁰ -c ²	e ⁰ -f ¹	A ⁰ -c ¹	A ⁰ -b ⁰	D ⁰ -f ⁰
<i>Ave lumen gratie</i>		c ⁰ -f ¹	d ⁰ -e ¹	B ⁰ -d ¹	G ⁰ -g ⁰
<i>Eterne laudis liliu</i>	f ¹ -a ²	c ¹ -e ²	e ⁰ -a ¹	e ⁰ -g ¹	B ⁰ -d ¹
<i>Gaude flore virginale</i>					F ⁰ -a ⁰
<i>Lauda vivi alpha</i>	d ¹ -f ²	g-c ²	c ⁰ -f ¹		F ⁰ -a ⁰
Magnificat ‘O bone Jesu’	g ⁰ -c ²	e ⁰ -f ¹	A ⁰ -c ¹	G ⁰ -b ⁰	D ⁰ -f ⁰
<i>Magnificat Regale</i>	d ¹ -f ²	g ⁰ -a ¹	c ⁰ -e ¹	c ⁰ -d ¹	F ⁰ -a ⁰
<i>Maria plena virtute</i>	d ¹ -g ²	g ⁰ -c ²	d ⁰ -f ¹	c ⁰ -e ¹	G ⁰ -b ⁰
<i>O bone Jesu</i>		d ⁰ -f ¹			
<i>O lux beata trinitas</i>		g ⁰ -c ²	c ⁰ -f ¹	c ⁰ -d ¹	E ⁰ -a ⁰
<i>O Maria/Albanus deo grata</i>		c ¹ -e ²	f ⁰ -a ¹		A ⁰ -d ¹
<i>Salve regina</i>	d ¹ -f ²	g ⁰ -c ²	c ⁰ -g ¹	c ⁰ -f ¹	F ⁰ -c ¹

in Missa 'O bone Jesu' which is not thought to be based upon a pre-existing line in T.

Although the ranges do not always conform to traditional modal theory, there is not enough variation to make identification of authentic or plagal tones impossible. A number of patterns can be seen in terms of the use of these tones within the complete surviving five-part works. In all cases, both CT and T use the same ambitus, and therefore fall within the same tone. When these two voices have the authentic tone, TR does as well, and M and B have the plagal tone. The opposite arrangement also occurs; when TR, CT, and T are plagal, M and B are authentic. It is therefore clear that while the clef combinations differ from the continental archetypes, the principle governing the voice ranges is the same. In view of this there is no problem in identifying the overall tone of the work, if this is taken to be the tone of T. Table 6.4 records the mode and tone of each of Fayrfax's surviving works, and also includes the tonal type, based on the discussion of Powers' method above. Although Powers' method of classification is not practical with regard to the early Tudor repertoire, it is interesting to see how the two methods compare, and for this reason has been included.

**Table 6.4 – Tonal Type, Mode and Tone**

WORK	TONAL TYPE	MODE	TONE
<i>Ave dei patris</i>	♯ – n – D	Protus	2
<i>Ave lumen gratie</i>	♭ – t – C	Tetrardus	7
<i>Eterne laudis liliium</i>	♭ – j – F	Tritus	5
<i>Gaude flore virginale</i>	♭ – x – F	Tritus	6
<i>Lauda vivi alpha</i>	♭ – (k) – D	Protus	1
Magnificat 'O bone Jesu'	♯ – n – D	Protus	2
Magnificat <i>Regale</i>	♭ – m – F	Tritus	6
<i>Maria plena virtute</i>	♭ – k – G	Protus	2
Missa 'Albanus'	♭ – j – F	Tritus	5
Missa 'O bone Jesu'	♯ – n – D	Protus	2
Missa 'O quam glorifica'	♭ – k – D	Protus	1
Missa 'Regali ex progenie'	♭ – l – F	Tritus	6
Missa 'Sponsus amat sponsam'	♭ – r – F	Protus	6
Missa 'Tecum principium'	♭ – k – D	Protus	1
<i>O bone Jesu</i>	♯ – (n) – D	Protus	2
<i>O lux beata trinitas</i>	♯ – s – E	Deuterus	4
<i>O Maria/Albanus deo grata</i>	♭ – (j) – F	Tritus	5
<i>Salve regina</i>	♭ – k – G	Protus	2

Of the eight tones possible, Fayrfax uses only six within his surviving works; the third and eighth tones not being employed. All except two of works are composed in the protus and tritus modes. The two not falling within these modes are the small-scale four-part motets, *O lux beata trinitas* and *Ave lumen gratie*, composed in fourth tone and seventh tone respectively.

Within the cantus firmus masses the tone of the work was governed by the presence of the chant in T. Not only would this have influenced the modal aspects of each work, but also the choice of cadential pitches, and in some cases, the temporal placement of them. Table 6.5 shows the final, mode and tone of the chant used by Fayrfax within these masses.



**Table 6.5 – Tones of Plainchant used in Masses by Fayrfax**

PLAINCHANT	FINAL	MODE	TONE	CHROMATIC INFLECTIONS
Albanus domini laudans	F	Tritus	5	
O quam glorifica	D	Protus	1	
Regali ex progenie	F	Tritus	6	B ^b
Sponsus amat sponsam	F	Tritus	6	
Tecum principium	D	Protus	1	B ^b

Table 6.5 reveals that on all occasions the tone of the chant is replicated in T of the corresponding mass. The tones of *Magnificat Regale* and *O Maria/Albane deo grata* were almost certainly decided upon by the inclusion of the pre-existing chant in Missa ‘Regali ex progenie’ and Missa ‘Albanus’ respectively. In a similar way, the three works in the ‘O bone Jesu’ group are also use the same tone. Although a reason for the choice of the second tone in the motet is difficult to identify, it seems likely that the mass and Magnificat employ the same tone because of the musical material they share with *O bone Jesu*.

### 6.3 Cadential Planning

Sixteenth-century theorists stated that cadences had a stylistic rather than tonal function; an articulating effect drawing a work – or section of a work – to a close. A hierarchy of pitches within plainchant was formed from the finals and psalm tones identified within theoretical writing. A clear hierarchy of cadential degrees can be seen throughout the history of modal theory, from the classification of plainchant to that of polyphony in the second half of the sixteenth century. Examples of the latter include Dressler's *Praecepta musica poetica* (1563), Pontio's *Ragionamiento di musica* (1588), and Montanos' *Arte de música théorica y práctica* (1592).¹³

In view of the lack of surviving early Tudor theory, it is impossible to see whether theorists stated that a clear hierarchy of cadential degrees existed within late fifteenth- and early sixteenth-century polyphonic works composed in England. Within this section I intend to examine whether patterns are present in Fayrfax's choice of cadential degrees, and if from this, a set of rules concerning early Tudor polyphony can be put together given the surviving musical evidence. First of all it is important to specify which types of cadence will be studied. Within early Tudor works cadences are used by composers in four primary ways: (1) to bring a major section to a close; (2) to change from one pattern of scoring to another; (3) to bring a phrase or section of text to a close; and (4) to prolong a section without cadencing onto a primary degree. Within this section I will deal with the cadential pitches used for the first three types – the fourth type will be dealt with to some extent in Chapter 8.

The first three types of cadential degree share certain characteristics that make identification easier. The first of these – as has already been mentioned – is their position within the work, usually at the ends of sections. The second is

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¹³ Miguel A. Roig-Francolí, 'Modal Paradigms in Mid-Sixteenth-Century Spanish Instrumental Composition: Theory and Practice in Antonio de Cabezón and Tomás de Santa María', *JMT* 38/2 (Autumn 1994) p 254.



The works that survive incomplete present a number of problems when studying Fayrfax's cadential practice. Whilst in many cases it is easy to identify cadential degrees at the ends of major sections – particularly if the bass survives and has the 'root' of the final vertical aggregate – in other places it is not so clear. Where a number of voices are missing, the actual placement of the cadences within the free-flowing counterpoint is often obscured, and as a result the degree itself cannot be identified. In view of this, the works that do not survive in a complete state can only be used to examine cadential degrees at the end of major sections, rather than within the overall polyphonic framework.

Tables 6.6(a)-(c) show the proportion of cadential degrees used within each work, or in the case of the masses, within each movement. The works are grouped by mode; the masses appear in the first two tables, and the Magnificats and motets are grouped together in the final table. Within each table, the figures are rounded up to the nearest whole percentage. A small box placed within each cell records the frequency of the degree, and an asterisk indicates that the work survives in a transposed form.

I will begin by examining cadential degrees used at the ends of the major sections, particularly within the masses. The reasons for doing so are the same as those identified in Chapter 3: (1) they provide four relatively independent large-scale sections of polyphony using the same mode; and (2) they were written at the same time – although this is not necessarily the case in the Gloria of Missa 'Tecum principium'. In view of this, it seems likely that patterns will be easiest to spot within this compositional type.

Within the masses composed in the first tone, only three cadential pitches are used:  $\hat{1}$ ,  $\hat{4}$ , and  $\hat{6}$ . Missa 'O quam glorifica' has the simplest cadential structure. Here  $\hat{1}$  is used at the end of each major section, apart from the  $\bigcirc$  section of the Credo where  $\hat{4}$  is used. A similar type of pattern can be seen in

Table 6.6(a) – Cadential Degrees: Protus Masses

MODE	TONE	MASS	MOVEMENT	CADENTIAL DEGREES OF MAJOR SECTIONS			% / FREQUENCY OF CADENTIAL DEGREES						
				○	◡	○	^1	^2	^3	^4	^5	^6	^7
PROTUS	1-D	'Tecum principium'	Gloria (V1)	^4	^1		32 8	0	16 4	16 4	8 2	8 2	20 5
			Gloria (V2)	^4	^1		36 9	0	12 3	12 3	12 3	8 2	20 5
			Credo	^6	^1		36 8	0	18 4	9 2	9 2	18 4	9 2
			Sanctus	^4	^1		38 5	0	8 1	15 2	15 2	15 2	8 1
			Agnus	^4	^1		33 4	0	25 3	17 2	17 2	0	8 1
	1-D	'O quam glorifica'	Gloria	^1	^1		36 4	0	0	36 4	0	18 2	9 1
			Credo	^6	^1		33 6	0	11 2	17 3	6 1	6 1	28 5
			Sanctus	^1	^1		70 7	0	0	20 2	10 1	0	0
			Agnus	^1	^1		50 5	0	10 1	20 2	10 1	0	10 1
	2-D	'O bone Jesu'	Gloria	^5	^1		33 6	11 2	11 2	0	33 6	0	11 2
			Credo	^3	^1		27 6	9 2	23 5	9 2	23 5	0	9 2
			Sanctus	^5	^1		38 5	8 1	15 2	15 2	23 3	0	0
Agnus			^3	^1		55 6	9 1	9 1	18 2	9 1	0	0	

Table 6.6(b) – Cadential Degrees: Tritus Masses

MODE	TONE	MASS	MOVEMENT	CADENTIAL DEGREES OF MAJOR SECTIONS			% / FREQUENCY OF CADENTIAL DEGREES						
				○	◐	◑	^1	^2	^3	^4	^5	^6	^7
TRITUS	5-F	'Albanus'	Gloria	^5	^1	^1	46 12	8 2	4 1	4 1	12 3	26 7	0
			Credo	^1	^5	^1	35 9	4 1	8 2	8 2	23 6	23 6	0
			Sanctus	^3	^1		57 8	0	7 1	14 2	14 2	7 1	0
			Agnus	^5	^1		38 6	13 2	6 1	6 1	25 4	13 2	0
	6-F	'Regali ex progenie'	Gloria	^1	^1		59 10	0	12 2	6 1	12 2	12 2	0
			Credo	^4	^1		72 13	0	0	11 2	11 2	6 1	0
			Sanctus	^1	^5	^1	61 11	6 1	0	0	22 4	11 2	0
			Agnus	^4	^1		71 10	7 1	0	7 1	0	14 2	0
	6-F	'Sponsus amat sponsam'	Gloria	^1	^1								
			Credo		^1								
			Sanctus		^1								
			Agnus	^6 [6]	^1								

Table 6.6(c) – Cadential Degrees: Magnificats and Motets

MODE	TONE	WORK	CADENTIAL DEGREES OF MAJOR SECTIONS			%FREQUENCY OF CADENTIAL DEGREES						
			○	◐	◑	^1	^2	^3	^4	^5	^6	^7
PROTUS	1-D	<i>Lauda vivi alpha</i>	^5	^1		32 11	0	23 8	14 5	17 6	3 1	11 4
	2-D	<i>Ave dei patris</i>	^2	^1		43 12	13 4	17 5	10 3	10 3	0	7 2
	2-D	Magnificat 'O bone Jesu'	^1	^1	^1	57 12	9 2	13 3	8	22 5	0	0
	2-D	<i>O bone Jesu</i>	[5]	[1]								
	2*-G	<i>Maria plena virtute</i>	^5	^1		42 15	11 4	6 2	8 3	25 9	3 1	6 2
	2*-G	<i>Salve regina</i>	^4	^1	^1	47 9	0	16 3	26 5	0	0	11 2
DEUTERUS	4-E	<i>O lux beata trinitas</i>	^1									
TRITUS	5-F	<i>O Maria/Albane Deo grata</i>	^1	^1		41 15	3 1	24 9	3 1	22 8	8 3	0
	5-F	<i>Eterne laudis lillum</i>	^1	^1		39 12	16 5	3 1	0	32 10	10 3	0
	6-F	<i>Gaude flore virginale</i>	[4]	^1								
	6-F	Magnificat Regale	^1	^1	^1	92 22	0	0	0	4 1	4 1	0
TETRARDUS	7*	<i>Ave lumen gratie</i>	G									

Missa 'Tecum principium' where each of the final sections end on  $\hat{1}$ , whilst the first sections of the Gloria, Sanctus, and Agnus end on  $\hat{4}$ , and the Credo on  $\hat{6}$ . The seemingly 'foreign' degree in Missa 'Tecum principium' and Missa 'O quam glorifica' is not confined to the Credo in the other masses. The fifth-tone Missa 'Albanus' follows a similar pattern to the two first-tone masses previously mentioned. However, a number of differences occur in view of the fact that the Gloria and Credo have an additional  $\bigcirc$  section at the end of each movement. If  $\hat{5}$  and  $\hat{1}$  are taken as a block together – as they appear in the Agnus Dei – then it can be seen that an extra  $\hat{1}$  is added in the movements with three major sections; before the  $\hat{5} - \hat{1}$  block in the Credo, and afterwards in the Gloria. The Sanctus follows a different scheme, using  $\hat{3}$  at the conclusion of the  $\bigcirc$  section.

Missa 'O bone Jesu' and Missa 'Regali ex progenie' also share a number of characteristics in terms of cadential planning. Within Missa 'O bone Jesu' an alternating pattern can be seen between the cadential pitches at the end of major sections. The Gloria and Sanctus follow a  $\hat{5} - \hat{1}$  pattern, whilst the final pitches in the Credo and Agnus are  $\hat{3} - \hat{1}$ . A similar alternating pattern is found in Missa 'Regali ex progenie'; the primary cadential pitches of the Credo and Agnus are  $\hat{4} - \hat{1}$ , whilst in the Gloria both are  $\hat{1}$ . The scheme in the Sanctus follows a slightly different pattern in view of the additional  $\bigcirc$  section with which the movement closes. Rather than adhering to the strict pattern in which all sections close on  $\hat{1}$ , the  $\bigcirc$  sections ends on  $\hat{5}$ , thereby forming a  $\hat{1} - \hat{5} - \hat{1}$  pattern, the  $\hat{5}$  cadential pitch being the only one of its kind within the mass as a whole.

The choice of cadential pitch at the ends of major sections is frequently determined by the chant in the cantus firmus masses, but the final note of the chant does not always provide the 'root' of the final vertical aggregate. For example, in Missa 'Tecum principium' both portions of the segmented chant – *Bx* and *By* – close on  $d^0$  in T, and as a result this pitch must be included in the



final vertical aggregate at the end of every major section. As has already been stated, Fayrfax uses pitches  $\hat{1}$ ,  $\hat{4}$ , and  $\hat{6}$  at the ends of these sections. Whilst  $\hat{1}$  does correspond with the final of the chant, in triadic terms  $d^0$  is used as the fifth and third in the final vertical aggregate on cadential pitches  $\hat{4}$  and  $\hat{6}$  respectively. The relationship between cadential pitch and cantus firmus in Missa 'Regali' is not as close-knit. As discussed in Chapter 4, the segmentation occurs in two forms: it is either split into two (*Cx* and *Cy*); or into three (*Cp*, *Cq*, and *Cr*). The final pitch of the chant is  $f^0$  in all segments except *Cq* where it is  $g^0$ . Rather than attempting to integrate  $g^0$  into the final vertical aggregate in the Sanctus and Agnus Dei – the only two movements in which this type of segmentation occurs – Fayrfax inserts an additional  $f^0$  after the chant, thereby avoiding a cadential pitch on  $g^0$ , or another vertical aggregate to which it is common.

Similar cadential pitches found in the masses are also used at the ends of major sections in the Magnificats and motets. The last sections always adhere to the final  $\hat{1}$  used to identify the mode and degree, but the tone of the work seems not to influence the choice of other major cadential pitches. A  $\hat{5} - \hat{1}$  pattern is found in the first-tone *Lauda vivi alpha*, and the second-tone works *O bone Jesu* and *Maria plena virtute*; a  $\hat{4} - \hat{1}$  pattern occurs in the second-tone *Salve regina* and sixth-tone *Gaude flore virginali*; and  $\hat{1}$  is used at all major cadences in the first-tone Magnificat 'O bone Jesu', the fifth-tone works *O Maria deo grata* and *Eterne laudis liliium*, and the sixth-tone *Magnificat Regale*. One work that seems unusual in its cadential structure is *Ave dei patris*. Composed in two major sections, the final  $\odot$  section closes on  $\hat{1}$  – as expected – but  $\circ$  ends on  $\hat{2}$ .

A number of general patterns can also be identified in the choice of cadential degrees at other points within the surviving works. Within the protus mode, none of the first-tone works uses  $\hat{2}$  at all, and the only surviving second-

tone mass – Missa ‘O bone Jesu’ – uses  $\hat{2}$ , but not  $\hat{6}$ . Both Magnificats include a particularly high proportion of cadences on  $\hat{1}$ . Not only is the percentage high – 57% and 92% in Magnificat ‘O bone Jesu’ and *Magnificat Regale* respectively – but also the total number of cadences. The reason for both of these facts is the highly sectionalized nature of the Magnificat settings in view of their alternatim structure. The high number of cadences is dictated by the inclusion of plainchant verses, and the high proportion of cadences on  $\hat{1}$  is probably owing to the transition from the end of the polyphony to the start of the plainchant. Fayrfax makes no use of cadential degrees on  $\hat{7}$  within the surviving tritus works. As only one work survives in each of the deuterus and tetrardus modes, no patterns can be identified within these modes.

