SELECTED ANTIPHONS OF HILDEGARD VON BINGEN: NOTATION AND STRUCTURAL DESIGN

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ABSTRACT

The musical structure of Hildegard von Bingen's "O quam mirabilis est" is directly linked to its notational system. After placing Hildegard's antiphons within an historical context in chapter one, chapter two reviews three previous analyses of "O quam mirabilis est" by Bronarski (1922), Cogan (1990) and Pfau (1990). The first two analyses ignore the syntax and expression of the text by focusing on the motivic level. The third analysis, though it embraces the text, lacks a formalization in its theoretical model. None of the analyses respond to the original notation. In response, chapter three examines the notation found in the sources containing Hildegard's music (the Riesenkodex and the Dendermonde codex) and discusses the structural importance of pitches within the neumatic groupings. The resulting graphic analyses adapt Schenkerian analytic notation to represent a hierarchy of pitch relationships. Chapter four applies this methodology to four other antiphons by Hildegard: "Hodie aperuit," "Nunc gaudeant," "O virtus sapientie," and "O virgo ecclesia."

RÉSUMÉ

La structure musicale de "O quam mirabilis est" de Hildegard von Bingen est intimement liée à son système de notation. Après une mise en contexte historique de l'antienne de Hildegard dans le chapitre un, le chapitre deux recense trois analyses de l'oeuvre par Bronarski (1922), Cogan (1990) et Pfau (1990). Les deux premières analyses ignorent la syntaxe et l'expression du texte pour se concentrer sur l'organisation motivique. Bien que la troisième analyse tienne compte du texte, elle emploie un modèle théorique insuffisamment formalisé. Aucune des trois analyses ne prend en considération la notation originale. Pour pallier à ces lacunes, le chapitre trois étudie la notation à l'aide des sources contenant la musique de Hildegard (le Riesenkodex et le Dendermonde codex) et évalue l'importance structurelle des notes d'après leur position dans les groupements neumatiques. Cela débouche sur une analyse graphique qui représente la hiérarchie des relations de hauteurs en s'inspirant de la notation Schenkérienne. Le Chapitre quatre applique cette méthodologie à quatre autres antiennes de Hildegard: "Hodie aperuit," "Nunc gaudeant," "O virtus sapientie," et "O virgo Ecclesia."

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I: HILDEGARD'S ANTIPHONS AS A GENRE OF MODAL MELODIC COMPOSITION

Introduction of Hildegard and discussions of her music

Hildegard von Bingen (1098-1179), the twelfth-century German visionary, writer, author of medical and scientific treatises, and Abbess, was also a composer known during her lifetime for her "novel songs."[1] Though Hildegard claimed that she did not have a musical education, her life revolved around music from the time that she was a child. Her parents gave her to the "service of God" as a tithe when she was only eight years old. Hildegard was placed under the supervision of Jutta of Sponheim, a local aristocrat who had pledged herself to a holy existence living in a small cell attached to

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[1] The Parisian Magister Odo of Soissons praises Hildegard for her "novel songs" in a letter of 1148. Gottfried of St. Disibod and Dieter of Echternach, "Epistola 127," *Patrologiae cursus completus: series latina* [hereafter called PL], edited by J.-P. Migne (Paris 1841-1864) 197: 352a, as quoted in Barbara Newman, "Introduction," of *Symphonia: A Critical Edition of the Symphonia armonie celestium revelationum*, by Hildegard of Bingen (Ithaca: Cornell University Press, 1988), p.5. Hildegard's *Vita* was recorded by the monk Godefridus during her lifetime, and has been translated into German by Adelgundis Führkotter as *Das Leben der heiligen Hildegard von Bingen* (Dusseldorf: Patmos-Verlag, 1968). Contemporary biographical accounts include the book-length biography, Sabina Flanagan, *Hildegard of Bingen: A Visionary Life*, (London: Routledge, 1989); and short segments on Hildegard found in Carol Neuls-Bates, ed., *Women in Music: An Anthology of Source Readings from the Middle Ages to the Present* (New York: Harper and Row, 1982): 11-20; and Anne Bagnall Yardley, "Ful Weel She Soong the Service Dyvyne," in *Women Making Music: The Western Art Tradition, 1150-1950*, edited by Jane Bowers and Judith Tick, (Urbana: University of Illinois Press, 1986): 15-38.