Whilst a number of general trends can be identified in Fayrfax’s choice of cadential pitches, several works lack the consistency that would imply that a set of theoretical rules was followed. For example, within the Credo of Missa ‘O quam glorifica’ the majority of pitches fall on  $\hat{1}$  and  $\hat{7}$ , the rest being spread over degrees  $\hat{3}$ ,  $\hat{4}$ ,  $\hat{5}$ , and  $\hat{6}$ , whilst in the Sanctus 70% of pitches are  $\hat{1} - \hat{4}$  and  $\hat{5}$  being the only others used. The total number of cadences within individual movements seems not to have any bearing upon the spread of pitches within Missa ‘O quam glorifica’ either. Both the Sanctus and Agnus Dei have ten cadential points defined by the criteria given above, and yet five different pitches are used in the Agnus, and only three in the Sanctus.¹⁵

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¹⁵ While the findings on cadence degrees in Fayrfax’s works are inconclusive, they do share characteristics with works by other early Tudor composers. A survey of Magnificats and motets in two of the most important contemporary primary sources – the Eton Choirbook (c. 1500) and the Lambeth and Caius Choirbook pair (1520s) – reveal the same ‘pre-tonal’ nature of cadential degrees. The predominance of first degree cadences at major structural points – changes in scoring, and ends of sections – in Ludford’s Magnificat ‘Benedicta’ (contained in Lambeth and Caius) can be explained by the presence of the cantus firmus and the frequent transition to the plainchant verses of the text. The only other degrees used are the third and fifth as they are consonant with the final of each cantus firmus phrase. Stourton’s motet *Ave Maria ancilla trinitatis* (also from Lambeth and Caius) uses the same three cadential degrees – first, third, and fifth. Whilst the presence of the cantus firmus in T explains this to some extent, the cadential degrees are also restricted in the semichoir sections where the cantus firmus is not employed. The extensive use of first degree cadences in Cornysh’s Magnificat (from Lambeth and Caius)

## 6.4 Conclusion

Within contemporary continental music theory, mode is one of the most widely discussed issues, covering the way in which the modes are formed, and the modal properties of both plainchant and polyphony. Although this is the case, there are a number of fundamental conceptual problems that make its application to early Tudor polyphonic works problematic. In addition, twentieth-century studies of mode have concentrated more specifically on continental works – early Tudor vocal polyphonic having been almost entirely neglected. It has been demonstrated that the methods employed by scholars more recently cannot be used as an analytical tool with regard to Fayrfax's works.

Given the repertoire examined within this study, it seems highly unlikely that Fayrfax employed the continental concept of modal affect. Instead, in many cases the pre-existing material upon which the work was based governed the choice of mode, be that plainchant, or a previously composed polyphonic model. Unfortunately an insufficient sample size remains within Fayrfax's surviving works in order to identify a strict modal system employed by early Tudor composers.

Within the masses it is possible to identify two types of cadential planning at the ends of major sections: (1) an alternating pattern – as seen in 'O bone Jesu' and 'Regali ex progenie' (although the latter is altered slightly given the added ○ final section); and (2) the same pattern of cadential degrees is used for all but one movement – 'Tecum principium', 'O quam glorifica', and 'Albanus'. Again, many of these are determined by the presence of a cantus

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can again be explained by the relationship between polyphonic and plainchant verses. As in the Ludford and Stourton works already discussed, Cornysh uses only three cadential degrees both in the Magnificat – first, fourth, and seventh – and in his four-voice motet from the Eton Choirbook, *Ave Maria, mater Dei* – first, fifth, and seventh. Whilst the use of the seventh degree cadence might seem unusual, it has already been encountered in many of Fayrfax's works. A greater range of cadential degrees can be found in Davy's *Stabat mater* from the Eton Choirbook. In this work the composer makes use of cadences on the first, second, third, fourth, and fifth degrees.

firmus, but with the addition of cadential extensions – as demonstrated in Missa 'Regali ex progenie' – Fayrfax is able to manipulate the polyphony to a different cadential degree if required. A number of trends can be seen in the choice of other cadential degrees. Whilst some theories can be put forward for these choices, in the majority of cases the reasons remain unclear.

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## CHAPTER 7: Texture and Tessitura

### 7.1 Introduction

The term 'texture' is most commonly used to explain the physical properties, both tactile and visual, of a solid object. A wide-ranging vocabulary, including words such as 'thin', 'dense', 'rough', and 'smooth', is frequently used in this regard. Art critics have been successful in investigating the difference between the physical properties of a painting and the effects that they produce.¹ Attempting to describe sonic textures is much more problematic. The physical properties of sonic textures can be analysed by obtaining graphs of the sound waves, but this merely substitutes a visual representation for an aural representation. For a detailed analytical interrogation of texture within early Tudor works – and the structural function that it plays within it – this is not an appropriate technique to pursue. Although the concept of texture is widely used by musicians in English-speaking countries, no equivalent word exists in French, German, or Italian.²

Dunsby has noted that in formal terms, the concept of musical texture within the academy was not given much attention before the middle of the twentieth century.³ Within musical circles, the term originally came about through critical writing in an attempt to describe features of works composed in the early part of the twentieth century. This was particularly true of post-tonal music, which – as is the case with early Tudor music now – required a new analytical approach, and thus a new critical and analytical vocabulary. The

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¹ Richard Shiff, 'Constructing Physicality', *Art Journal*, 50/1 (Spring 1991) pp 42–7.

² Jonathan Dunsby, 'Considerations of Texture', *Music & Letters*, 70/1 (Feb 1989) p 46.

³ Loc. cit.

linguistic discourse about musical texture still heavily relies upon words used in order to describe physical properties.

Within this chapter I will examine the ways in which Fayrfax employs different textures in his works by combining different voices, and how texture itself can be understood as a structural/formal determinant. The primary way in which early Tudor composers provide textural variety and contrast within their works is through the choice of scoring. Two aspects will be considered in this regard: (1) the number of voices used in the work as a whole – one of the most important pre-compositional choices made by a composer of the period; and (2) the changes of scoring within works – one of the main structural features of these works. I will examine how Fayrfax's surviving compositions are constructed through the variation of tutti and semichoir sections and see whether any patterns emerge. I intend to investigate the different groupings of voices employed, whether any particular groupings/patterns are favoured and why, and how dense and sparse textures are juxtaposed by employing different combinations of voices and to what end.

A further issue to be considered is the transition between changes in scoring and the overlapping effect that can occur during the transition from one scoring to the next. In the case of the masses I will investigate whether there are any similarities in scoring between each movement. In addition to investigating the way in which individual masses share similar patterns of scoring, I will show how all of the masses share certain textural characteristics.

## 7.2 Scoring

Scoring is one of the primary ways in which a work of the early Tudor period is structured. The vast majority of Fayrfax's extant sacred works were composed for five voices; only one mass (Missa 'Sponsus amat sponsam') and a few of

the small-scale motets are scored for four voices. The institution for which a work was written most probably governed the choice of voices employed within it. If it is assumed at this stage that the majority of Fayrfax's works were written with the Chapel Royal in mind, the composer would most probably have had at his disposal a choir which consisted of around 10 to 12 boys and 15 to 20 men.⁴

### 7.2.1 Combinations and patterns in scoring

In order to examine the frequency with which Fayrfax uses different scorings I have only used the works that survive complete. In the case of incomplete motets it is often possible to speculate with some degree of certainty which of the non-extant voices should be singing, but there are occasions where several combinations are possible. Of the surviving works composed in four parts, both the Missa 'Sponsus amat sponsam' and motet *Ave lumen gratie* are incomplete, and the only other work, the motet *O lux beata trinitas*, is scored for all four voices throughout. As a result, too few complete four-part works survive for any characteristic patterns to be identified with confidence. I have therefore chosen to focus only upon the five-part works. Of the eleven complete works in this category, five are masses, two are Magnificats, and four are motets. Charts 7.1(a)-(f), shown in Appendix 2, show the scoring of the complete five-part masses and motets.⁵ Black sections indicate *tempus perfectus* and grey, *tempus imperfectus*. The scale is in semibreves – apart from that for Missa 'O quam glorifica', the reasons for which are discussed below.

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⁴ Kisby, *The Royal Household Chapel in Early-Tudor London, 1485-1547* (Unpubl. PhD thesis: University of London, 1996) pp 71-5 and 312-23.

⁵ See Volume 2.

Thirty-one combinations of voices are possible in a work containing five parts.⁶ However, this assumes that the composer uses each voice without any support from the others, something which a survey of repertoire from the early Tudor period shows does not occur.⁷ Therefore only 26 combinations are possible. Tables 7.1(a)-(d) show the total number of possible combinations of voices and the frequency with which they occur in each work. These tables reveal that three-part writing predominates in Fayrfax's surviving compositional output. Over half of all sections are trio semi-choir sections of varying combinations, followed by tutti sections, duets, and finally – with the fewest number of occurrences – by quartets. Fayrfax uses 21 of the possible 26 scoring combinations; all except one of the duets and trios are used, whilst only two of the five quartets are employed.

The most frequently used duets are those for TR/B – which occurs six times – and for TR/CT, and CT/B, – both of which are used four times. The distribution of the first two combinations is particularly interesting; the first is only to be found in the masses – appearing in all except one – and *Magnificat Regale*, whilst the second only features in the motets. The only two-part group not to be used is that for M/B.

Only one of the three-part groups is also not used, M/CT/B. The trio combination of the bottom three voices – CT/T/B – appears in all of Fayrfax's complete five-part works, and is the most frequently occurring trio, followed by

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⁶ This can be calculated using the binomial coefficient, or the number of ways of picking  $k$  unordered outcomes from  $n$ , represented within mathematical probability as  ${}_n C_k$ . In this case,  $n$ =total number of voices, and  $k$ =the number of voices that can be employed at one particular time. The total number of vocal combinations with a five-part polyphonic work ( $T$ ) can be calculated using  $T = {}_5 C_5 + {}_5 C_4 + {}_5 C_3 + {}_5 C_2 + {}_5 C_1$ , where:

$${}_n C_k = \frac{n!}{k! (n-k)!}$$

For more information regarding permutations and combinations see: J. V. Uspensky, *Introduction to Mathematical Probability* (McGraw-Hill: New York, 1937) p 18.

⁷ The only example in the entire repertoire – both English and continental – that comes to mind is the phrase 'Beati mortui' in Duarte Lobo's *Audivi vocem* from the Missa Pro defunctis.



**Table 7.1(a) – Number of Sections Scored for Two Voices**

WORK	TR	TR	TR	TR	M	M	M	CT	CT	T	TOTAL	
	M	CT	T	B	CT	T	B	T	B			
Missa 'Albanus'				1							1	12
Missa 'O bone Jesu'				1					2		3	
Missa 'O quam glorifica'				1	2	2					5	
Missa 'Regali ex progenie'				2				1			3	
Missa 'Tecum principium'											0	
Magnificat 'O bone Jesu'											0	3
<i>Magnificat Regale</i>	1			1					1		3	
<i>Ave dei patris</i>		2									2	8
<i>Eterne laudis liliium</i>		1									1	
<i>Maria plena virtute</i>		1							1	1	3	
<i>Salve regina</i>			2								2	
<b>TOTAL</b>	<b>1</b>	<b>4</b>	<b>2</b>	<b>6</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>1</b>	<b><u>23</u></b>	

**Table 7.1(b) – Number of Sections Scored for Three Voices**

WORK	TR	TR	TR	TR	TR	TR	M	M	M	CT	TOTAL	
	M	M	M	CT	CT	CT	CT	CT	M	CT		
	CT	T	B	T	B	T	T	B	T	B		
Missa 'Albanus'	8				1	3	5			8	25	103
Missa 'O bone Jesu'	9	4	1				1			5	20	
Missa 'O quam glorifica'	5				1	2				9	17	
Missa 'Regali ex progenie'	3	2	4		3	3				4	19	
Missa 'Tecum principium'	3			2	5		5		1	6	22	
Magnificat 'O bone Jesu'	2	1		1	1		1		1	2	9	17
<i>Magnificat Regale</i>	1				1	1	1			4	8	
<i>Ave dei patris</i>	1								3	1	5	20
<i>Eterne laudis lilium</i>	1									2	3	
<i>Maria plena virtute</i>					1				1	1	3	
<i>Salve regina</i>	1				2		1			5	9	
<b>TOTAL</b>	<b>34</b>	<b>7</b>	<b>5</b>	<b>3</b>	<b>15</b>	<b>9</b>	<b>14</b>	<b>0</b>	<b>6</b>	<b>47</b>	<b>140</b>	

**Table 7.1(c) – Number of Sections Scored for Four Voices**

WORK	TR	TR	TR	TR		TOTAL	
	M		M	M	M		
	CT	CT	CT	CT	CT		
	T	T	T	T	T		
		B	B	B	B		
Missa 'Albanus'						0	12
Missa 'O bone Jesu'	1				4	5	
Missa 'O quam glorifica'						0	
Missa 'Regali ex progenie'	4				2	6	
Missa 'Tecum principium'					1	1	
Magnificat 'O bone Jesu'						0	2
<i>Magnificat Regale</i>	1				1	2	
<i>Ave dei patris</i>						0	1
<i>Eterne laudis liliium</i>						0	
<i>Maria plena virtute</i>					1	1	
<i>Salve regina</i>						0	
<b>TOTAL</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>15</b>	

**Table 7.1(d) – Number of Sections Scored for Five Voices**

<b>WORK</b>	<b>TR M CT T B</b>	<b>TOTAL</b>
Missa 'Albanus'	15	<b>68</b>
Missa 'O bone Jesu'	13	
Missa 'O quam glorifica'	12	
Missa 'Regali ex progenie'	16	
Missa 'Tecum principium'	12	
Magnificat 'O bone Jesu'	8	<b>13</b>
<i>Magnificat Regale</i>	5	
<i>Ave dei patris</i>	3	<b>13</b>
<i>Eterne laudis liliium</i>	2	
<i>Maria plena virtute</i>	2	
<i>Salve regina</i>	6	
<b>TOTAL</b>	<b><u>94</u></b>	

that for the top three voices – TR/M/CT – which can be found in all except one of the works under study. These are by far the most commonly occurring trios appearing 47 and 34 times respectively, over twice as many as those for TR/CT/B (15 times), and M/CT/T (14 times). The juxtaposition of high/low trios occurs frequently within Fayrfax’s extant works, and may have been influenced by music from the continent, with which the composer was almost certainly familiar.⁸ Even some of the composer’s earliest known surviving works already display this technique; for example, the first two sections of *Salve regina*. Of the four most popular combinations, three are for adjacent voices. The reason for this is most probably that they are more easily distinguishable aurally than the other combinations. Fewer combinations are used in the motets; only five out of the possible 10 are used, whereas nine can be found in the masses.

Writing for four voices is used least frequently within Fayrfax’s works – appearing in five of the 11 extant complete works – and only two of the five possible combinations are employed. These two quartets omit either TR or B. The reasoning for only the highest and lowest voices being used in this way is because it is more easily distinguishable aurally when a voice from the top or bottom of the texture is absent, rather than one from the middle. The majority of

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⁸ For a detailed discussion of the transmission of music to and from the continent, see: Theodor Dumitrescu, *Anglo-Continental Musical Relations, c. 1485–1530* (Unpubl. PhD. thesis: University of Oxford, 2004). The early sixteenth-century choirbook London, British Library, MS Royal 11 E. xi provides an example of continental music being present within the English royal court. Evidence within the MS itself reveals that it was commissioned and compiled in 1516, possibly to celebrate the birth of Princess Mary to Henry VIII and Catherine of Aragon on 18 February of that year. See: Anna Parsons and Nick Sandon (eds.), *The Crowned Rose – Motets for Henry VIII* (Antico Edition: Newton Abbot, 2006). The ascription of one of the six works within the MS – *Sub tuum presidium* – is to Benedictus de Opitiis. The Italian composer was organist for the Marian confraternity of the church of Our Lady in Antwerp, but in the spring of 1516 he was appointed as Henry’s privy chamber organist. Whilst two of the other motets are ascribed to M[r] Sampson – possibly the Englishman Richard Sampson (a priest and diplomat who worked for Cardinal Wolsey in Tournai, and had other close connections with cities on the continent) – they display many traits of the Netherlandish style, as do the three anonymous works. Sampson’s *Psalite felices* and *Quam pulcra es*, Benedictus’ *Sub tuum presidium*, and the anonymous *Hec est preclarum vas* all display the alternation between high/low vocal scorings and make some use of homophony, particularly in order to highlight important words or phrases (e.g. the phrase ‘Est rex Henricus’ in *Psalite felices*).

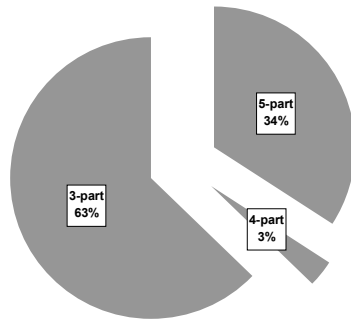
the four-part semi-choir sections appear in the masses; only three sections in all of the motets and Magnificats are composed for this number of voices.

Tutti sections are the second most common after trios. In the majority of cases, major sections of works composed in the early Tudor period conclude with all voices, and Fayfax is no exception. Most of the works under study here are split into two parts and in addition to the tutti at the end of major sections include several others. However, there are a number of examples where this is not the case. Within two of the motets, *Eterne laudis liliium* and *Maria plena virtute*, tutti occur only at the end of the major sections and therefore only two are present in each work. This is in contrast to the other complete motets, *Ave dei patris* and *Salve regina*, which have three and six respectively. Both Magnificats have a greater proportion of tutti than any of the other works – eight in ‘O bone Jesu’ and five in *Regale*. The placement of semi-choir and tutti sections in the Magnificats is very different from the masses and motets. In the Magnificat ‘O bone Jesu’ all three sections begin with a tutti, whilst the first and second sections end with a trio semi-choir passage. The first two sections of *Magnificat Regale* begin with a tutti and end with a trio. The third section, however, begins and ends in a more orthodox manner. Both settings of the text are highly sectionalized: on many occasions a semi-choir passage consists of only one word, for example ‘dispersit’, ‘superbos’, and ‘Abraham’ in both works. This sectionalization partly occurs because the odd verses of the canticle are set polyphonically whilst the even verses are sung to the appropriate plainchant.⁹ It may be that the inclusion of plainchant influences the choice of scoring; the opening tutti of sections providing a greater contrast to the preceding plainchant verses.

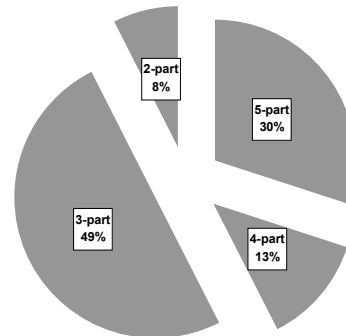
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⁹ Apart from the first verse in which the first half is sung to plainchant, and the second to polyphony.

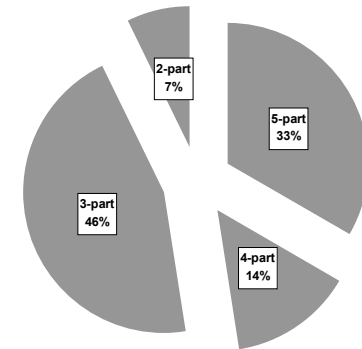
**Chart 7.2(a) – Scoring: Missa ‘Tecum principium’**



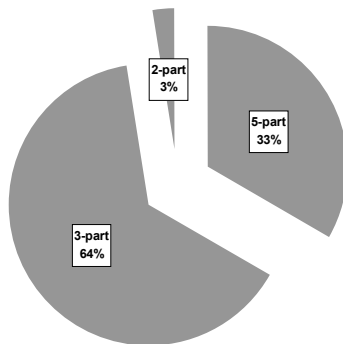
**Chart 7.2(b) – Scoring: Missa ‘O bone Jesu’**



**Chart 7.2(c) – Scoring: Missa ‘Regali ex progenie’**



**Chart 7.2(d) – Scoring: Missa ‘Albanus’**



**Chart 7.2(e) – Scoring: Missa ‘O quam glorifica’**

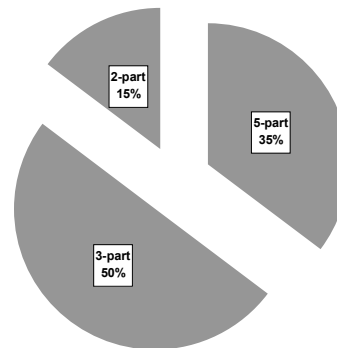


Chart 7.2 shows the different ways in which Fayrfax uses scoring within his five-part masses. The percentages refer to the number of sections rather than total length of them. It is interesting to note that the total amount of music for five parts remains fairly constant in all of the masses, ranging only from 30 to 35 percent. If a greater number of combinations are employed – for example, when there are semi-choir passages sections for two, three, and four voices, rather than for only two and three – the number of trio semi-choir passages decreases.

Several patterns in the choice of scoring are immediately apparent in the Missa 'Tecum principium' – as shown in Chart 7.1(a) in Appendix 2. The first halves of the Sanctus and Agnus Dei are the same, as are the first halves of the Gloria and Credo apart from one minor adjustment in the Credo. Two versions of the Gloria survive. The first half of each is exactly the same musically, as is the final tutti at the end of the movement; only the semi-choir sections of the second half differ, as previously shown. The scoring of the first major section of the Sanctus and Agnus Dei is exactly the same as that of the Gloria apart from the final semi-choir section. In the Gloria this section is scored for the lowest three voices, whereas in the Sanctus and Agnus Dei the top three voices are used. The last two movements are therefore a textural mirror image of the Gloria.

The second halves of the Gloria (version 2), Credo, and Agnus Dei are scored in the same way. The section opens with a trio for the upper three voices. This is then followed by a section for the lowest three voices before ending with a tutti. The first version of the Gloria has the same number of sections as the second, but the voices employed in the two trios are different. The Sanctus, on the other hand, has an extra section before the final tutti, although this is also scored for three voices. The juxtaposition of sections employing the upper three and lower three voices is common throughout all of



Fayrfax's sacred works. This technique is most probably employed because the difference between these scorings is easily audible. It would be harder to identify aurally, for example, the difference between a section scored for TR/M/CT, and one for TR/M/T. Within the second half of the Sanctus the change in scoring is more subtle. Although in its basic structure it is the same as the other movements, an extra section is inserted between those for the upper and lower three voices. This section is scored for M/CT/T – the only one of its kind in the work – which provides a seamless transition between the sections on either side.

The scoring in Missa 'Regali ex progenie' is very different from that of the other masses; no halves of any movements follows the same pattern as its corresponding other half. The first three sections of the Credo establish a pattern that is replicated by the first three sections of both the Sanctus and Agnus Dei. The beginning of the Gloria is almost the same but T finishes early in the first four-voice section and so becomes a trio. The first halves of the Sanctus and Agnus Dei have a similar scoring; the same combinations of voices are used, but the order in which they appear changes. In the Sanctus, a section for TR/T/B is followed by one for TR/CT/B; in the Agnus Dei they are the other way round. In the Gloria and Credo there is only one semi-choir section between the two tuttis in the first half. In the Gloria this is scored for TR/T/B, whilst in the Credo the TR/M/T are used. TR is used throughout the first half in every movement.

The second halves of the Sanctus and Agnus Dei share a number of similar characteristics. All sections are the same apart from the penultimate one; the top three voices are used in the Sanctus, and CT/T in the Agnus Dei. Frequent changes occur in the second half of the Gloria. Towards the end of the movement a different scoring is used for each line of text.

Fayrfax's choice of scoring throughout the Gloria and Credo of Missa 'O bone Jesu' is exactly the same; only the lengths of the sections differ. The first half of the Agnus Dei is also scored in the same way as the respective first halves of the first two movements, whereas the Sanctus is scored slightly differently. Within this movement an additional semi-choir section – for TR/M/B – is inserted before the final tutti. As in Missa 'Regali ex progenie' each movement begins with a four-part semi-choir passage. In Missa 'O bone Jesu' the lowest four voices are used, whereas in 'Regali ex progenie' Fayrfax chooses to employ the uppermost voices.

The second halves of each movement show different aspects of the composer's textural variation. At the beginning of this section in the Gloria and Credo a trio is used; TR and M are used throughout, whilst CT and T alternate. This is followed – in both movements – by a duet for CT/B, and concludes with a tutti. The scoring in the Sanctus and Agnus Dei is very different, being much more clear-cut. In the first of these movements Fayrfax creates a terraced effect in the semi-choir passages; it begins with a trio for the upper three voices, T is then added to this combination, before TR and M drop out to leave a trio of the lower three voices which then leads into the final tutti. This type of format in scoring is in contrast to that used in the Agnus Dei. In the second half of this final movement, sparse and dense textures are juxtaposed. The movement begins with a duet for the outermost voices – TR/B – which is followed by a trio for M/CT/T, before the final full section. The similarities in scoring within the Missa 'O bone Jesu' are not surprising considering that the work is based not on a cantus firmus – or any other pre-existing chant material – but on the parody technique.

The problems associated with the general structure of Missa 'O quam glorifica' have already been discussed.¹⁰ However, it seems unlikely that any

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¹⁰ See pp 37–44.

mensural changes would effect the scoring of the work. Although the units of measurement would be different with the mensural scheme suggested by Bray, the proportional relationship between the individual movements would remain the same. For this reason the units of measurement have been removed from the chart of this particular mass.

The second halves of the Gloria and Credo in Missa 'O quam glorifica' are scored in the same way: two semi-choir passages for the upper three and lower three voices respectively are followed by a tutti. In the Agnus Dei, the first of these semi-choir sections is omitted, and in the Sanctus a duet for TR/B is inserted before the final tutti. The first halves of each movement are structured in a more complicated manner. Again the movements can be paired in the same way for comparison – Gloria and Credo, and Sanctus and Agnus – owing to their general characteristics in terms of the number of sections used. The first pair of movements consist of a duet for M/CT, a trio – for TR/T/B in the Gloria, and TR/CT/B in the Credo – followed by a tutti, a trio for the lowest three voices, and finally another tutti. The Sanctus and Agnus Dei follow a similar pattern, however, an additional TR/M/CT section is inserted before the final tutti. The beginning of the Sanctus is scored in the same way as the Gloria whilst the Agnus opens with a M/T duet – rather than one for M/CT as in all of the other movements – and like the Credo, is followed by a trio for TR/CT/B.

The patterns in scoring described above are not confined to the masses; many can be found in the four extant complete large-scale motets. However, the works that are known to have been composed earlier in the composer's life are somewhat different from those that date from his later years. In terms of contrasting scorings, *Salve regina* and *Eterne laudis liliium* stand at the two extremes. *Eterne laudis liliium* is perhaps the most simply scored work in Fayrfax's entire output; the work consists of only six sections, two semi-choir

passages and a tutti are used in each half of the work.¹¹ The choice of voices in the semi-choir sections is very similar in each half: the first is set for a group of upper voices – the top three in perfect time, and TR and CT in imperfect time – and in both halves, the second semi-choir passage is scored for the lowest three voices. Only four combinations of voices are used, far fewer than in the other motets. One of the most interesting features in this work is that CT is employed throughout, in a pivot-like manner, a technique that can also be found in each movement of Missa ‘Tecum principium’. In view of the fact that only a small number of semi-choir sections is used, the duration of each reduced section is much greater than in the other works.

Texturally, *Salve regina* forms a complete contrast to *Eterne laudis liliium*, with frequent changes of scoring occurring. This work has several notable features. The first is the similarity between the final section of the motet and the first half of the Gloria of Missa ‘Tecum principium’. One slight difference does appear; the tutti that can be found after the second trio – for TR/CT/B – in the mass is absent in the motet.

The first half of *Ave dei patris filia* is scored in the same way as the opening of *Eterne laudis liliium*, although the second section is more sectionalized. After the first semi-choir passage for M/T/B, the section continues with an extended duet for TR/CT. This is interrupted by a short section of only eight semibreves with the word ‘Ave’ in the remaining three voices. This motet differs from the others composed towards the latter part of Fayrfax’s career in that two tutti semi-choir passages are found in the second half. This can be explained by examining the structure of the text. This consists of seven stanzas – each celebrating different attributes of the Blessed Virgin Mary – to which a request for her intercession is appended. The tutti sections appear at the end of

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¹¹ I have considered the section between semibreves 398-442 to be a trio even though the triplex and medius are introduced briefly. The reasoning for their introduction will be explained later.

the seventh stanza and at the close of the work. The first tutti appears to be used in order to highlight the end of the poetry and the beginning of the intercession. It is for this reason that two tutti verses are found in the second section.

### 7.2.2 Transitions between sections of scoring

Fayrfax handles the transition between sections of scoring in seven different ways, as shown in the following examples. These seven categories were decided upon by examining all 272 transitions in the complete five-part works, and identifying the different types used. Initially six types were identified but on closer inspection it became apparent that several transitions could not be easily classified within these parameters. This was particularly the case when the transition between trios is not clear and when one or more of the voices are employed in two consecutive sections. In view of this a seventh type has been included – Scoring Transition 4.¹² Both musical and textual aspects were considered in order to define each transition.

- **ST1:** This occurs at the end of a major section where all voices cease – indicated by a double bar and fermata in modern editions. Although this type of transition can be found most frequently at the change of metre, about half way through each movement, several examples can also be found at other points, particularly in the Sanctus of each mass. In view of the clarity of the break in this type, there is little chance that it can be mistaken for another transitional type.

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¹² Hereafter, Scoring Transition Type will be abbreviated to ST.

- **ST2:** The second type of transition occurs predominantly when one trio leads into another. Here the musical material in all of the voices stops before the new combination of voices enters. The musical material rather than the textual meaning defines this type, as in Example 7.1(a) where the words continue without a punctuation mark but the composer has not included any overlap between the voices.

**Example 7.1(a) – ST2: Missa ‘Tecum principium’, Sanctus**

82

The musical score consists of five staves. The first three staves are vocal parts (Soprano, Alto, and Tenor) and the last two are bass parts. The lyrics are: 'glo - ri - ra glo - ri'. The score shows a transition where all voices stop on a single chord (the word 'ra') before the next section begins. The lyrics 'glo - ri' are repeated in the first two staves, and 'ra glo - ri' is split across the third and fourth staves.

- **ST3:** In this transition all of the voices from the first semi-choir section come to rest at the same time on one chord, and stay motionless whilst the next section begins, using notes from the previous chord, or a consonant note implied by it.

**Example 7.1(b) – ST3: Missa ‘Regali ex progenie’, Agnus dei**

qui tol - lis pec - ca - - -

i,

i,

qui tol - lis pec - ca

- **ST4:** This transition can have a number of different characteristics. In the majority of cases only one voice moves at a cadence, but only passing dissonances or consonant skips are heard. On some occasions the voices fail to come to rest at same time, but no overlapping of words is present.

**Example 7.1(c) – ST4: Missa ‘Tecum principium’, Sanctus**

San - - - - -

- ctus, - - - - -

- ctus, - - - - - San - - - - -

- ctus, - - - - -

San - - - - -

- **ST5:** This type of transition is similar to Type 3. However, when the voices from the first section have first come to rest they subsequently change as the new voices enter, altering the vertical aggregate.

**Example 7.1(d) – ST5: Missa ‘O bone Jesu’, Gloria**

87

mi - se - re - re

- di: mi - - - se - re - re no -

- di:

mi - se - re - - - re

- **ST6:** Here the new section begins on the last syllable of the previous section of text. This can be found most frequently in T with the entrance of the cantus firmus, but also occurs in other places, as discussed below. This is the case in Example 7.1(e) where the tutti begins on ‘-stram’ of ‘nostram’, following a TR/CT/B trio.

**Example 7.1(e) – ST6: Missa ‘Albanus’, Gloria**

112

- - - stram Qui se - des ad dex - te - ram

- - - stram. Qui se - - - des ad dex - te -

- - - stram. Qui se - des ad dex - te - ram Pa -

- - - stram. Qui se - des ad dex - - -

- - - stram. Qui se - - - des ad dex - te -

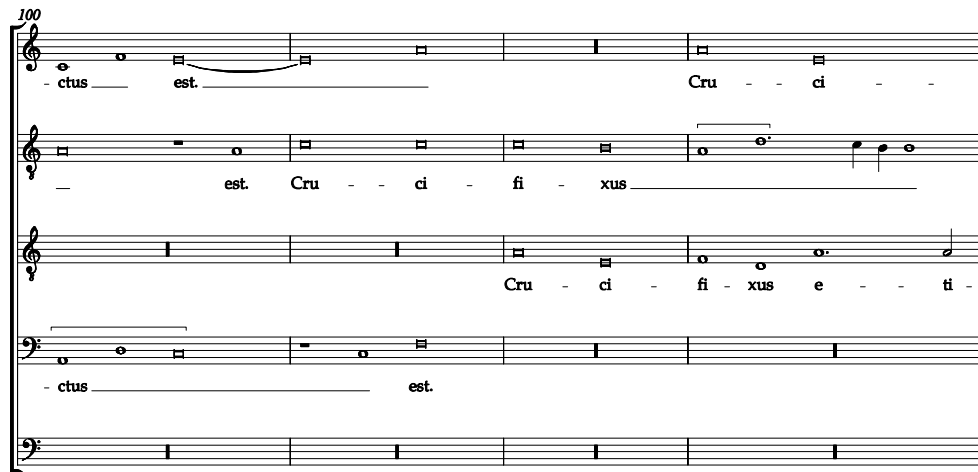
- **ST7:** This transition occurs when the voices from the first section do not come to rest at the same time. Instead all finish at different times as other voices start, frequently also at different times. This occurs most often when



the new semi-choir passage begins with a series of imitative entries, creating an overlap between the words of each section.

**Example 7.1(f) – ST7: Missa ‘O bone Jesu’, Credo**

100



- ctus est. Cru - - ci - -

est. Cru - - ci - fi - xus

Cru - ci - fi - xus e - - ti -

- ctus est.

**Table 7.3(a) – ST Types: Masses**

WORK	MOVE- MENT	TRANSITION TYPE (ST)							TOTAL		
		1	2	3	4	5	6	7			
Missa 'Albanus'	Gloria	6	3	4			1		14	41	<u>195</u>
	Credo	5		3					8		
	Sanctus	9		1					10		
	Agnus Dei	4	3	1	1				9		
Missa 'O bone Jesu'	Gloria	4	4	2		1			11	41	
	Credo	5	1	3	1			1	11		
	Sanctus	9		1			1		11		
	Agnus Dei	4		2		1	1		8		
Missa 'O quam glorifica'	Gloria	3		3	1		1		8	34	
	Credo	3		3			2		8		
	Sanctus	6			2	1	1		10		
	Agnus Dei	3	1	1			3		8		
Missa 'Regali ex progenie'	Gloria	3	1	2	1		2	3	12	44	
	Credo	3		1	4	1	1		10		
	Sanctus	8	1	1			2		12		
	Agnus Dei	4		3		1	2		10		
Missa 'Tecum principium'	Gloria	3	1	3		1			8	35	
	Credo	4		3	1				8		
	Sanctus	7	1		1		1		10		
	Agnus Dei	3	3	3					9		
<b>TOTAL</b>		<b>96</b>	<b>19</b>	<b>40</b>	<b>12</b>	<b>6</b>	<b>18</b>	<b>4</b>	<b><u>195</u></b>		

**Table 7.3(b) – ST Types: Magnificats and Motets**

WORK	TRANSITION TYPE (ST)							TOTAL	
	1	2	3	4	5	6	7		
Magnificat 'O bone Jesu'	13		3		1			16	<b><u>35</u></b>
Magnificat <i>Regale</i>	13	1	1	1			2	18	
<i>Ave dei patris</i>	2	2	5	1				10	<b><u>42</u></b>
<i>Eterne laudis liliu</i>	2	1	2	1				6	
<i>Maria plena virtute</i>	6		3					9	
<i>Salve regina</i>	12	1	2		2			17	
<b>TOTAL</b>	<b>48</b>	<b>5</b>	<b>16</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b><u>77</u></b>	

**Table 7.3(c) – ST Types: Comparison of Mass Movements**

MOVEMENT	TRANSITION TYPE (ST)							TOTAL	
	1	2	3	4	5	6	7		
Gloria	19	9	15	2	1	4	3	53	<u>195</u>
Credo	20	1	13	6	1	3	1	45	
Sanctus	39	2	3	3	1	5		53	
Agnus Dei	18	7	10	1	2	6		44	
<b>TOTAL</b>	<b>96</b>	<b>19</b>	<b>41</b>	<b>12</b>	<b>5</b>	<b>18</b>	<b>4</b>	<b><u>195</u></b>	

**Table 7.3(d) – ST Types: All Works**

WORK TYPE	TRANSITION TYPE (ST)							TOTAL	
	1	2	3	4	5	6	7		
Masses	96	19	41	12	5	18	4	195	<u>272</u>
Magnificats	26	1	4	1	1		2	35	
Motets	22	4	12	2	2			42	
<b>TOTAL</b>	<b>144</b>	<b>24</b>	<b>57</b>	<b>15</b>	<b>7</b>	<b>18</b>	<b>6</b>	<b><u>272</u></b>	