the Benedictine monastery of St. Disibod. Jutta and Hildegard followed the Benedictine Rule daily, probably performing the Divine Office as they watched the monks through a small window in their hermitage. The Benedictines met eight times each day to sing the Office, thus even without direct musical instruction, Hildegard must have had an intensive knowledge of chant repertoire simply through exposure. As Marianne Richert Pfau states in her 1990 dissertation:

> Although the relationship of Hildegard's antiphons and responsories, hymns and sequences to medieval chant in general, and to twelfth-century Benedictine liturgical practice in particular is a complicated one, the music of the liturgy must be considered the foundation from which Hildegard's own musical sensibilities developed.[2]

Scholars generally agree that Hildegard's compositional activities took place somewhere between 1140 and 1175.[3] Her works are especially valuable for study for several reasons: (1) her music comprises the largest single body of chant repertoire ascribed to any one medieval composer (approximately seventy chant items in the *Symphonia* as well as her morality play, the *Ordo virtutum*); (2) she composed both the text and music; and (3) the manuscripts containing her

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[2] Marianne Richert Pfau, *Hildegard von Bingen's Symphonia harmonie celestium revelationum: An Analysis of Musical Process, Modality, and Text-Music Relations* (Ph.D. dissertation: State University of New York at Stony Brook, 1990), p.2.

[3] Pfau, p.13; Peter van Poucke, "Introduction" to Hildegard of Bingen's *Symphonia Harmoniae Caelestium Revelationum*, facsimile edition of the Dendermonde, St.-Pieters & Paulusabdij ms. cod 9 (Peer, Belgium: Alamire, 1991), p.6.

music came from her convent and were compiled either during or immediately after her lifetime.[4] However, though she has maintained a standing since her death in 1179 as a saint (though never canonized) and as a mystic, until fairly recently her music and poetic texts were either neglected or dismissed for unorthodoxy of style.[5] In fact, before the work of medievalist Peter Dronke beginning in 1968, Hildegard's poetry was considered prose because it did not follow the standard poetic schemes of the twelfth century. Though Dronke's work is outstanding, as a specialist in medieval literature he focuses on Hildegard's poetic texts rather than her music. Musicians and music scholars only began to consider her chant seriously in the 1980s, and now Hildegard's

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[4] The Dendermonde Codex 9 dates from the 1160s (Pfau, p.14), while the Riesenkodex which contains Hildegard's collected works (Wiesbaden, Hessische Landesbibliothek, Hs. 2) was prepared in the decade following Hildegard's death, 1180-1190 (Pfau, p.79).

[5] Since 1979, the 800th anniversary of Hildegard's death, more attention has been given to her music. Two modern editions of her music have appeared though neither is complete, and performances and recordings have become more numerous (the two editions of her music include the morality play, the *Ordo virtutum*, transcribed and edited by Audrey Ekdahl Davidson (Kalamazoo, Michigan: Medieval Institute Publications, Western Michigan University, 1985); and *Sequences and Hymns*, transcribed and edited by Christopher Page (Newton Abbott: Antico Editions, 1982). Discussion of Hildegard's music has ranged from motivic analyses, to the exploration of the homoerotics of devotion in her music. Articles can be found in the journals *Sonus*, and *Signs* as well as in various books on women in music (see my bibliography). An analytic dissertation on Hildegard's music was completed in 1990 by Marianne Richert Pfau, and presently Barbara Stülmayer in Münster, Germany is doing doctoral research on the life and musical works of Hildegard.

music is established as part of the medieval repertory.[6] Richard Crocker describes her style in the *New Oxford History of Music*,

> Chant for Hildegard seems to have been a melodic response to her inner vision, a cantorial effusion that used the standard neumatic language but with an extraordinary intensity and individual inflection. The neumatic ornamentation is rich and heavy, the ranges great, the melodic motion active. The lyricism is often very persuasive.[7]

The antiphon

A large proportion of Hildegard's output is comprised of antiphons (42 of the 72 pieces in her *Symphonia*). Traditionally there are two interrelated types: psalm antiphons which are "short, simple compositions [that] introduce or conclude the chanting of a psalm or canticle,"[8] and votive antiphons which are more elaborate and can be used either liturgically or as independent compositions.[9]

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[6] Though several German scholars, including Ludwig Bronarski in the 1920s and Barth, Schmidt-Görg, and Ritscher in the 1960s, published and wrote about some of Hildegard's music, a permanent place for her music was not established in the medieval repertory during either of those periods of scholarship.

[7] Richard L. Crocker, "Medieval Chant," in the *New Oxford History of Music* II (Oxford University Press, 1990), p.301.