**Table 7.4(a) – Placement of ST Types: Gloria**

	<b>Missa ‘Tecum principium’</b>	<b>Missa ‘O bone Jesu’</b>	<b>Missa ‘Albanus’</b>	<b>Missa ‘Regali ex progenie’</b>	<b>Missa ‘O quam glorifica’</b>
	Et in terra pax hominibus bone voluntatis. [4]	Et in terra pax hominibus bone voluntatis. [1]	Et in terra pax hominibus bone voluntatis.	Et in terra pax hominibus bone voluntatis. [7]	Et in terra pax hominibus bone voluntatis. [4]
	Laudamus te; benedicimus te; adoramus te; glorificamus te. [3]	Laudamus te; benedicimus te; adoramus te; glorificamus te. [2]	Laudamus te; benedicimus te; adoramus te; glorificamus te. [2]	Laudamus te; benedicimus te; adoramus te; glorificamus te. [6]	Laudamus te; benedicimus te; adoramus te; glorificamus te. [3]
	Gratias agimus tibi propter magnam gloriam tuam, Domine Deus, Rex celestis, Deus Pater omnipotens. [1]	Gratias agimus tibi propter magnam gloriam tuam, Domine Deus, Rex celestis, Deus Pater omnipotens. [1]	Gratias agimus tibi propter magnam gloriam tuam, Domine Deus, Rex celestis, Deus Pater omnipotens. [1]	Gratias agimus tibi propter magnam gloriam tuam, Domine Deus, Rex celestis, Deus Pater omnipotens. [1]	Gratias agimus tibi propter magnam gloriam tuam, Domine Deus, Rex celestis, Deus Pater omnipotens. [1]
	Domine Fili unigenite Jesu Christe; [2]	Domine Fili unigenite Jesu Christe; [2]	Domine Fili unigenite Jesu Christe; [2]	Domine Fili unigenite Jesu Christe; [6]	Domine Fili unigenite Jesu Christe; [5]
	Domine Deus, Agnus Dei, Filius Patris, [1]	Domine Deus, Agnus Dei, Filius Patris, [1]	Domine Deus, Agnus Dei, Filius Patris, [1]	Domine Deus, Agnus Dei, Filius Patris, [1]	Domine Deus, Agnus Dei, Filius Patris, [1]
	qui tollis peccata mundi, miserere nobis; [4]	qui tollis peccata mundi, [5] miserere nobis; [3]	qui tollis peccata mundi, miserere nobis; [3]	qui tollis peccata mundi, miserere nobis; [3]	qui tollis peccata mundi, miserere nobis; [3]
	qui tollis peccata mundi, suscipe deprecationem nostram: [5]	qui tollis peccata mundi, [3] suscipe deprecationem nostram: [2]	qui tollis peccata mundi, [3] suscipe deprecationem nostram: [6]	qui tollis peccata mundi, suscipe deprecationem nostram: [2]	qui tollis peccata mundi, suscipe deprecationem nostram: [3]
	qui sedes ad dexteram Patris, miserere nobis. Quoniam tu solus sanctus: tu solus Dominus: tu solus altissimus, Jesu Christe, cum Sancto Spiritu, in gloria Dei Patris. Amen [1]	qui sedes ad dexteram Patris, miserere nobis. [3] Quoniam tu solus sanctus: tu solus Dominus: tu solus altissimus, Jesu Christe, cum Sancto Spiritu, in gloria Dei Patris. Amen. [1]	qui sedes ad dexteram Patris, miserere nobis. [3] Quoniam tu solus sanctus: tu solus Dominus: [2] tu solus altissimus, [1] Jesu [1] Christe, [1] cum Sancto Spiritu, in gloria Dei Patris. Amen. [1]	qui sedes ad dexteram Patris, miserere nobis. [4] Quoniam tu solus sanctus: [7] tu solus Dominus: [7] tu solus altissimus, Jesu Christe, cum Sancto Spiritu, in gloria Dei Patris. Amen. [1]	qui sedes ad dexteram Patris, miserere nobis. Quoniam tu solus sanctus: tu solus Dominus: tu solus altissimus, Jesu Christe, cum Sancto Spiritu, in gloria Dei Patris. Amen [1]

**Table 7.4(b) – Placement of ST Types: Credo**

	<b>Missa ‘Tecum principium’</b>	<b>Missa ‘O bone Jesu’</b>	<b>Missa ‘Albanus’</b>	<b>Missa ‘Regali ex progenie’</b>	<b>Missa ‘O quam glorifica’</b>
	Patrem omnipotentem, factorem celi et terre, [3]	Patrem omnipotentem, [1] factorem celi et terre, visibilium omnium et invisibilium. [3]	Patrem omnipotentem, factorem celi et terre, visibilium omnium et invisibilium. [3]	Patrem omnipotentem, factorem celi et terre, [4] visibilium omnium et invisibilium. [4]	Patrem omnipotentem, factorem celi et terre, [3] visibilium omnium et invisibilium. [3]
	Et in unum Dominum Jesum Christum, Filium Dei unigenitum, et ex Patre natum ante omnia secula. Deum de Deo, Lumen de Lumine, Deum verum de Deo vero, [1]	Et in unum Dominum Jesum Christum, Filium Dei unigenitum, et ex Patre natum ante omnia secula. Deum de Deo, Lumen de Lumine, Deum verum de Deo vero, [1]	Et in unum Dominum Jesum Christum, Filium Dei unigenitum, et ex Patre natum ante omnia secula. Deum de Deo, Lumen de Lumine, Deum verum de Deo vero, [3]	Et in unum Dominum Jesum Christum, Filium Dei unigenitum, et ex Patre natum ante omnia secula. [1]	Et in unum Dominum Jesum Christum, Filium Dei unigenitum, et ex Patre natum ante omnia secula. [1]
	genitum non factum, consubstantialem Patri; per quem omnia facta sunt. [3]	genitum non factum, consubstantialem Patri; per quem omnia facta sunt. [4]	genitum non factum, consubstantialem Patri; per quem omnia facta sunt.	genitum non factum, consubstantialem Patri; per quem omnia facta sunt. [6]	genitum non factum, consubstantialem Patri; per quem omnia facta sunt. [6]
	Qui propter nos homines et propter nostram salutem descendit de celis. [1]	Qui propter nos homines et propter nostram salutem descendit de celis. [1]	Qui propter nos homines et propter nostram salutem descendit de celis. [1]	Qui propter nos homines et propter nostram salutem descendit de celis. [1]	Qui propter nos homines et propter nostram salutem descendit de celis. [1]
	Et incarnatus est de Spiritu Sancto ex Maria Virgine, et homo factus est. [1]	Et incarnatus est de Spiritu Sancto [3] ex Maria Virgine, et homo factus est. [7]	Et incarnatus est de Spiritu Sancto ex Maria Virgine, et homo factus est. [1]	Et incarnatus est de Spiritu Sancto ex Maria Virgine, et homo factus est. [3]	Et incarnatus est de Spiritu Sancto ex Maria Virgine, et homo factus est. [3]
	Crucifixus etiam pro nobis sub Pontio Pilato, passus et sepultus est, [4]	Crucifixus etiam pro nobis sub Pontio Pilato, [2] passus et sepultus est, [1]	Crucifixus etiam pro nobis sub Pontio Pilato, passus et sepultus est, [1]	Crucifixus etiam pro nobis sub Pontio Pilato, passus et sepultus est, [4]	Crucifixus etiam pro nobis sub Pontio Pilato, passus et sepultus est, [6]
	et resurrexit tertia die, secundum Scripturas, et ascendit in celum, sedet ad dexteram Patris. Et iterum venturus est cum gloria, iudicare vivos et mortuos, cuius regni non erit finis.	et resurrexit tertia die, secundum Scripturas, et ascendit in celum, sedet ad dexteram Patris. Et iterum venturus est cum gloria, iudicare vivos et mortuos, cuius regni non erit finis.	et resurrexit tertia die, secundum Scripturas, et ascendit in celum, sedet ad dexteram Patris. [3] Et iterum venturus est cum gloria, iudicare vivos et mortuos, cuius regni non erit finis. [1]	et resurrexit tertia die, secundum Scripturas, et ascendit in celum, sedet ad dexteram Patris. [4] cuius regni non erit finis. [4]	et resurrexit tertia die, secundum Scripturas, et ascendit in celum, sedet ad dexteram Patris. Et iterum venturus est cum gloria, iudicare vivos et mortuos, cuius regni non erit finis.
	Amen. [1]	Amen. [1]	Et expecto resurrectionem mortuorum, et vitam venturi seculi. Amen. [1]	et vitam venturi saeculi Amen. [1]	Amen. [1]

**Table 7.4(c) – Placement of ST Types: Sanctus**

	<b>Missa ‘Tecum principium’</b>	<b>Missa ‘O bone Jesu’</b>	<b>Missa ‘Albanus’</b>	<b>Missa ‘Regali ex progenie’</b>	<b>Missa ‘O quam glorifica’</b>
	Sanctus, sanctus, [5]	Sanctus, [1] sanctus, sanctus, [6]	Sanctus, [1]	Sanctus, sanctus, [6]	Sanctus, [6]
	sanctus, [6]		sanctus, [3]	sanctus, [6]	Sanctus, [4]
	Dominus Deus Sabaoth. [1]	Dominus Deus Sabaoth. [1]	Dominus Deus Sabaoth. [1]	Dominus Deus Sabaoth. [1]	Dominus Deus Sabaoth. [1]
	Pleni sunt celi et terra [2]	Pleni sunt celi et terra	Pleni sunt celi et terra [1]	Pleni sunt celi et terra [1]	Pleni sunt celi et terra [4]
	gloria tua. [1]	gloria tua. [1]	gloria tua. [1]	gloria tua. [1]	gloria tua. [5]
	Hosanna in excelsis. [1]	Hosanna [1] in excelsis. [1]	Hosanna in excelsis. [1]	Hosanna [1] in excelsis. [1]	Hosanna in excelsis. [1]
	Benedictus [1]	Benedictus [1]	Benedictus [1]	Benedictus [2]	Benedictus [1]
	qui venit [1]	qui venit [1]	qui venit [1]	qui venit [3]	qui venit [1]
	in nomine Domini. [1]	in nomine Domini. [1]	in nomine Domini. [1]	in nomine Domini. [1]	in nomine Domini. [1]
	Hosanna in excelsis. [1]	Hosanna in excelsis. [1]	Hosanna in excelsis. [1]	Hosanna [1] in excelsis. [1]	Hosanna in excelsis. [1]

**Table 7.4(d) – Placement of ST Types: Agnus Dei**

	<b>Missa ‘Tecum principium’</b>	<b>Missa ‘O bone Jesu’</b>	<b>Missa ‘Albanus’</b>	<b>Missa ‘Regali ex progenie’</b>	<b>Missa ‘O quam glorifica’</b>
	Agnus Dei, [3]	Agnus Dei, [1]	Agnus Dei, [3]	Agnus Dei, [3]	Agnus Dei, [6]
	qui tollis peccata mundi, [2]	qui tollis peccata mundi, [6]	qui tollis peccata mundi, [2]	qui tollis peccata mundi, [6]	qui tollis peccata mundi, [6]
	miserere nobis. [1]	miserere nobis. [1]	miserere nobis. [1]	miserere nobis. [1]	miserere nobis. [1]
	Agnus Dei, [2]	Agnus Dei, qui tollis peccata mundi, [5]	Agnus Dei, [4]	Agnus Dei, [1]	Agnus Dei, [4]
	qui tollis peccata mundi, miserere nobis. [1]	qui tollis peccata mundi, [5] miserere nobis. [1]	qui tollis peccata mundi, [2] miserere nobis. [1]	qui tollis peccata mundi, [6] miserere nobis. [1]	qui tollis peccata mundi, [6] miserere nobis. [1]
	Agnus Dei, [2]	Agnus Dei, [3]	Agnus Dei, [2]	Agnus Dei, [3]	Agnus Dei, [2]
	qui tollis peccata mundi, [3]	qui tollis peccata mundi, [3]	qui tollis peccata mundi, [1]	qui tollis peccata mundi, [3]	qui tollis peccata mundi, dona nobis pacem. [1]
	dona nobis pacem. [1]	dona nobis pacem. [1]	dona nobis pacem. [1]	dona nobis [5] pacem. [1]	dona nobis pacem. [1]

ST1 is used most frequently in Fayrfax's surviving five-part works; over half the transitions are of this type. ST1 is used more than any other in the two Magnificats. This is because of the alternatim nature of the setting; each section of polyphony must come to a complete stop before the plainchant is used for the even verses of the text. Within the magnificats and motets STs 1, 2 and 3 are used most of all, only 7 out of 77 fall outside these categories. This is in contrast to the masses, which use a wider variety; this is the only genre in which all seven types of transition are used.

No examples of ST6 occur in any of the magnificats or motets. Although most of these transitions are limited to the introduction of the cantus firmus in T – something that is not used in either of these two compositional types – a closer inspection of the masses shows that this is not always the case. An example of this can be seen before the final tutti in the first half of the Gloria in Missa 'Regali ex progenie'. Here M enters on the last syllable of the word 'Christe'. This is also where the cantus firmus begins, but the T has been used in the previous section.

**Example 7.72 – ST6: Regali ex progenie', Gloria**

The image shows a musical score for five parts. The top staff is a vocal line in G-clef with lyrics 'ste. Do - mi - ne'. The second staff is another vocal line in G-clef with lyrics '- ste. Do - mi - ne'. The third staff is a vocal line in C-clef with lyrics 'Do - mi - ne'. The fourth staff is a vocal line in C-clef with lyrics 'ste. Do - mi - -'. The fifth staff is a cantus firmus line in C-clef with lyrics 'ste. Do - mi - -'. The score includes various musical notations such as notes, rests, and bar lines.



Several patterns can be seen in Fayrfax's setting of the text within the five five-part masses. In addition to the usual bipartite or tripartite mensural structure, a number of other subdivisions occur at the same place within each movement as shown in Tables 7.4(a)-(d). A brief survey of masses by Fayrfax's contemporaries, and those written in years before and after the composer's life reveal that these were not necessarily standard breaks within these movements.¹³

The most significant pattern in these transitions is the placement of ST1s within each movement. In addition to the change in mensuration, another two occur in the Sanctus, and one in the Agnus and Gloria. The placement of these can be explained in the cantus firmus masses, Fayrfax having decided to bring the music to a complete close following a statement of the chant, or section of it. However, this reason cannot be given for the break after the words 'Deus pater omnipotens' in the Gloria of Missa 'O bone Jesu' as no pre-existing material is present. As a result, it is difficult to determine why these transitions occur at the same points within each mass.

In addition to the ST1s already noted, changes in scoring also occur in other places, but do not use the same type of transition; another four appear in the Gloria, and Agnus, three in the Credo, and five in the Sanctus. Again, reasons for these remain unclear.

### 7.3 Tessitura

Whilst range records the outer limits of a voice within a work, tessitura states the compass within which the majority of the notes occur; the former can be recorded in concrete terms, but the latter is more open to interpretation. The

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¹³ Masses examined include Alwood's Mass 'Praise Him Praiseworthy', Ashwell's Missa 'Ave Maria' and Missa 'Jesu Christe', Norman's Missa 'Resurrexit Dominus', Raser's Missa 'Christe Jesu' (all of which appear in Forrest-Heyther along with a number of Fayrfax's works); also Plummer's Missa 'Sine nomine', Taverner's Missa 'Mater Christi', Missa 'Gloria Tibi Trinitas', Missa 'Corona Spinea', and Missa 'O Michael', and Tye's *Mean Mass* and Missa 'Euge bone'.

study of tessitura in music of the early Tudor period can take a number of different forms. Issues surrounding performance pitch and the types of voices employed on each individual vocal line have been covered in detail elsewhere, and although they are important when discussing the early Tudor repertoire, they are not of primary concern when addressing this music from a purely analytical perspective.¹⁴ For the purposes of this project I shall focus on two specific areas of investigation: (1) the relationship between the voices in terms of range and pitch—both of which have already been touched upon in Chapters 3 and 6; and (2) the way in which Fayrfax manipulates the vocal line in response to both the other voices and the text.

In discussing the potential uses of computer-aided analysis in Chapter 3, it was shown – by way of a short musical example – that the average pitch of a voice – hereafter abbreviated to  $\bar{x}$  (P) – could be found with relative ease by dividing the sum of the pitches for each vocal line by the total number of notes. Following Bowers' method I was able to calculate  $\bar{x}$  (P) of each voice in most of Fayrfax's surviving works within Matlab. The presentation of my results differs from those of Bowers, in that the units are recorded by MIDI pitch, rather than by their relative distance from an arbitrarily chosen pitch. As Bowers was only concerned with the relationship between T and CT voices, his method sufficed in his own study. With the use of computer-aided analysis I was able to compare the pitch of all voices, and so the units needed to be the same for each voice. Another benefit of this method can be seen when examining standard deviation later in this section.

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¹⁴ For these areas of investigation, see (for example): Roger Bowers, 'The Performing Pitch of English 15th-Century Church Polyphony', *EM* 8/1 (January 1980) pp 21–8; Roger Bowers, 'Further Thought on Early Tudor Pitch', *EM* 8/3 (July 1980) pp 368–71; Roger Bowers, 'The Vocal Scoring, Choral Balance and Performing Pitch of Latin Church Polyphony in England, c. 1500–58', *Journal of the Royal Musical Association* 112/1 (1986); Roger Bowers, 'To Chorus from Quartet: The Performing Resource for English Church Polyphony, c. 1390–1559', in John Morehen (ed.), *English Choral Practice* (CUP: Cambridge, 1995) pp 1–47; Simon Ravens 'A Sweet Shriill Voice': The Countertenor and Vocal Scoring in Tudor England', *EM* 26/1 (February 1998) pp 122–34.

In addition to recording  $\bar{x}(P)$  of each voice in the works under examination, I also calculated  $\bar{x}(P)$  for the individual movements of the masses, the raw data and results of which can be found in Tables 7.5(a)-(b). In general I have only considered the complete five-part works; the works that survive incomplete are all missing T so comparison is difficult to achieve in this manner.

Any comparison of  $\bar{x}(P)$  between the same voices within the surviving works in this form is meaningless – the pitch at which the works were notated is not necessarily the pitch at which they were performed, as discussed in Chapter 6. What is of interest is the relationship between adjacent voices ( $D$ ), measured by the difference in  $\bar{x}(P)$ , as recorded in Chart 7.2. In light of Bowers' hypothesis the results are sorted by increasing difference between CT and T.

If, as Bowers suggests, the difference between CT and T can be used as an index of stylistic change, then the works to the left of Chart 7.2 are likely to have been written before those to the right. If this is the case then a number of other patterns emerge. The first of these is the levelling out of the difference between the other voices. By comparing the graph for *Magnificat Regale* with those for Missa 'O bone Jesu', Maria plena virtute, and Missa 'Tecum principium' this can be seen particularly clearly. The second pattern is the general decrease in  $D$  between the voices from left to right.

A number of factors suggest that using this method in isolation to categorize works chronologically is flawed. The first is that the graph for Missa 'Albanus' goes against the trends described above, particularly the T/B difference. Although Missa 'Regali ex progenie' and *Magnificat Regale* appear next to each other – as would be expected if they were written at the same time – the graphs for Missa 'O bone Jesu' and the corresponding Magnificat do not. The final and most significant factor is that although a clear distinction can be made between the CT/T relationship in *Salve regina* and Missa 'Regali ex

progenie', the difference is not so great between the works towards the middle of the chart.

By categorizing the works into four groups according to the CT/T value – as shown at the bottom of Chart 7.2 – a number of the problems cited above are resolved. The works are assigned as follows: GR1 ( $D=0.76$ ) – *Salve regina*; GR2 ( $2.3 < D < 2.5$ ) – Missa 'Regali ex progenie', *Magnificat Regale*, Magnificat 'O bone Jesu'; GR3 ( $3 < D < 3.18$ ) *Ave dei patris*, *Eterne laudis lilium*, Missa 'O bone Jesu', Missa 'Albanus'; and GR4 ( $3.75 < D$ ) *Maria plena virtute*, Missa 'Tecum principium'. *Ave dei patris* and Missa 'O bone Jesu' which look similar when examining average pitch only are now placed within the same group. However, Magnificat 'O bone Jesu' and the corresponding mass still appear in GR2 and GR3 respectively. The reason for this may be that in some cases the voices are not treated in the same way in different compositional types, even those that are based upon the same pre-existing material, and apparently composed at the same time.

This may seem to present a fairly negative view of this analytical method. However, when using it very broadly – rather than trying to explain every small detail of each graph – it can be seen that there are a number of positive applications. In the past, the most frequently used method to compare the range – and by implication, the tessitura – was to look at the clef of each voice. In Chapter 6 I showed the allocation of clefs used for each voice within the manuscript sources. Table 7.7 – reprinted from the previous Chapter – shows that both *Salve regina* and *Maria plena virtute* use C4 clefs in CT and T, and so by using this method only it could be assumed that the range and tessitura was the same in each voice. I have demonstrated that the difference in  $\bar{x}(P)$  is relatively large – 0.76 in *Salve regina* and 3.77 in *Maria plena virtute*. This shows that looking only at the clefs is not sufficient to show how the voices relate to each other on a detailed level.

If tessitura is considered to be a measurement of variability, one particular method of investigation comes to mind immediately, standard deviation – the measurement of statistical dispersion, or the spread of data in relation to  $\bar{x}$ . Within the context of single vocal lines taken from a polyphonic work that I am examining here, the standard deviation ( $\sigma$ ) shows how far from the average pitch the other notes lie. Assuming that the values follow a bell-shaped distribution, which seems likely from a visual examination of the score,  $\approx 68\%$  lie within  $\pm 1$  standard deviations of  $\bar{x}$ ,  $\approx 95\%$  lie within  $\pm 2$  standard deviations, and  $\approx 99.7\%$  within  $\pm 3$ .¹⁵ Table 7.6 shows  $\sigma$  for the voices within each of Fayrfax's surviving works, the units of which are in semitones.

In general terms M and T deviate from  $\bar{x}$  by the smallest amount, CT and B deviate by the greatest amount, and TR lies somewhere in between. Within the masses that use a true cantus firmus – 'Regali ex progenie' and 'Tecum principium' – T has the smallest standard deviation. There is also a direct correlation between the total amount of musical material based upon the cantus firmus and the standard deviation. The smallest standard deviation of T occurs in the two movements that – in proportional terms – include the largest amount of chant: the Gloria and Credo. This can be seen particularly clearly in Missa 'Regali ex progenie' where the tessitura of T is heavily influenced by the chant. Within Missa 'O bone Jesu' T is freely composed, and the manipulation of the 'Albanus' motif on various scale-steps within the mass of the same name alters the way in which the vocal line is employed. As a result, it is not T, but M that has the smallest  $\sigma$  within these works.

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¹⁵ If the values do not follow a bell-shaped distribution then Chebyshev's Inequality states that at least 75% are within 2 standard deviations of the mean. See: Daniel E. Bailey, *Probability and Statistics: Models for Research* (Wiley: New York, 1971) p 78.

**Table 7.5(a) – Average Pitch of Voices: Masses**

	TR			M			CT			T			B		
	Total	Notes	Average	Total	Notes	Average	Total	Notes	Average	Total	Notes	Average	Total	Notes	Average
<b>Missa A</b>	<b>102621</b>	<b>1421</b>	<b><u>72.21745</u></b>	<b>100454</b>	<b>1524</b>	<b><u>65.9147</u></b>	<b>115047</b>	<b>1937</b>	<b><u>59.39442</u></b>	<b>78140</b>	<b>1390</b>	<b><u>56.21583</u></b>	<b>63622</b>	<b>1316</b>	<b><u>48.34498</u></b>
Gloria	29017	400	<b>72.5425</b>	25135	379	<b>66.31926</b>	28959	491	<b>58.97963</b>	13780	240	<b>57.41667</b>	14497	297	<b>48.81145</b>
Credo	25208	350	<b>72.02286</b>	28369	431	<b>65.82135</b>	30645	512	<b>59.85352</b>	22834	408	<b>55.96569</b>	18208	379	<b>48.04222</b>
Sanctus	19029	264	<b>72.07955</b>	24592	374	<b>65.75401</b>	31096	520	<b>59.8</b>	23447	417	<b>56.22782</b>	17230	357	<b>48.26331</b>
Agnus	29367	407	<b>72.15479</b>	22358	340	<b>65.75882</b>	24347	414	<b>58.80918</b>	18079	325	<b>55.62769</b>	13687	283	<b>48.36396</b>
<b>Missa O</b>	<b>103849</b>	<b>1578</b>	<b><u>65.81052</u></b>	<b>101436</b>	<b>1705</b>	<b><u>59.49326</u></b>	<b>96927</b>	<b>1813</b>	<b><u>53.46222</u></b>	<b>70071</b>	<b>1392</b>	<b><u>50.33836</u></b>	<b>56005</b>	<b>1259</b>	<b><u>44.48372</u></b>
Gloria	23011	350	<b>65.74571</b>	22812	382	<b>59.71728</b>	22038	412	<b>53.49029</b>	15544	312	<b>49.82051</b>	11620	267	<b>43.5206</b>
Credo	23837	362	<b>65.84807</b>	25237	424	<b>59.52123</b>	24752	461	<b>53.69197</b>	14892	292	<b>51</b>	12529	267	<b>46.92509</b>
Sanctus	32373	490	<b>66.06735</b>	31233	523	<b>59.71893</b>	27969	523	<b>53.47801</b>	21808	436	<b>50.01835</b>	16404	378	<b>43.39683</b>
Agnus	24628	376	<b>65.5</b>	22154	376	<b>58.92021</b>	22168	417	<b>53.16067</b>	17827	352	<b>50.64489</b>	15452	347	<b>44.53026</b>
<b>Missa R</b>	<b>135530</b>	<b>1915</b>	<b><u>70.77285</u></b>	<b>97323</b>	<b>1542</b>	<b><u>63.11479</u></b>	<b>106852</b>	<b>1884</b>	<b><u>56.7155</u></b>	<b>61001</b>	<b>1122</b>	<b><u>54.36809</u></b>	<b>80319</b>	<b>1674</b>	<b><u>47.98029</u></b>
Gloria	31403	442	<b>71.04751</b>	26590	421	<b>63.15914</b>	26889	475	<b>56.60842</b>	17215	318	<b>54.13522</b>	18730	393	<b>47.65903</b>
Credo	32275	454	<b>71.09031</b>	29303	468	<b>62.61325</b>	29900	527	<b>56.73624</b>	12054	222	<b>54.2973</b>	20561	434	<b>47.37558</b>
Sanctus	41270	583	<b>70.78902</b>	24811	391	<b>63.45524</b>	28157	496	<b>56.76815</b>	16090	295	<b>54.54237</b>	22263	459	<b>48.50327</b>
Agnus	30582	436	<b>70.1422</b>	16619	262	<b>63.4313</b>	21906	386	<b>56.7513</b>	15642	287	<b>54.50174</b>	18765	388	<b>48.3634</b>
<b>Missa T</b>	<b>116412</b>	<b>1644</b>	<b><u>70.81022</u></b>	<b>110131</b>	<b>1709</b>	<b><u>64.44178</u></b>	<b>138729</b>	<b>2392</b>	<b><u>57.99707</u></b>	<b>71769</b>	<b>1326</b>	<b><u>54.12443</u></b>	<b>70414</b>	<b>1467</b>	<b><u>47.99864</u></b>
Gloria1	28266	394	<b>71.74112</b>	28348	441	<b>64.28118</b>	27171	467	<b>58.18201</b>	18978	352	<b>53.91477</b>	19785	411	<b>48.13869</b>
Gloria2	28819	402	<b>71.68905</b>	28161	437	<b>64.44165</b>	32167	550	<b>58.48545</b>	16030	298	<b>53.79195</b>	19244	398	<b>48.35176</b>
Credo	31542	446	<b>70.72197</b>	34770	539	<b>64.50835</b>	35664	617	<b>57.80227</b>	15993	299	<b>53.48829</b>	19671	413	<b>47.62954</b>
Sanctus	27127	383	<b>70.82768</b>	22465	350	<b>64.18571</b>	36793	642	<b>57.30997</b>	20540	376	<b>54.62766</b>	16326	340	<b>48.01765</b>
Agnus	28924	413	<b>70.0339</b>	24735	383	<b>64.58225</b>	34105	583	<b>58.49914</b>	19206	353	<b>54.40793</b>	15173	316	<b>48.01582</b>

**Table 7.5(b) – Average pitch of voices (Magnificats and Motets)**

	TR			M			CT			T			B		
	Total	Notes	Average	Total	Notes	Average	Total	Notes	Average	Total	Notes	Average	Total	Notes	Average
<i>Ave dei patris</i>	31557	442	<b>71.39593</b>	31594	485	<b>65.14227</b>	29314	498	<b>58.86345</b>	25071	449	<b>55.83742</b>	20691	430	<b>48.1186</b>
<i>Ave lumen gratie</i>				11869	202	<b>58.75743</b>	9881	172	<b>57.44767</b>	9922	183	<b>54.21858</b>	8136	168	<b>48.42857</b>
<i>Eterne laudis liliium</i>	29987	415	<b>72.25783</b>	23540	361	<b>65.20776</b>	35898	607	<b>59.14003</b>	24129	430	<b>56.11395</b>	19965	405	<b>49.2963</b>
<i>Lauda vivi alpha</i>	40096	545	<b>73.57064</b>	42261	634	<b>66.65773</b>	42599	703	<b>60.59602</b>				25922	523	<b>49.56405</b>
<i>Maria plena</i>	34068	479	<b>71.12317</b>	29437	455	<b>64.6967</b>	38532	655	<b>58.82748</b>	28346	515	<b>55.04078</b>	28821	591	<b>48.7665</b>
<i>O Maria deo grata</i>				39350	602	<b>65.36545</b>	38858	662	<b>58.69789</b>				27697	572	<b>48.42133</b>
<i>Salve regina</i>	31020	444	<b>69.86486</b>	19768	308	<b>64.18182</b>	38571	676	<b>57.05769</b>	40031	711	<b>56.30239</b>	25941	532	<b>48.76128</b>
<i>Mag 'O bone Jesu'</i>	31326	477	<b>65.67296</b>	26310	438	<b>60.06849</b>	30966	577	<b>53.66724</b>	23180	453	<b>51.16998</b>	16088	364	<b>44.1978</b>
<i>Mag Regale</i>	31698	444	<b>71.39189</b>	24769	393	<b>63.02545</b>	35466	625	<b>56.7456</b>	32925	606	<b>54.33168</b>	31541	649	<b>48.59938</b>

**Table 7.6 – Standard deviation of pitch**

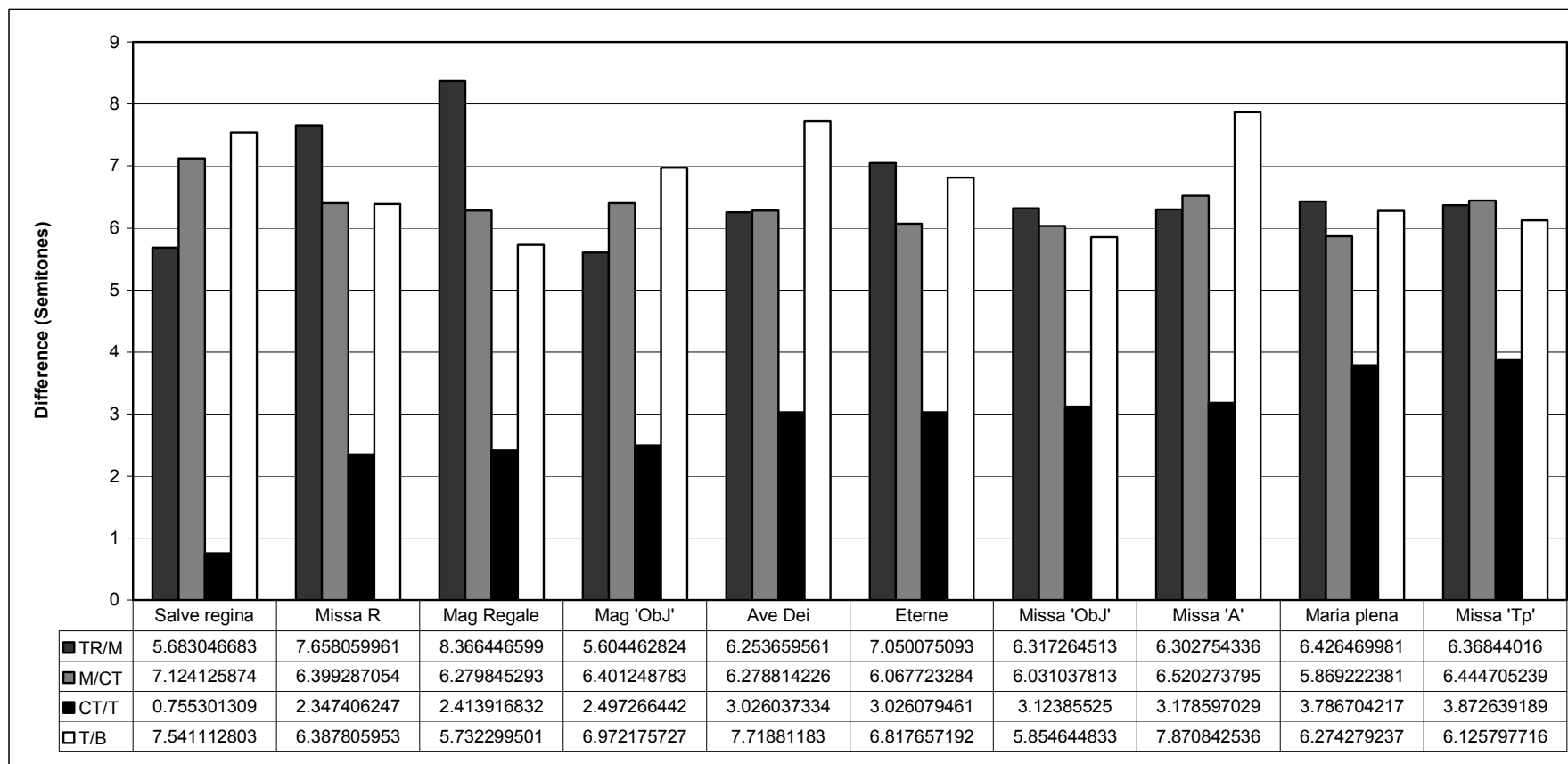
	TR	M	CT	T	B
<b>Missa 'Albanus'</b>	<b>3.36</b>	<b>3.23</b>	<b>4.06</b>	<b>3.46</b>	<b>3.79</b>
Gloria	3.31	2.90	4.07	3.69	3.88
Credo	3.26	3.19	4.46	3.38	3.79
Sanctus	3.34	3.46	3.66	3.45	3.66
Agnus	3.49	3.29	3.9	3.17	3.81
<b>Missa 'O bone Jesu'</b>	<b>3.54</b>	<b>3.07</b>	<b>3.64</b>	<b>3.25</b>	<b>4.57</b>
Gloria	3.56	3.00	3.45	3.29	3.13
Credo	3.62	2.91	3.59	3.10	3.59
Sanctus	3.38	3.05	3.77	3.12	3.3
Agnus	3.62	3.28	3.73	3.37	3.69
<b>Missa 'Regali ex progenie'</b>	<b>3.54</b>	<b>3.3</b>	<b>3.76</b>	<b>3.02</b>	<b>3.99</b>
Gloria	3.42	3.19	3.26	2.96	4.62
Credo	3.59	3.44	3.93	2.67	3.85
Sanctus	3.42	3.24	3.81	3.09	3.98
Agnus	3.70	3.21	4.04	3.27	4.14
<b>Missa 'Tecum principium'</b>	<b>3.77</b>	<b>3.41</b>	<b>4.08</b>	<b>3.27</b>	<b>3.69</b>
Gloria1	3.24	3.15	3.58	3.32	3.81
Gloria2	3.26	3.02	3.76	3.13	3.63
Credo	3.41	4.14	4.52	3.00	3.65
Sanctus	4.99	3.24	4.02	3.29	3.69
Agnus	3.47	3.13	4.21	3.42	3.65
<b>Magnificat 'O bone Jesu'</b>	3.69	3.26	3.66	3.32	3.50
<b>Magnificat Regale</b>	3.44	3.17	3.39	3.21	4.06
<b>Ave dei patris</b>	3.48	3.12	3.16	3.22	3.45
<b>Ave lumen gratie</b>		3.96	3.09	3.41	3.62
<b>Eterne laudis liliium</b>	3.73	3.61	3.87	3.54	3.74
<b>Lauda vivi alpha</b>	3.21	3.17	3.66		3.54
<b>Maria plena</b>	3.56	3.40	3.35	3.38	3.65
<b>O Maria deo grata</b>		3.42	3.73		4.23
<b>Salve regina</b>	3.35	3.45	2.95	2.77	3.29



**Table 7.7 – Clefs of Voice-parts in Manuscripts**

	<b>TR</b>	<b>M</b>	<b>CT</b>	<b>T</b>	<b>B</b>
<i>Eterne laudis lilium</i>	G1	C1	C3	C3	C5
<i>Ave dei patris</i>	C2	C4	C5	F4	F5
<i>Ave lumen gratiae</i>		C4	C4	C5	F4
<i>Gaude flore virginale</i>					F4
<i>Lauda vivi alpha</i>	G2	C2	C4		F4
<i>Magnificat 'O bone Jesu'</i>	C2	C4	C5	F4	F5
<i>Magnificat Regale</i>	G2	C3	C4	C5	F4
<i>Maria plena virtute</i>	G2	C2	C4	C4	F4
<i>Missa 'Albanus'</i>	G1	C1	C3	C3	C5
<i>Missa 'O bone Jesu'</i>	C2	C4	C5	F4	F5
<i>Missa 'O quam glorifica'</i>	G2	C2	C4	C4	F4
<i>Missa 'Regali ex progenie'</i>	G2	C3	C4	C4	F4
<i>Missa 'Sponsus amat sponsam'</i>		C1	C3	C4	C4
<i>Missa 'Tecum principium'</i>	G2	C2	C4	C4	F4
<i>O bone Jesu</i>		C4			
<i>O lux beata trinitas</i>		C3	C3	C4	C4
<i>O Maria/Albanus deo grata</i>		C1	C3		C5
<i>Salve regina</i>	G2	C2	C4	C4	F4

**Chart 7.2 – Difference in average pitch between voices**



GROUP	GR1	GR2	GR3	GR4
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**Table 7.8 – Average, Range and Standard Deviation in MIDI Pitch of Voices**

	TR			M			CT			T			B		
	$\bar{x}$ (P)	X _{range}	$\sigma$	$\bar{x}$ (P)	X _{range}	$\sigma$	$\bar{x}$ (P)	X _{range}	$\sigma$	$\bar{x}$ (P)	X _{range}	$\sigma$	$\bar{x}$ (P)	X _{range}	$\sigma$
<i>Ave dei patris</i>	71.40	15	3.48	65.14	13	3.12	58.86	15	3.16	55.84	13	3.22	48.12	15	3.45
<i>Ave lumen gratiae</i>				58.76	17	3.96	57.45	14	3.09	54.22	16	3.41	48.43	12	3.62
<i>Eterne laudis liliium</i>	72.26	16	3.73	65.21	16	3.61	59.14	17	3.87	56.11	15	3.54	49.30	16	3.74
<i>Lauda vivi alpha</i>	73.57	15	3.21	66.66	17	3.17	60.60	17	3.66				49.56	16	3.54
<i>Magnificat 'O bone Jesu'</i>	65.67	17	3.69	60.07	13	3.26	53.67	15	3.66	51.17	15	3.32	44.20	15	3.50
<i>Magnificat Regale</i>	71.39	15	3.44	63.03	14	3.17	56.75	16	3.39	54.33	14	3.21	48.60	16	4.06
<i>Maria plena virtute</i>	71.12	15	3.56	64.70	17	3.40	58.83	15	3.35	55.04	16	3.38	48.77	15	3.65
<i>Missa 'Albanus'</i>	72.22	16	3.36	65.91	16	3.23	59.39	16	4.06	56.22	15	3.46	48.34	17	3.79
<i>Missa 'O bone Jesu'</i>	65.81	17	3.54	59.49	15	3.07	53.46	17	3.64	50.34	14	3.25	44.48	15	4.57
<i>Missa 'Regali ex progenie'</i>	70.60	15	3.54	63.26	16	3.30	56.67	17	3.76	54.31	14	3.02	48.01	16	3.99
<i>Missa 'Tecum principium'</i>	70.81	15	3.77	64.44	17	3.41	58.00	17	4.08	54.12	14	3.27	48.00	17	3.69
<i>O Maria/Albane deo grata</i>				65.37	16	3.42	58.70	16	3.73				48.42	17	4.23
<i>Salve regina</i>	69.86	15	3.35	64.18	17	3.45	57.06	19	2.95	56.30	17	2.77	48.76	19	3.29

## 7.4 Texture, Tessitura and Text

In several places within Fayrfax's works textural changes are used to highlight particular aspects of the text. Whilst some of these are fairly standard for the period, others are highly innovative. Within the rubrics of the Use of Sarum – the liturgy employed by many major English religious establishments during Fayrfax's lifetime – certain instructions are given to those involved in the performance of the mass.¹⁶ Most of these apply to the celebrant, deacon, and subdeacon, but a number are also relevant to the choir and servers. In addition to the allocation of various sections of chant to groups within the choir, instructions for several liturgical gestures are given. These include processing, turning to the altar, bowing to the altar, and signing themselves with the cross, all of which are to be performed whilst the choir is singing. Given the complex nature of the highly polyphonic musical works performed by the choir during mass, it seems unlikely – from a practical perspective – that all of these actions could be followed. For example, bowing from 'Jesu Christe' at the end of the Gloria until the beginning of the Epistle must have created a number of problems when sharing choirbooks or partbooks. Not only would the view of the music have been restricted, it seems likely that it would have played havoc with the overall ensemble of the group as well.