[8] Giulio Cattin, *Music of the Middle Ages I*, translated by Steven Botterill (Cambridge: Cambridge University Press, 1984), p.88.

[9] Michel Huglo subdivides antiphons by text into seven categories: (1) psalter antiphons, (2) verse antiphons, (3) antiphons to the Benedictus and Magnificat, (4) mass antiphons (introits and communions), (5) Marian antiphons, (6) processional antiphons, and (7) rhymed antiphons. The first four and the last are all associated with psalms or canticles

Antiphonal psalmody was integral to Christian worship, especially in the monastic tradition where all 150 psalms were sung weekly. Nine or twelve psalms and antiphons are required at Matins,[10] and five of each at both Lauds and Vespers. Texts for the antiphons are derived from the psalms themselves, from other biblical passages, or they are newly composed. Musically they are short, they are often written syllabically, and they tend to follow melodic stereotypes.

The more elaborate votive antiphons are lengthier and are generally written in a neumatic style. Used for special occasions, originally for ceremonial processions, they "eventually became an act of worship in themselves."[11] The most important four are to the Virgin Mary and were eventually added to the end of Compline: *Alma redemptoris mater*, *Ave regina caelorum*, *Regina caeli letare*, and *Salve regina*.

Hildegard wrote both psalm antiphons and votive antiphons. Crocker says that in Hildegard's music, "the traditional forms of antiphon and responsory are maintained, although the pieces are sometimes long (as often happens in

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and their tones, while the fifth and sixth categories, Marian and processional antiphons, are considered votive antiphons. "Antiphon," *New Grove Dictionary of Music and Musicians*, vol.1, Stanley Sadie ed., 1980, pp.471-481.

[10] The Roman or secular office uses three Nocturns of three antiphons, while the monastic office uses two Nocturns of six antiphons.

[11] Richard L. Crocker, *A History of Musical Style*, (New York: Dover Publications, 1986), p.52.

the later treatment of these forms)."[12] Of Hildegard's 42 antiphons thirteen are votive (see Appendix 1). In these antiphons she addresses Divine Wisdom, Divine Love, the Creator, the Redeemer, the Virgin, the angels, the patriarchs and prophets, Saint Boniface, and the 11,000 virgins martyred with St. Ursula. Neither Pfau nor Bronarski distinguish between Hildegard's votive and psalm antiphons. The main difference is that the votive antiphons are lengthier and more elaborate than the psalm antiphons.[13]

To perform antiphonal psalmody it is necessary to know which of the eight psalm tones (corresponding with the eight modes) to use for the chanting of the psalm, and which ending (or *differentia*) would best lead back to the antiphon. Some psalm tones have multiple *differentiae*. Thus if a differentia appears with an antiphon in a manuscript it tells the performer both which psalm tone and which ending to use. The *differentia* usually is inscribed with the vowels euouae (for *seculorum amen*, the final words of the doxology sung at the end of every psalm). *Differentiae* appear throughout

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[12] Crocker, *New Oxford History of Music* II, p.301.

[13] Ludwig Bronarski in his discussion of general features of Hildegard's antiphons states that, "the more expanded the antiphon is, the more removed its melodies are in the rules from the simplicity of the Gregorian antiphons of the Office." "Je ausgedehnter nämlich die Antiphone ist, desto mehr entfernt sich in der Regel auch ihre Melodie von der Einfachheit der gregorianischen Antiphonen des Offiziums," *Die Lieder der hl. Hildegard: Ein Beitrag zur Geschichte der geistlichen Musik des Mittelalters*, (Wiesbaden: Breitkopf & Härtel, 1922), p.26.

Hildegard's manuscripts telling us which of her antiphons are intended to accompany psalmody. However, the antiphons without *differentiae* could be either psalm antiphons with the *differentiae* simply unindicated or votive antiphons.[14] "O quam mirabilis est" which exists only in the Riesenkodex, appears without a *differentia*, and is considered a votive antiphon because of its length and the generalized nature of its text.

Modal Considerations and Pfau's Matrices

The table below (Figure 1.1) indicates the distribution of Hildegard's antiphons according to final compared to the distribution of her total output (excluding the *Ordo virtutum*).[15] "O quam mirabilis est," which will be analysed in detail in chapter three, is one of the three C-final antiphons. The other two C-final antiphons, the votive antiphon "Nunc gaudeant" and the psalm antiphon "Hodie aperuit," will be examined in chapter four. Since E is by far Hildegard's preferred final, represented by more than half of her antiphons, two E-final votive antiphons will also be considered in chapter four: "O virtus sapientie" and "O virgo

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[14] I have included in Appendix 1 a list of Hildegard's antiphons. The designations of votive or psalm follow the categorizations of Peter van Poucke, from his editorial notes in the facsimile edition of the Dendermonde manuscript, and of Barbara Newman from comments in her *Critical Edition of the Symphonia*.