Within Missa 'Albanus' the 'Jesu' at the end of the Gloria is set to two chords – one for each syllable – over which fermatas are inserted. This would enable the choir to bow to the altar at this particular point as required, and although some institutions may have given some leniency to the choir regarding the prescribed gestures, it is possible that the authorities of St Albans Abbey insisted that some of these should be carried out. Fayrfax's setting would have

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¹⁶ For a comprehensive list of instructions included in the rubrics see: Nick Sandon (ed), *The Use of Salisbury: The Ordinary of the Mass* (Antico: Newton Abbot, 1990) pp 10–39.

enabled the choir to bow at this point at least. The fact that a tutti is employed for the word 'Jesu' alone also stresses its importance.

A similar gesture may have been required within *Salve regina* at the words 'Et Jesum'. Again the texture changes from trio to tutti, and each syllable is set with a fermata over the top to emphasize the words, and to enable the choir to bow. Two other changes of scoring are used in *Salve regina* for specific reasons. Towards the end of the work, troped texts are inserted, as was common at the time. Fayrfax chooses to emphasize the non-troped sections – 'O clemens' and 'O pia' – by scoring them for all five voices, and using fairly slow-moving notes, whilst the troped text is set for various combinations of reduced groups. The practice of drawing attention to words that were considered to be of particular importance seems to be fairly common within Fayrfax's works. In *Ave dei patris* two methods are used to do this, both of which accentuate the salutation 'Ave'. The first method is the same as that seen for the composer's setting of 'Jesu' in the works discussed above. The second occurs in the extended duet for TR and CT towards the end of the work. Here the duet straddles two stanzas of the text, both of which begin with the word 'Ave'. In order to clearly identify the beginning of the new stanza, Fayrfax changes the scoring for the word 'Ave'.

The final example of single words or short phrases being emphasized occurs in *Eterne laudis liliium*. As has already been noted, Fayrfax received a payment for this work from Elizabeth of York in St Albans on 28 March 1502. Both this and the acrostic suggest that Elizabeth herself commissioned the work. The text is particularly unusual, containing various names from the family tree of St Anne – the mother of the Virgin Mary – making particular reference to the female line of Christ's genealogy.¹⁷ One of the names included is that of

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¹⁷ Andrew Carwood, sleeve note to: *The Works of Robert Fayrfax* Vol. 3, The Cardinal's Musick, cond. Carwood (CD GAU 160).

Elizabeth, mother of John the Baptist. This section of the work is set for a CT/T/B trio. However, the word 'Elizabeth' is also sung by the upper two voices, in a syllabic and imitative way, in order to bring attention to it. By doing so, it seems highly likely that Fayrfax was emphasizing the name of the work's patron whose name appeared within the text.

The relationship between text, texture, and tessitura in *Maria plena virtute* is different from those examples cited above. Throughout the work, several changes in scoring – particularly reductions – are made in order to elucidate particular passages of the text on a larger scale. *Maria plena virtute* is unusual in that it is one of the very few polyphonic works of the period in England to set the words of Christ, here those spoken from the cross. Clarity of text seems to be of particular importance within the work, and this is achieved in a number of ways. Generally the writing is far less melismatic than in the composer's other works, and much less so than in works by his contemporaries. Fayrfax creates a musical texture 'from which all that is inessential seems to have been banished; the music exists solely to animate the words and give them greater potency'.¹⁸

In terms of texture, Fayrfax creates textual clarity in two different ways. The first of these is by reducing the number of voices to the bare minimum – two in the case of early Tudor repertoire. The best example of this within *Maria plena virtute* is the TR/CT duet beginning with the words 'Sicut tuus filius petiit'. The reduction in the number of voices – together with the widespread use of both strict and rhythmic imitation, the syllabic setting, and the fact that no overlapping of text occurs between the five sections of text – gives added weight to the words. Fayrfax almost certainly combines these techniques at this point in order to draw attention the first statement of Jesus' words in the poem:

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¹⁸ 'Introduction' to Robert Fayrfax, *Maria plena virtute* (ed. Nick Sandon) (Antico Edition: Newton Abbot, 1996) p i.

'Pater dimitte ignorantibus'. The near-homophonic nature of some sections also clarifies the text. This is particularly clear in the last stanza of the poem, beginning with the words 'O dolorosa mater Christi'. Here the focus of the text changes; the previous stanzas have been a commentary on Christ's crucifixion, whereas the final stanza is a personal supplication to the Virgin Mary, particularly with the phrase 'Ora pro me, regina celi'. The homophonic texture, and the clear sectionalization of individual phrases – as seen before – emphasizes the personal nature of the text. Homophony is also used in order to introduce Christ's words in the lower voice quartet at 'Dixit Jesus dilectionis'.

## 7.5 Conclusion

Within Fayrfax's surviving five-part works a clear manipulation of different combinations of scoring exists; some of these occur for structural reasons, whilst others seem to be motivated by generic or even possibly rhetorical considerations. The ways in which these works are subdivided into sections indicated by a change in scoring is varied. Within the masses a number of patterns can be identified. The manipulation of vocal groups within these multi-movement works functions as a structural and cohesive device for the work as a whole. Two contrasting scoring structures can be seen in the motets: within some works – such as *Salve regina* – changes occur frequently, and few patterns can be seen, whilst in others only a small number of vocal combinations are used, many of which include the juxtaposition of high and low trios – such as *Eterne laudis lilium*.

Transitions between sections of scoring have also been examined. This reveals that seven different types are present within Fayrfax's works. Clear patterns emerge from both the placement of section ends and the types of textural transitions that articulate them. The placement of ST1s within the five

five-part masses suggests that the composer followed a pre-existing structural scheme for each movement. The choice of some STs is governed by musical and textual concerns, such as a new entry of a cantus firmus, whilst on other occasions insufficient evidence exists to suggest a reason for the choice.

Using computer-aided analysis and descriptive statistics it is possible to compare the mean pitch of CT and T, a technique used previously within the analysis of sixteenth-century vocal polyphony as an index of stylistic change. Clear stylistic subgroups emerge from an analysis of the contrasting pitch levels of CT and T, especially when taken together with supplementary evidence drawn from the tessituras of the outer voices. The way in which voices are treated in terms of tessitura is determined by the presence of a cantus firmus. Within the masses that are based upon a pre-existing chant, T has the smallest standard deviation, whilst in those that do not rely upon such material it is M.

Through a close examination of Fayrfax's works it becomes clear that the relationship between music and text is close-knit. The placement of different combinations of scoring is used in a number of ways to stress important phrases or individual words within the text. In some cases these may have been influenced by liturgical gestures prescribed within the Sarum rubrics, whilst in others they are used to draw attention to the work's patron, or to indicate major textual articulations.



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## CHAPTER 8: Motif, Imitation and Free Counterpoint

### 8.1 Introduction

The melodic fabric of any early Tudor polyphonic work can be split into four categories: (1) pre-existing material; (2) imitation; (3) motivic material; and (4) free counterpoint. All of these categories can have a certain amount of permeability; motifs often appear imitatively, around which the other voice(s) sing freely-composed material. The use of pre-existing material in Fayrfax's surviving sacred repertoire – whether it is the integration of a cantus firmus, or another polyphonic work – has been addressed in detail in Chapter 4, and so this chapter will concentrate predominantly on the remaining three categories.

The first aspect to be addressed is how motif, imitation, and free counterpoint can be defined. Motif is the repetition of melodic or rhythmic material – or a combination of both. This repetition can occur on a number of different levels, locally, regionally, and universally – as demonstrated in my investigation of rhythmic coherence in the Benedictus of Missa 'Albanus' in Chapter 5.¹ It can be present in one or more voices over different temporal distances. Imitation is the process whereby one voice states a melodic fragment, which is then repeated in one or more of the other voices, either at the same – or more frequently – at a different pitch. In all cases the first statement (antecedent) and the subsequent entry (consequent) overlap. The consequent entry may not repeat the antecedent exactly – rhythmic and melodic adjustments may be made in order to avoid dissonances, crossing of vocal lines and awkward part-writing. As previously stated, the distinction between motivic and imitative material is not always clear-cut. However, the

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¹ The terms 'local', 'regional', and 'universal' are here only used as metaphors for place.

overlapping of material is the primary way in which they can be separated. Where similar patterns are used within voices separated by a temporal distance, they will be classified as motifs. For the purposes of this study – to begin with at least – free counterpoint is what remains once motivic, imitative, and pre-compositional material has been removed. However, after examining Fayrfax's works in detail this definition may have to be refined.

In view of the fact that this area of investigation encompasses a large body of musical material, and that it remains almost entirely neglected from an analytical perspective within this particular repertoire, it is beyond the scope of this study to provide a detailed analysis of all of Fayrfax's surviving works. As a result, I will begin by outlining some of the conceptual and methodological issues that must be addressed, before examining a number of short sections covering two-, three-, and five-part contrapuntal writing. Having done so, I will identify any patterns that emerge from the study, and explore the contrapuntal relationship between different compositional textures.

## 8.2 Questions of Concept and Method

Several methodological problems are encountered when attempting to address issues regarding motif, imitation, and free counterpoint. One of the ways in which a basic grounding for the analytical method can be achieved is by posing a series of questions. Although it may not be possible to answer all of these questions within this particular study, it serves as a useful starting-point. Having provided a brief definition of the primary areas of analytical interrogation, I shall first address each individually, before attempting to find ways of investigating how the combination of these factors can be unravelled within the overall fabric of the musical text.

One of the first things to consider is the relationship between free counterpoint and imitative counterpoint, particularly the importance given to the latter. Is imitation used as a primary structural device, or is it merely decorative? Early Tudor music is generally regarded as relying less heavily upon imitation than contemporary continental music, particularly that of Josquin. According to Hugh Benham imitation is 'the key Renaissance technique', providing a basic sense of 'musical unity' between individual voices in a polyphonic work.² However, when it comes to the works of Fayrfax's contemporaries – and the preceding generation of English composers – Benham states that imitation 'still occupies a very limited place'.³ He continues:

In early sixteenth-century English music, particularly when we come to Taverner, it [imitation] is more frequently used, but it generally retains an incidental character. We may see it almost as decoration of a basically differentiated structure, something 'grafted on' rather than something which actually pervades or generates the music.⁴

If, as Benham suggests, imitation is only a decorative device, then what is it decorating? It may be worth recalling some of the issues I addressed previously concerning pre-compositional planning. Many of Fayrfax's works are built upon pre-existing models and arithmetical proportions and symbolism, or a combination of both. If the basic structure of an entire work – or mass movement – is pre-determined, then is everything else, including imitation, not an elaboration of this underlying fundamental structure? One could argue that imitation-free counterpoint reveals a better display of compositional prowess than imitative counterpoint: imitation can always be adapted if it does not fit

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² Hugh Benham, *Latin Church Music in England 1460–1575* (Barrie and Jenkins: London, 1977) p 4.

³ Ibid.

⁴ Ibid.

grammatically with the other voices, whereas freely composed material involves a combination of grammatical coherence and invention. Taking these points into account, should one question the value placed upon imitation within the early Tudor repertoire?

A preliminary investigation of Fayrfax's works reveals that imitation occurs most frequently at the beginning of new sections, or phrases of the text. In many ways, it is used in order to draw attention to the start of formal sections or rhetorical segments in the same sort of way as illustrated capitals in contemporary manuscript sources. In theoretical terms, the imitative counterpoint is considered 'semiotically marked'.⁵ If this is the case, then the free counterpoint is 'marking' the temporal space between points that have been pre-ordained – either in terms of an overall arithmetical structure, or the presence of pre-existing material – and is therefore 'semiotically unmarked'. However, if the arithmetically-derived proportions and cantus firmus are considered to be of greatest importance, then it is this material that becomes 'marked' and the imitative counterpoint 'unmarked'.

These issues regarding the relationship between imitative and non-imitative counterpoint bring about a broader question: is it valid to perceive a hierarchical compositional structure in music of this period? Is the pre-existing material more central to the work as a whole than the free counterpoint? The cantus firmus provides a structural framework for a composition, but it is the free counterpoint that makes it a work of polyphony, rather than just chant, and therefore could be considered to be of paramount significance.

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⁵ The concepts of 'semiotically marked' and 'semiotically unmarked' are taken from the work of Robert Hatten. See: Robert Hatten, 'The Opening Theme of Beethoven's "Ghost" Trio: A Discourse in Semiotic Method', *Applied Semiotics/Sémiotique appliqué* 2/4 (1997) pp 27–40. For an extended discussion see: Robert Hatten, *Musical Meaning in Beethoven: Markedness, Correlation, and Interpretation* (Indiana University Press: Bloomington, 1994). From a Gadamerian perspective, one could ask whether it is the free counterpoint, or imitative counterpoint that does not conform.

The same conceptual obstacles are encountered when examining imitation within Fayrfax's work. One might naturally assume that the antecedent entry has hierarchical superiority. However, in Chapter 4 I demonstrated that within Missa 'Tecum principium' Fayrfax makes use of pre-imitation. Where this technique is used, then it is surely the consequent entry that was decided upon first, and so the first entry becomes hierarchically inferior, even though it has temporal precedence. Within the same chapter, and same work, I also showed that the relationship between pre-existing and imitative material is not always a constant one; in some cases the imitation must be altered so as not to create a dissonance with the cantus firmus, whilst on other occasions notes of the cantus firmus are omitted so as not to clash with the imitative counterpoint.

In Fayrfax's music free counterpoint can occur in two forms; music written against a cantus firmus and music not written around cantus firmus, where all voices are freely composed. A series of different questions arise from each scenario. Where a cantus firmus is present: (1) can the free voices be understood as 'composing out' the contour of the chant with diminutions?; (2) are the free voices derived motivically from the chant?; (3) are the contours of the free voices circumscribed intervallically by the contour of the chant?; or (4) are combinations of all of the above used? Where no pre-existing material is present, then what is driving the contrapuntal lines? Can a hierarchy of voices be identified?

Having provided a definition of the terms to be examined – thereby identifying their general theoretical characteristics – it is now necessary to provide a methodological framework for identifying them. Although originally I had hoped that computer-aided analysis would play a major part in identifying motivic and imitative material this has not been possible – as explained in Chapter 3 – and so a visual evaluation of the scores will have to be the primary method of investigation. As a result, it is not identifying the different types of

contrapuntal material that poses the greatest problem – conceptually that is fairly straightforward, given the definition of each, and the resulting discussion above – but finding suitable ways of recording them, and explaining the way in which they interact. For example, does Fayrfax make extended use of motivic material in order to create a sense of coherence between the voices, to decorate a slow moving contrapuntal rate of change, or a combination of both? If so, how does he do this, and how can it be quantified?

One method for investigating all of these issues – particularly relating to possible hierarchical relationships – is to provide a reductive analysis of several representative musical examples. By identifying passing notes, neighbouring notes, arpeggiations, unfoldings, consonant skips, and accented and unaccented passing notes, it may be possible to examine whether any hierarchical relationships exist, and at what level. Many of these reductive terms are taken from Schenkerian analytical techniques. Indeed, a number of post-Schenkerian analysts have attempted to apply Schenkerian analytical methods to renaissance polyphony. The purposes of this approach can be twofold: (1) to demonstrate that renaissance polyphony is a precursor of tonality – in that it displays certain tonal characteristics; and (2) to show that renaissance polyphony is in fact tonal. The primary exponents of these approaches are Felix Salzer – one of Schenker's pupils – and Saul Novack.⁶ In his analysis of Dufay's second setting of the Marian antiphon *Alma redemptoris mater*, Novack treats the work as a tonal composition in C major, and proceeds to discuss the work based upon the principles of tonality without providing any clear reasons for doing so.⁷ Daniel Leech-Wilkinson takes a reductive approach to his

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⁶ Felix Salzer, 'Tonality in Early Medieval Polyphony: Towards a History of Tonality', *The Music Forum* 1 (1967) pp 35–98.

⁷ Saul Novack, 'Guillaume Dufay: *Alma redemptoris mater* (II)' in Mark Everist (ed.), *Models of Musical Analysis: Music before 1600* (Blackwell: Oxford, 1992) pp 93–113. For further discussion of this article – as well as those by David Stern and Cristle Collins Judd within the same book, see: B. D. Collingwood, *A Critique of Three of the Essays on the Analysis of Early*

analysis of Machaut's *Ros, Lis*, as discussed in Chapter 3. Leech-Wilkinson's analysis is different from those of many other scholars who have taken this approach, in that the author believes that the underlying structure of Machaut's work is not based upon the principles of tonality, but constructed around a series of hexachords.⁸

Although some of the terminology used has been drawn from the analytical procedures used to examine tonal music of the 'common-practice period', I am not suggesting that each work is a large-scale prolongation or composing-out of a chord. My purpose in using a reductive technique is to examine the internal workings of Fayrfax's contrapuntal polyphonic writing, and to explore the possibility that hierarchical relationships exist between voices at a local level.

A reductive analysis usually investigates both vertical and horizontal relationships between voices. In music of the early Tudor period, the horizontal nature of individual contrapuntal lines usually takes precedence over the vertical nature. To some extent I do intend to address the vertical relationship between voices, not because I believe that early Tudor works are based upon tonal principles, but that concepts of consonance and dissonance share some similarities with tonal harmony, particularly in that they are conceived horizontally. In view of this the following questions can be considered: (1) how do the voices relate to one another both in vertical and horizontal terms?; (2) does the relationship between voices remain the same in both semi-choir and tutti sections?; (3) how does Fayrfax explore the intervallic limitations set by a slow-moving voice or intervallic aggregate?; and (4) how does the composer use dissonance?

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*Music Presented in Mark Everist (ed.), Models of Musical Analysis: Music before 1600 (Blackwell: Oxford, 1992), (Unpubl. MA study: University of Exeter, 2001).*

⁸ Daniel Leech-Wilkinson, 'Machaut's *Rose, Lis* and the Problem of Early Music Analysis' *MA 3/1* (March 1984) pp 9–28.