[15] The one F-final item is notably a *Kyrie*, Hildegard's only mass ordinary item.

Ecclesia."

Figure 1.1 Antiphons According to Final

Final	Antiphons	Total number of pieces
C	3	11
D	11	13
E	22	32
F	0	1
G	1	4
A	5	13
	42	72

Pfau notes that Hildegard's melodies do not comply completely with the medieval eight mode system: they lack consistent authentic or plagal ranges and some pieces utilise C and A finals. Yet Pfau asserts that Hildegard's music is modally oriented in significant ways.[16] For instance, though individual pieces cannot be identified as authentic or plagal, shifts between authentic and plagal passages occur at formal junctures in the longer antiphons and responsories, and often mark versicles or couplets in the hymns and sequences. As well, changes from authentic to plagal coincide "with textual points of articulation," as will be confirmed in my analysis of "O quam mirabilis est" in chapter three.[17] This, however, is not a rare feature of medieval chant. For example, the sequence for Easter Day, "Victimae paschali laudes," is classified as mode 1 because it spends most of its time in

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[16] Pfau, p.129.

[17] Ibid., pp.129-30.

that range. Yet, though it begins in mode 1 (D authentic), it shifts to mode 2 (D plagal) in the second versicle, moving back to mode 1 for the third and final couplet (see Example 1.1, appended).

Because C- and A-final pieces do not fit in with the eight-mode system they are generally considered transpositions of other modalities (A-pieces as D-modality and C-pieces as G- or F-modalities). Possibilities for transposition arise from the presence of both B-flat and B-natural in some medieval theorists' modal systems. According to the eleventh century writers Hermannus Contractus and his teacher Berno of Reichenau, species of fourths and fifths--tonal spaces which contain specific interval patterns of tones and semitones--can define modalities by their juxtaposition.[18] Thus an A-final piece resembles D-modality with B-flat (see Example 1.2a), or if B-flat is present in the A-final piece it resembles E-modality (Example 1.2b); a C-final piece can resemble either an F-modality with B-flat (Example 1.2c), or if B-flat is present in the C-final piece it resembles G with B-natural (Example 1.2d).[19]

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[18] See Hermannus Contractus, *Musica*, edited and translated by L. Ellinwood, Eastman School of Music Studies No.2 (Rochester: 1952).

[19] Though Guido of Arezzo does not necesssarily endorse the idea of transposition (since mode is determined for him by final), he does describe these relationships in his *Micrologus* translated by Warren Babb in *Hucbald, Guido, and John on Music: Three Medieval Treatises*, (New Haven: Yale University Press, 1978), p.64. The anonymous author of the *Dialogus* makes similar assertions, translated by Oliver Strunk in

Pfau, however, infers that Hildegard's C- and A-final pieces cannot be considered transpositions of other modalities for two reasons.[20] First she notes that there is complete consistency between the manuscripts regarding pitch level of individual pieces, which leads her to believe that "each modality has its own distinct set of characteristics."[21] Secondly she concludes that Hildegard's chants can be grouped into melody types according to final, not mode.[22]

Pfau's prototype melodies, or matrices as she describes them, differ from the Gregorian melodic stereotypes. In Gregorian stereotypes the recurrence of melodies is audible because adaptation occurs at the level of the note rather than the phrase. In other words melodic *motives* may be expanded or contracted (see Example 1.3 for Michel Huglo's melody types). Pfau's prototype melodies are structures which outline the general contour of phrases. The matrix could be embellished in many ways with differing motives. Also, her matrices do not underly the movement of entire pieces, as a Gregorian

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Source Readings in Music History: Antiquity and the Middle Ages, (New York: W.W. Norton and Company, 1965), p.116. For contemporary discussions see Leo Treitler, "Tone Systems in the Secular Works of Guillaume Dufay," *Journal of the American Musicological Society 18* (1965): 131-144; and G.G. Allaire, *The Theory of Hexachords, Solmization and the Modal System* (American Institue of Musicology, 1972), p.25.

[20] Pfau, p.134.

[21] Ibid., p.133.