A number of techniques from semiotic methods of analysis can be used to investigate Fayrfax's motivic writing. Local and regional motifs should be fairly easy to identify visually, in that they appear only in short sections. The most effective way of identifying motifs used over a larger time-span is to catalogue each motif that is found, and to cross-reference this catalogue with each work. After recording and labelling each motif – whether it be rhythmic, melodic, or a combination of both – matching patterns should be fairly straightforward. As stated above, it will not be possible to provide a detailed motivic investigation of all of Fayrfax's surviving works. However, if similar motivic groups appear within a selection of short polyphonic sections, then this may suggest that the practice is more widespread. This theory can be confirmed or denied by spot-checking other works not studied in detail.

### 8.3 Analysis of Different Contrapuntal Textures

In order to investigate these aspects within Fayrfax's works, I have decided to examine in detail two sections of two-, three-, and five-part writing. Choosing which particular sections to study is not a straightforward decision. A number of works can be eliminated from the investigation in view of the difficulties that arise when comparing them with other works: Missa 'O quam glorifica' – because of its unusual mensural scheme; all of the works that survive in an incomplete or partial state; and works composed for fewer than five voices.

In Chapter 4 it became apparent that the cantus firmus technique is almost entirely confined to tutti sections. As a result, one of the two tuttis must be based upon a cantus firmus. In order to address the possibility that these sections are an elaboration – or composing out – of the cantus firmus, I will look in detail at the 'qui tollis' tutti from the Agnus Dei of Missa 'Albanus'. Here T carries the 'Albanus' motif. Not only are the intervallic relationships between



pitches the same – albeit on different initial pitches – but identical patterns of duration (in semibreves) are also used in each statement (2/2/3/1/4/4).⁹ In view of this, it seems likely that the vertical aggregates are almost entirely pre-determined by the tones of the cantus firmus. Chapter 7 demonstrated that three-part writing predominates in Fayrfax’s sacred music, whilst two- and four-part textures are used relatively sparingly. Choosing suitable three-part sections is problematic in that they occur most frequently, and the widest combinations of voices are used. In view of this, I have simply chosen one example of each of the most frequently occurring combinations – TR/M/CT and CT/T/B. Works studied in detail are listed in Table 8.1, which shows the title, incipit and scoring. These sections are reprinted in full in Appendix 1 of Volume 2.

**Table 8.1 – Sections of Free Counterpoint Studied**

TEXTURE	2-PART	3-PART	5-PART
<b>SECTION</b>	<p><b>[SRSA]</b></p> <p><i>Salve regina</i> (Exaudi preces...)</p> <p>TR/T</p>	<p><b>[ADS]</b></p> <p><i>Ave dei patris filia</i> (Ave dei patris...)</p> <p>TR/M/CT</p>	<p><b>[SRSB]</b></p> <p><i>Salve regina</i> (O pia)</p> <p>TR/M/CT/T/B</p>
	<p><b>[MRS]</b></p> <p>Missa ‘Regali’ Sanctus (qui venit...)</p> <p>TR/B</p>	<p><b>[MPS]</b></p> <p><i>Maria plena virtute</i> (Jesu dicens...)</p> <p>CT/T/B</p>	<p><b>[MAA]</b></p> <p>Missa ‘Albanus’ Agnus dei (qui tollis...)</p> <p>TR/M/CT/T/B</p>

It is often difficult to identify vertical triadic relationships in two-part counterpoint. As only two voices are used, complete triads are never heard synchronously, although some are outlined by the use of consonant skips. As a result, I primarily intend to examine the horizontal nature of the two vocal lines, and the relationship between them.

⁹ In the final statement the last value is extended to 6 semibreve beats, but this will be examined in more detail at a later stage.

### 8.3.1 Two-Part Counterpoint

In general, *Salve regina* makes considerable use of imitative counterpoint, and the TR/T duet beginning with the words 'Exaudi preces...' – included as Example 8.1(a) – is no exception. This section consists of two lines from the troped portion of the text: 'Exaudi preces omnium' (bars 145-52); and 'ad te pie clamantium' (bars 153-62). In this example imitation has two functions: (1) to introduce each new line of text; and (2) to create a sense of coherence in long melismatic passages. Every imitative phrase within this section occurs at the octave, and the majority of the phrases are altered either rhythmically or melodically for a number of different reasons.

The section can be split into six subsections (SRSA1-6), some of the most important features of which I will now discuss. SRSA1 (bars 145-48) begins with an imitative phrase, TR following T four semibreve beats later. The  $b^{\flat 0}$  and  $a^0$  at the end of bar 145 act only as a decorative device for the  $c^1$ - $b^{\flat 0}$  motion, as they do in TR a bar later, and as a result are not essential to the overall melodic progression in either voice. The overlap of seven semibreves between the voices means that the second part of the antecedent phrase must be consonant with the beginning of the consequent phrase, and therefore also consonant with itself. Fayrfax achieves this by alternating long and short note values. By doing so, the semibreve  $b^{\flat 0}$  and  $c^1$  in T provide a 6-5 intervallic relationship with the opening  $g^1$  in TR. When this part of the phrase is heard for the second time in TR, T states the final two pitches of the imitative phrase, providing a 3-5 motion. The final note lasts for two semibreves in T, whilst in TR it lasts for three. A temporal span of six beats must therefore be covered by free counterpoint in T whilst TR concludes the phrase. This free counterpoint is conceived fairly simply, being two pairs of consonant skips –  $f^0$ - $c^1$ , and  $b^{\flat 0}$ - $d^1$ .

The downward motion of TR in breves, through the interval of a fourth, at the start of SRSA2 (bars 149-50), and the corresponding  $d^1$ - $c^1$  movement in T

creates another sequence of 6-5 intervallic relationships. This pattern is then broken with the addition of a passing  $d^1$  in T, which continues on the upward trajectory to  $e^{b1}$ . The movement back down to  $d^1$  is probably determined by TR, Fayrfax wanting to avoid a unison  $f^1$ . The consonant skip to  $b^{b0}$  provides a linking point to the SRSA3 (bars 151-2).

A move towards a cadential point is suggested in the middle of bar 151 by the dissonant seventh between the voices, which then moves through a 6-5-6 pattern, thereby suggesting a 6-8 cadence onto  $B^b$  at the beginning of 152. However, Fayrfax avoids this cadential point by making T fall from  $c^1$  – which created the initial dissonant seventh – through  $b^{b0}$ ,  $a^0$ , and on to  $g^0$  as TR reaches its  $b^{b1}$  at the beginning of the following bar. Fayrfax needs to avoid a cadence here so that a rest can be inserted in TR before the new imitative entry with the words ‘ad te pie...’. If a cadential point had been introduced, then it would have been more difficult to fill the gap where TR is silent. By employing this technique, Fayrfax also continues the forward motion of the section; a complete cadence only occurs at the very end at the double bar.

SRSA4 (bars 153-5) marks the start of the second textual phrase. As with a great deal of Fayrfax’s works, this new section begins with an imitative phrase. In contrast to the first textual phrase – heard in SRSA1 – the antecedent entry appears in TR, and is followed four beats later by T. The melodic material is first constructed around a series of rising fourths, which are followed by a held D – for three semibreves in TR, and four in T – before closing with a falling tone. The D in the antecedent entry is consonant with the first three notes of the consequent entry. The move to  $c^2$  in TR occurs to avoid a D sounding for too many consecutive beats in both voices, to provide the contrary motion between the parts, and to act as a passing note to the  $b^{b1}$ . This downward motion continues towards the end of SRSA4, indicated by a new motivic and imitative phrase beginning in T, and the insertion of a rest in TR.

Motif *M1* with which SRSA5 begins (the particular instance of which is identified as SRSA5^q) is found throughout Fayrfax's works. The main feature of the motif is a rising skip of a third. This is decorated by a rising tone beforehand, and followed by a falling third, via a passing tone. The rising third is most frequently employed as a consonant skip, as it is here in bar 156. The motif is then treated imitatively (SRSA5^p); TR follows the antecedent T entry at the octave, creating a 1.5 semibreve overlap. Whilst at first it seems that the consequent entry has been rhythmically altered at the start, further examination reveals that it is the antecedent entry that has been modified. This is confirmed by the repetition of *M1* – again imitatively and with the same temporal overlap – in bar 158. The rests in both voices punctuating the melodic line clearly draw attention to each of the imitative entries. These rests are of particular note when the preceding material is taken into account. The presence of *M1* in bar 158 is the second half of a longer imitative phrase (SRSA5^s) beginning in the previous bar, and so the rests themselves are part of that phrase. Working backwards further, it can be seen that SRSA5^p and SRSA5^r form a complete phrase, and that SRSA5^q and SRSA5^s are adjusted rhythmically and melodically in order to accommodate the phrase in the upper voice. One of these adjustments is the temporal distance between antecedent and consequent phrases from 2.5 semibreves to 1.5 semibreve beats.¹⁰ Fayrfax achieves this by inserting a 'bridge' on the final beat of bar 156 between SRSA5^q and SRSA5^s. Consisting of an a⁰ and passing b⁰, filling the gap created by the change in temporal distance. This suggests that the consequent entry was conceived before the antecedent entry.

The beginning of the final subsection (bars 159-162) is structured around motif *M2*. First heard in TR, the consequent phrase is rhythmically altered, and

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¹⁰ This is the case if the entry of SRSA5^q in the T is considered to occur only in the second half of beat 4 in bar 155, as suggested by subsequent entries.

d¹ semibreve added before. The beginning of the final phrase in TR (SRSA6^z) deserves particular attention. This begins with the first three pitches of *M1* before a transmutation into *M2* occurs, the c¹ semibreve acting as a common tone for both motifs. The falling pattern is then extended with the inclusion of g¹. A rhythmic diminution of bar 149 then occurs with a pair of 6-5 progressions. The whole section concludes with a fairly typical 8-6-7-8-6-8 cadential progression.

In terms of the large-scale planning of sections, the rise in tessitura, increase in rhythmic intensity, and extended use of motif and imitation in both voices in SRSA5 creates a sense of climax. On no other occasion does Fayrfax use f² and f¹ in TR and T respectively. This is particularly true considering that the general characteristic of SRSA6 is a drop in tessitura and decrease in rhythmic intensity.

In complete contrast to the example discussed above from *Salve regina*, the TR/B semi-choir passage from the Sanctus of Missa 'Regali ex progenie', (bars 137-51) —Example 8.1(b) — makes almost no use of imitation. In view of this another approach needs to be taken in order to investigate the way in which it is structured in terms of the free counterpoint, and motivic integration — if any occurs. One of the most productive ways of doing this is to first examine the large-scale structure.

The section can be further divided into three subsections (MRS1-3), indicated by a combination of the general shape of melodic line in TR, and the insertion of rests. Each of the phrases in TR shows a clear rise and fall in tessitura, followed by a minim rest — or change in scoring in the case of MRS3. After close examination it becomes apparent that it is the manipulation of the tessitura that provides the primary structural function. The first 3.5 bars (MRS1^a) provide the basic framework of the entire section in diminution. The rise to d² by step and by skip, the eventual rise of the line to f², incorporating motif *M1* — as

heard in *Salve regina* – and subsequent fall in tessitura are common to MRS1^a, and to the section as a whole. Subsections MRS2-3 provide a teleological unfolding of MRS1^a. Before this occurs, Fayfax provides a linking passage to MRS2, much of which is based upon MRS1^a. The primary structural voice here is B, consisting of a juxtaposition of motifs *M3* and *M1*. *M3* is used in imitation, B following TR a semibreve later. However, the motif is altered melodically in TR to avoid a dissonance on the first beat of bar 143 between  $g^1$  in TR and  $f^0$  in B.

MRS2 is structured around a series of repeated  $d^2$  pitches in TR. On each occasion the note is approached in a different way: (1) by skip and then step ( $g^1$ - $c^2$ - $d^2$ ); (2) by a skip of a third; (3) by step through the interval of a fifth; and finally (4) by a skip of a fourth. Fayfax also manipulates the durational and accentual patterns. On all but the final repetition,  $d^2$  falls on the half beat and is preceded by a minim. In contrast, the final occurrence falls on the beat following a semibreve  $a^1$ . This, combined with the following descent from  $d^2$  by step through a fifth, creates a sense of climax within the phrase. A 6-8 cadence to G is expected on beat three of bar 145 at the end of MRS2, but Fayfax avoids this by inserting a rest in B and  $a^1$  in TR, thereby continuing the melodic line and providing a transition to the final subsection.

The melodic material in TR in MRS3 is based predominantly on motif *M4*. After an initial 7-6 intervallic relationship, TR has a rising skip of a fourth, followed by two rising steps. A similar skip/step pattern appears at the start of MRS2, but rather than falling downwards to  $b^2$ , the phrase in MRS3 continues an upward trajectory to  $e^2$  before falling. Bar 148 provides the climax of the phrase, and the entire section. Fayfax achieves this through a rise in tessitura to  $f^2$ . The approach to this note merits some attention. The  $d^2$ - $e^2$ - $c^2$  pattern is heard a step lower at the beginning of MRS2. Rather than falling by a third and then rising again by the same interval as would be expected if an exact

repetition were to take place, the line falls by a third and then rises by a fourth to  $f^2$ . The fact that it also occurs on the beat adds to the climax. For the first part of the subsection B has a decorated  $c^0$  pedal. Upper and lower neighbour notes are inserted where necessary in order to avoid dissonances with the upper voice. Bars 149-50 are heavily based on *M4*. The motif appears in a sequential pattern in TR, whilst it is juxtaposed with *M1* in B, before both voices close the section with a decorated 6-8 cadence.

### 8.3.2 Three-Part Counterpoint

The large-scale structure of the opening TR/M/CT section of Fayrfax's *Ave dei patris filia* can be split into four subsections (ADS1-4), defined by textual phrases and cadential points. In general terms, the musical material, and its relationship with the text in particular, is very different from the two two-part examples discussed above. In view of the highly syllabic setting, and the amount of text that is set within the semi-choir passage, the cadential points occur fairly frequently. The fact that all voices come to rest on the final syllable of each line of text at the same time suggests that this was decided upon in the pre-compositional stages. It is not possible to say for certain whether or not the cadential pitches were pre-determined as well. There is no attempt to prolong cadences as seen in the two-part counterpoint, in many ways the opposite occurs. The melodic material therefore acts as a vehicle to move from one cadential point to another.

The use of long imitative phrases is restricted by the frequency of cadential points. However, imitation is not entirely neglected, since the first three subsections open with imitative entries. Within ADS1 this occurs between CT and TR at the octave, and at a temporal distance of six semibreves beats. Whilst CT states the first two notes of the phrase, M has a series of consonant

skips, outlining an  $a^0-c^1-e^1$  triad. The imitation between the voices is not strict. It is not possible to identify which voice has been altered if this subsection is studied in isolation. By examining ADS3 this becomes clearer. The strict imitation between TR and CT with which ADS3 opens also contains *M5*. A falling  $c^1-b^0$  step precedes the motif in the antecedent CT entry, before being followed by TR, an octave higher and at a temporal distance of two semibreves. The imitative use of *M5* within ADS3 suggests that it is CT that has been altered in ADS1, TR conforming to the pitches set out in *M5*. The pitches are altered in CT so as not to create consecutive octaves in bar 4, which would have occurred given the temporal distance of six semibreves between the voices.

Two separate hierarchical levels are present between the voices. The first relates to the text, and the second concerns the function of the voices at cadential points. The text acts as a primary structural determinant on a number of different levels throughout the section. On many occasions the textual and rhythmic unanimity between pairs of voices gives added clarity to the text. Bars 8 (TR/CT) and 13-17 (M/CT) provide the clearest examples of this technique. This pairing frequently occurs at the interval of a tenth or third between TR/CT and M/CT respectively. Although the entry between the two lower voices at the start of ADS3 begins with a tenth this is then altered: first by the delayed downward motion of M by a minim, creating a 4-3 suspension; and second by the upward step ( $d^1-e^1$ ) also in M. The second of these alterations occurs in order to avoid consecutive octaves with the consequent imitative entry in TR.

At three of the four major cadential points, the lower two voices provide the structural framework. A 6-8 motion between M and CT occurs at the end of ADS1. The approach to this begins in the previous bar; the initial third between the voices moves in contrary motion to a sixth, via a passing note ( $c^1$ ) in M. This must then resolve outwards to an octave, coinciding with the end of the textual phrase. A similar process is found at the end of ADS4 (bars 24-5). The voices



begin with the same initial interval of a third as bar 8 – and at the same pitch – but rather than moving directly to  $d^1$  via a passing note, M skips upwards by a fourth to  $e^1$ . The dissonant seventh created by the downward step of CT must then be resolved outwards, before falling by a third to create the sixth needed before the final vertical aggregate. This process can be seen as a decoration of the basic 6-8 motion. The final cadence of ADS2 is also approached by a 7-6 progression between M and CT. Two decorative crotchets are added to provide an increase in rhythmic intensity in M, but are not essential to the structural framework. However, the cadential progression is different from the previously cited examples, in that the sixth does not resolve outwards to an octave. The rise by step to  $e^1$  does occur in M, but CT skips a fourth downwards to  $c^0$ . The final major cadential point to be discussed – with which ADS3 closes – is unusual for this section in that it is not approached by the interval of a sixth.

The sectionalization of the CT/T/B trio from *Maria plena virtute* (Example 8.2(b)), is determined primarily by the functional relationship of the phrases, rather than by text or cadential planning. Each of the three subsections into which bars 161-80 can be broken down employs different compositional techniques. These subsections are not clear-cut, a certain amount of overlap occurring between them. MPS1 (bars 161-3) begins in B with a phrase falling by step through the interval of a fourth ( $g^0$ - $d^0$ ). This is then treated imitatively: a beat later, and fifth higher in T; and then four semibreves after the initial B phrase, and a seventh higher in CT. The second note of the CT phrase is altered from  $e^{\flat 1}$  to  $c^1$  in order to avoid a tritone with  $a^1$  in T. A similar imitative pairing of voices to that examined in *Ave dei patris* is then encountered, the  $d^0$ - $f^0$ - $c^0$  phrase in B being repeated in parallel thirds in T/CT, a fifth and seventh higher respectively, and at a temporal distance of two semibreve beats.

MPS2 is characterised by a series of slow moving vertical aggregates, beginning with the words of Christ spoken on the cross: 'Deus meus, quid

dereliquisti'. Within each of the three voices a rising interval of a third is heard, creating a series of imitative phrases, composed of consonant skips. After the antecedent phrase in B, both consequent entries are altered: T melodically, so as not to create a prolonged  $b^0$  unison with CT; and CT rhythmically – the final two notes of the phrase being changed to semibreves, rather than breves – so that all voices end simultaneously. The most striking element of bars 166-68 is the accented 6-5 motion in the second half of bar 167. Until that point only one other dissonance has been heard – the same intervallic motion in bar 162. Whilst the first example occurs as a result of an imitative phrase – and is to some extent masked by the entry in CT – the minor sixth in 167 may have been included to emphasize Christ's anguish expressed in the words: 'My God, why hast thou forsaken me?'. Although at first it may seem unlikely that Fayrfax employed this technique for textual affect, by examining one of the phrases in MPS3 (bars 172-80) it can be seen that this technique occurs again with the next of Christ's words within the *Maria plena* text, 'Consummatum' ('It is finished'). The way in which the minor sixth is set up is different in both cases. In the first, it occurs as a passing note between  $f^1$  and  $d^1$ , whilst in the second, the  $e^1$  is held over from the previous bar, B moving downwards by step from  $A^0$  to  $G^0$ .

Much of the rest of the melodic material in MPS1-2 is based upon imitative techniques and consonant skips. In bars 168-9 the imitation is similar to that which has appeared previously in 164-5, in that it is based upon a series of consonant skips. MPS3 begins with a rhythmic imitative pairing of voices, CT following the antecedent T/B entries two semibreves later. The relationships between the voices change in the latter part of MPS3. Beginning with the aforementioned phrase 'Consummatum', B and CT echo each other with a section of rhythmic imitation. After a rest of a semibreve CT begins a new antecedent entry, followed by the consequent entry in B. A similar relationship

between the same voices occurs before the close, but here (bars 178-9) CT/B have consecutive tenths – something found frequently within Fayrfax's works.

### 8.3.3 Five-Part Counterpoint

Within the 'qui tollis...' section from the Agnus Dei of Missa 'Albanus', the main issue is the relationship between the cantus firmus and surrounding four voices. The section contains three statements of the 'Albanus' motif in T (subsections MAAS1-3) the first note of which falls by step on consecutive entries from  $c^1$ - $a^0$ . For most of the time, the notes comprising the vertical aggregate around the cantus firmus have the same rate of change as the cantus firmus itself. Only on two occasions (bars 139 and 143) does the vertical aggregate change over a single note of the pre-existing material. In view of this, it seems that the contrapuntal rate of change is almost entirely dictated by the cantus firmus. The change of tone within some of the individual vocal lines is also determined rhythmically by T, the clearest example of which is B. The rhythmic pattern 2/2/3/1/4/4 in T also occurs for the majority of the time in B. Only on the two examples of a change in vertical aggregate over one tone of the cantus firmus does the bass not conform to this rhythmic pattern.

The use of dissonance within the entire section is limited. On two occasions (bars 136 and 145) M has a number of passing tones, filling the interval of a fourth and fifth respectively. A suspension is present on the first beat of bar 143. Having been prepared in the previous bar, the cantus firmus line falls by step, creating a dissonant seventh with CT. This is then resolved in a 6-5-6-8 intervallic pattern. However, the final octave does not occur between the two voices that had the initial dissonance. In strict terms,  $e^1$  should resolve upwards to  $f^1$ , but a rest is inserted in CT, and so M provides the final resolution.

T and B provide the structural voices at the final cadential point. This is first reached by the 6-8 movement in the second half of the penultimate bar. However, Fayfax prolongs the cadence – and increases the rhythmic value of the final note of the cantus firmus by two beats – by inserting a passing note and upper neighbour note in TR, and a consonant skip in CT.

In view of the lack of dissonance – apart from the examples cited above – the rest of the melodic material in the upper three voices consists primarily of consonant skips. These are entirely determined by the cantus firmus in T. The rhythmic concurrence of T and B, and the lack of significant dissonance in the upper voices, suggest that the lowest two voices provide a framework for both the rhythmic values and pitches of the other vocal lines.

The 'O pia' section from *Salve regina* (bars 163-78) immediately follows the two-part section from the same work discussed above. Scored for all five voices, it provides a rich textural contrast to the sparseness of the two-part writing heard directly before. The section can be split into three subsections (SRSB1-3). Much of the melodic material throughout the section is based upon the interval of a fifth, either rising, or more frequently falling by step. SRSB1 (bars 163-167) includes the greatest number of statements of this motif, where it appears in two different forms ( $M6^a$  and  $M6^b$ ), and on a variety of different steps. The primary characteristic of  $M6^a$  is that the falling fifth is preceded by a dotted semibreve a third below which falls on the beat – the first note of the falling fifth therefore occurring on the half beat. In contrast, the falling fifth begins on the beat in  $M6^b$ , and is preceded by a rising skip of a fourth.

The first statement of  $M6^a$  can be heard in sequence in TR. This begins on  $d^1$ , rising by skip to  $f^2$  before falling by step to  $b^1$ . The final note of the first statement then becomes the first note of the second – rising to  $d^2$  and then falling to  $g^1$  in the same manner as before. The first statement is paired with B, the same motif appearing in parallel tenths between the voices.  $M6^b$  then enters

in CT, overlapping with  $M6^a$  by three semibreves. After the first note of  $M6^a$  in CT, T has a rising fifth by step, an inversion of  $M6^a$ , excluding the initial tone. In a similar way to the morphing of the two statements of  $M6^a$  in TR, the final  $d^1$  of the rising fifth in T becomes the first note of a new melodic pattern ( $M7$ ). The final note of the second statement of  $M6^a$  in TR coincides with the beginning of the same motivic material in M, beginning on  $e^1$ . On each occasion, the second note of  $M6^a$  straddles a barline. The relationship between the tied note and the surrounding freely-composed voices is manipulated by Fayrfax in two different ways. In the majority of cases a dissonance created in the previous bar is resolved over the held note, whilst in bars 166-7 the movement of CT to  $f^0$  creates a dissonant ninth with  $g^1$  in M. The final pitch of  $M6^a$  in M is altered melodically. In order to avoid a clearly defined cadential point a 6-5 intervallic relationship is inserted between B and M – M rising to  $f^1$ , rather than falling to  $c^1$  as in previous statements.

Throughout SRSB1 the freely-composed material consists of consonant skips or triadic patterns outlined by the motivic material. The rhythmic values of the freely-composed voices are longer than those used in the motivic patterns – all of the notes lasting for a long, breve, or semibreve; it is the density of motivic material that provides the rhythmic impetus. Beginning after the first two static vertical aggregates, and discounting the last two bars of the section – which contain the cadential extension – 50 of the 56 semibreve beats include motivic material. A motif is present in every voice at least once, although it is T that includes the greatest amount; 48% of which is derived motivically – excluding the first six and last eight semibreves as before.

Motif  $M7$  – first encountered in bars 166-7 in T – forms the basis for the start of SRSB2. An exact repetition occurs in CT – albeit at a different pitch – in bar 168. The second time it appears only the rhythmic values are retained, the melodic line of the phrase consisting of a rising fifth by step, and thus being an

inversion of the latter part of  $M6^b$ . Fayrfax has combined an inversion of the melodic properties of one motif with the rhythmic properties of another. In view of this, it has been classified as a new motif ( $M8$ ), even though the exact combination of rhythmic and melodic components appears only once, thus not strictly falling into the definition of motif outlined above. The combination of motifs can also be found in the same voice in bars 171-2. The T voice begins with  $M1$ , but rather than falling by step through a third, after the initial upward step and skip of a third, the line continues to fall through a fifth – one of the primary characteristics of both  $M6^a$  and  $M6^b$ . This overlaps an exact melodic inversion of  $M6^a$  in M, which begins in the latter half of the previous bar.

The first part of the final section, SRSB3 (bars 173-78), is constructed around two statements of  $M6^b$ . Beginning in the second half of bar 173 in TR, it is then used imitatively in T, following at a temporal distance of 5 semibreves. Both statements are altered, but in different ways; the presence of  $M6^b$  in T influencing the change in TR. The  $d^2$  at the summit of the motif in TR is underpinned by two vertical aggregates, the movement of the former to the latter occurring through passing tones upwards in M and B. In contrast, the statement in T occurs over a static vertical aggregate, the movement down by step through a fifth outlining the triad upon which the aggregate is based. The  $a^2$  in TR is omitted so as not to create a dissonance with the vertical aggregate based around  $M6^b$  in T.

The final two bars of the section can be seen as a cadential extension, consisting of a series of consonant skips in M and T around three static tones in TR, CT, and B. Bar 176 therefore acts as a transition between the statement of  $M6^b$  in T, and the cadential extension. Its primary purpose is to provide a rise in tessitura in TR, from the low register created by the presence of  $M6^b$  in the same voice, to the final  $d^2$  which may have been predetermined.

The upper neighbour note ( $d^2$ ) in TR at the beginning of bar 170 creates a dissonant ninth with M. An inversion of this interval can also be found in bar 176, but here is created by a passing tone  $d^1$  in M. In general, the whole section makes more use of dissonance than the five-part example from Missa 'Albanus'. Although much of the dissonance occurs as a result of passing tones, those present in bar 176 display signs of an inexperienced composer. The first seventh between M ( $f^1$ ) and CT ( $g^0$ ) is resolved through the fall by step in M, and although the two subsequent sevenths also resolve in a 7-8 and 7-5 manner (between TR and M, and then T and B), the proximity with which they occur is not to be found within the rest of Fayrfax's surviving works. Several other consecutive sevenths also appear within *Salve regina*, for example, the unprepared accented seventh between CT and M on the first word of the phrase 'Ad te suspiramus' in the upper three voices (bar 24), shown in Example 8.4.

**Example 8.4 – Accented Dissonant Seventh: *Salve regina***

The musical score for Example 8.4 consists of five staves. The first four staves are in treble clef, and the fifth is in bass clef. The music is in G major and 4/4 time. The lyrics are: 'mus, ex - su - les, fi - li - i E - - - ve. Ad te su - spi - ra - mus, - cla - ma - mus, ex - - su - les, fi - li - i E - - - ve. Ad te - - - ex - su - les, fi - li - i E - - - ve. Ad - - - ma - mus, ex - su - les, fi - li - i E - - - ve. ex - su - les, fi - li - i E - ve. Ad te su - spi - ra -

A further example of technically weak writing in SRSB3 can be seen in the transition to the cadential extension. The parallel seventh between TR and M resolves outwards – as discussed above – but a consecutive octave is present

between the same voices moving upwards from  $c^1$  and  $c^2$  to  $d^1$  and  $d^2$  respectively.

#### 8.4 Conclusion

Within this chapter it has been demonstrated that the large-scale structure of sections examined was conceived in several different ways. These included: Fayrfax's setting of the text – particularly within the more syllabic sections; a teleological unfolding of a rise in tessitura; the presence of a cantus firmus; and the manipulation of motivic material. A sense of climax within sections is achieved through an increase in rhythmic density and rise in tessitura within the large-scale planning. The forward motion of the melodic material is maintained through the avoidance of cadential points, created by the addition of rests, or the unexpected change in direction of a single vocal line.

The intervallic relationships between consecutive vertical aggregates have not been examined. Whilst this is an interesting focus within an analytical survey of early Tudor sacred polyphony, many conceptual problems must be addressed before this type of investigation can begin.

Within all three contrapuntal types examined, imitation occurs predominantly at the start of new textual phrases. It can be found in two forms; strict, or adapted. Within the latter, notes can be altered rhythmically and melodically at the start, middle and/or end of phrases, and additional notes can be added or omitted to account for the melodic properties of the other voices. On other occasions these alterations occur to avoid dissonances or consecutive intervals between voices, although as has been seen within *Salve regina*, Fayrfax seems not to avoid these in some instances. A detailed study of imitative techniques reveals that consequent entries are sometimes decided upon before antecedent entries. This frequently occurs when imitative and motivic material is combined.



The frequency with which similar motifs appear has been noted. These are listed in Example 8.5.

**Example 8.5 – Motifs Found in Works Studied**

*M1*



*M2*



*M3*



*M4*



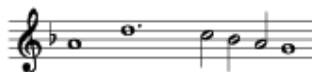
*M5*



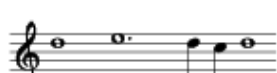
*M6a*



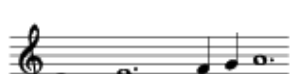
*M6b*



*M7*



*M8*



Throughout the examples studied above, it is clear that Fayrfax makes limited use of dissonance treatment. Two primary dissonances are favoured within the examples: (1) a 6-5 motion between voices, predominantly falling on a strong beat, and either prepared on the previous beat, or entirely unprepared;

and (2) a dissonant seventh, always prepared beforehand, and almost exclusively following a 7-6-5-6-8 intervallic pattern with a lower voice. One of the most notable features regarding dissonance is the way that it is employed for textual affect within *Maria plena virtute*.

The quantity of surviving material means that an extended study of motivic use is beyond the scope of this particular study. However, a brief survey of Fayrfax's other surviving works reveals that many of these motifs recur on a regular basis, particularly *M1*.¹¹ The function of the majority of motifs encountered is the outlining of intervals by step – most commonly a fifth – or the manipulation of consonant skips. In both cases, motivic material is used to decorate an underlying structure, and to bring coherence to the work. Further investigation would reveal whether these motifs are unique to Fayrfax's output, or common to early Tudor music in general.

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¹¹ The widespread use of similar motifs within the early Tudor repertoire has not been studied in detail. Nick Sandon has examined the presence – and possible royal significance – of one particular motif in his article 'F G A B-Flat A: Thoughts on a Tudor Motif', *EM* 12/1 (Feb 1984) pp 56-63. Four of Fayrfax's five-part masses are contained within the Forrest-Heyther partbooks (Bodleian Library MS Mus. Sch. E376-80) – Missa 'O quam glorifica' is not included. A comparison can be made with some of the other masses within the same source (Taverner's Missa 'Gloria tibi Trinitas', Missa 'Corona spinea', and Missa 'O Michael', Rasar's Missa 'Christe Jesu', Ashwell's Missa 'Jesu Christe' and Missa 'Ave Maria', Norman's Missa 'Resurrexit Dominus', Alwood's Missa 'Praise Him praiseworthy', Tye's Missa 'Euge bone' and Sheppard's Missa 'Cantate'). This survey reveals that motifs *M1* and *M4* are not confined solely to Fayrfax's works, and are used with varying frequency within the other masses. The presence of motifs *M1* and *M4* is reinforced through their use as points of imitation. Specific examples occur within Ashwell's Missa 'Jesu Christe': *M4* is exploited to a considerable extent in an imitative fashion in the 'Qui tolis peccata mundi, miserere nobis' section of the Gloria; and *M1* is used both sequentially and imitatively at the end of the phrase 'Cujus regni non erit finis' in the Credo. Taverner makes less use of these two motifs within his three masses – although *M1* can be found to some extent within Missa 'Corona spinea' – and they are almost completely absent within the works of Sheppard and Tye. This suggests that there is a core body of repertoire in which similar motifs were used. A computer-aided analysis of motivic use within the early-Tudor repertoire would no doubt reveal further patterns, but as discussed in section 3.4.1 a number of problems were encountered when attempting this type of analysis within this study. However, this brief survey reveals that there is certainly a great deal of potential within the area of pattern searching.

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## CONCLUSION

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## CONCLUSION

The purpose of this study has been twofold: (1) to achieve a greater understanding of Fayrfax's sacred works; and (2) to investigate analytical methods that can be used in order to examine the early Tudor sacred repertoire. In this concluding section I intend to provide a broad summary of the main findings of the investigation, discuss a number of ways in which further research can be conducted, and show how our knowledge of the repertoire can be increased through a constant re-appraisal of both the musical text and ourselves.

Although relatively little is known about the life of Robert Fayrfax – considering his major contribution to the musical life of early Tudor England, and that the majority of his works probably do not survive – he is still considered to be one of the most important and influential musical figures of his era. The primary reason for this is that his extant works continue to be performed, and historical and analytical interrogation persists. A large enough body of his compositions survives in order to conduct a detailed examination of the way in which they are structured. By concentrating upon individual aspects of his works, it is possible to identify a number of patterns and trends, and to see how these relate to one another within his sacred repertoire.

The individual aspects covered in detail – to which Chapters 4-8 are devoted – were reached through a close examination of Fayrfax's surviving work, and based on my own knowledge of the early Tudor repertoire through performance and previous academic study. A number of methods of investigation have been employed within individual chapters – both to subject

Fayrfax's works to detailed analytical interrogation, and to reveal significant findings concerning the structure of his surviving sacred compositions. Within a study of this scope it is impossible to address in considerable detail every aspect of Fayrfax's works from an analytical perspective, but it is possible to identify the different ways in which his works are structured on a number of levels, and to draw conclusions.

Several methods of inquiry pursued within this study can be expanded upon in two specific ways in future research: (1) a larger sample of Fayrfax's polyphonic material can be examined in more detail than has been possible here; and (2) the methods employed can be used in order to facilitate the analysis of works by other early Tudor composers. Both of these areas of study merit further investigation. By doing so, it should be possible to further uncover the compositional processes and structural concepts used by Fayrfax and his contemporaries, and to build up a clearer picture of elements that are common to the surviving body of early Tudor sacred music as a whole.

The context in which we understand Fayrfax's music now has changed since it was composed. Over time our sound world in the West has become predominantly tonal, and to some people the music of the early Tudor period can sound completely alien. This is particularly true of the highly florid works contained in manuscripts such as the Eton Choirbook, where a clear structural form and concepts of musical unity are not always easily audible, and perhaps not even present at all – at least in the way in which music of later periods is understood. As a result, analytical methods have been developed to examine music of the eighteenth and nineteenth centuries, and the application of these methods to early Tudor music is often neither practical nor purposeful.

In view of the lack of appropriate analytical methods, new ways of examining the early Tudor repertoire must be found. Within the concepts of philosophical hermeneutics – particularly those expressed by Gadamer in *Truth*

*and Method*, and discussed in the Preface – we must constantly find new ways of breaking into an endlessly changing hermeneutical circle. However, with regard to the music of Fayrfax and his contemporaries, it is not possible to jump immediately to the stage where analysis of eighteenth- and nineteenth-century music has reached now, without going through several other analytical processes first. The primary way in which new analytical methods can be constructed in order to investigate Fayrfax's works is to identify features that appear to be important from a detailed visual and aural study of his surviving works. Analytical criteria from the context of my own horizon have been applied to that of Fayrfax. The ways in which composers were influenced by numerology through a Boethian education have drawn me towards a variety of scientific – or more specifically quantitative – analytical methods. These methods are one way of addressing Fayrfax's works, but different approaches are needed to guard against imbalanced interpretations. Our individual life experiences, our knowledge of other music, and a greater understanding of the music under investigation itself – through historical and analytical study – change the way in which we construct our analytical methods, and thus our interpretation of it changes

By examining Fayrfax's works in detail, and by drawing conclusions from them, our understanding has progressed and developed. Music that at first may seem alien can be brought closer to us through a constant reappraisal of it. It is the analytical process itself that enables us in the twenty-first century to engage our horizon with that of early Tudor composers. While this study has provided a greater understanding of Fayrfax's works, it has also revealed that there is still much to learn. We must continue to re-examine the text with fresh prejudices and horizons, and explain within that context what the music means to us now.

The horizon of the present is continually in the process of being formed because we are continually having to test our prejudices. An important part of this testing occurs when encountering the past and in understanding the tradition from which we come. Hence the horizon of the present cannot be formed without the past. [...] *Understanding is always the fusion of these horizons supposedly existing by themselves.* [...] In a tradition this process of fusion is always taking place, for there, old and new continually grow together to make something of living value, without either being explicitly distinguished from the other.¹

This study has revealed that Fayfax's works are open to detailed analytical investigation. It has increased our understanding of the composer's works, and provided a platform from which the early Tudor repertoire as a whole can be examined. This is neither a quick nor an easy process, but through a constant re-examination of the text our knowledge of it can be increased. This is not a finite process, rather – in the words of Kofi Agawu – it will go on 'always and forever'.²

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¹ Hans-Georg Gadamer, *Truth and Method* (Continuum: London, 2004); first published as *Wahrheit und Methode* (Mohr: Tübingen, 1960) p 305.

² Kofi Agawu, 'How We Got Out of Analysis, and How to Get Back In Again', *MA* 23/2-3 (July-October 2004) p 270.

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