[22] Some theorists such as Guido and Hucbald would argue that final and mode are one and the same. See Guido's and Hucbald's comments in Babb, p.67 and pp.38-9 respectively.

melodic type would, instead they recur several times throughout a chant.

Pfau describes three matrices in total: one D-final matrix and two E-final matrices (reproduced in Example 1.4). She determines that chant items with C and G finals do not follow any standard melodic schema, while the A-final pieces comply with the matrices of either the D- or the E-finals. Initially this sounds like transposition, but clearly this is not what Pfau intends. The A-final pieces resemble D- and E-final pieces by melodic shape, not by mode (i.e. position of semitones). However, the question of final versus mode seems somewhat moot: the C-final pieces do not follow a general melodic plan, and the A-final pieces do not have their own matrix. Furthermore, though Pfau's matrices match her examples from Hildegard's repertoire, they represent general contour of melodic phrases rather than revealing compositional strategies for individual pieces.[23]

It can be concluded that though Hildegard's modal treatment is difficult to categorize according to textbook generalizations of the eight-mode system, this difficulty stems from her constructive engagement with that very system. Hildegard's alternation between plagal and authentic phrases, which one can observe by quickly glancing through my transcriptions in Appendix 2, shows a purposeful manipulation

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[23] See Peter van Poucke for another discussion of contour in Hildegard's music, pp.8-9.

of this modal distinction. As well very deliberate allusions to transposed modalities are made by Hildegard in her three C-final antiphons through the incorporation of both B-natural and B-flat. Furthermore, Hildegard makes direct reference to modes with the finals F and G in her C-final antiphons by highlighting the species of their respective fifths and fourths (to be discussed in greater detail in chapters 3 and 4).

Adaptation and Centonization

Two methods of composition of chant melodies have been broadly accepted by musicologists: adaptation and centonization. Adaptation is the modifying of an antiphon melody to a new text which approximates the relative shape and structure of the old text. The early antiphoners which lack neumatic notation give incipits of the prototype antiphons to indicate the melody to be used.[24]

Centonization is the application of various cadential and melodic formulae (often associated with a particular mode) to new texts. Michel Huglo asserts that the process "occurs in the early liturgical repertories in which the material was transmitted orally, and can only be fully understood in this light."[25] He suggests that once a psalm tone and psalm

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[24] The number of prototype melodies is very limited. There are none in D mode, one in E mode, two in F mode, and three in G mode (Huglo, p.473).

[25] Huglo, p.474.

ending had been chosen, "formulae for the intonation at once sprang into the mind of the 'composer'".[26] The use of melodic repetition presumably aided the process of transmission. The recurrence of the same melodic units with important words or syntactic structures in different chants, even across generic boundaries, further contributed to the memorization procedure.[27]

Though adaptation and centonization procedures can be extrapolated from chant repertories, not all chants fit into these two categories. For instance, after examining the antiphons from the numerical offices found in the St.Denis Antiphonale, Richard Crocker determines that though some of the mode 1 antiphons share similar features (e.g., the highlighting of the AC third), they are independent melodically.[28] Crocker, after considering whether this group of antiphons represents a melody type, concludes that, "There certainly are procedures at work that result in close similarity, but not ... a melody type properly speaking."[29] To be a product of adaptation the antiphons would have to follow the same contour and chronology of events.

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[26] Ibid.

[27] Huglo, p.475.

[28] The St. Denis Aniphonale, Fpn 17296, is inventoried by Dom Hesbert in *CAO* II as *D*. Richard Crocker, "Matins Antiphons at St.Denis," Journal of the American Musicological Society 36/3 (1986): 448.

[29] Ibid., p.475.

Analogously, Hildegard's "O quam mirabilis est" which shares gestures or motives with her other chants (especially those pieces with C finals) is still an independent composition. Hildegard scholars, though, have continued to search for adaptation and centonization processes in her music. Ludwig Bronarski, for example, clearly describes Hildegard's music as centonate in structure, while Robert Cogan reduces "O quam" to two melodic motives, which embraces the notion of centonization. Without doubt, distinct melodic motives recur throughout Hildegard's music. However, rather than depicting Hildegard's music as the stringing together of formula as Bronarski and Cogan postulate, or indeed the fleshing-out of a skeletel melodic contour as Pfau suggests, I shall argue that the musical structure in Hildegard's works originates in the manipulation of spatial relationships. Furthermore these relationships are made apparent through the original notation itself as it is depicted in the manuscripts.

II: PREVIOUS ANALYTICAL STUDIES OF "O QUAM MIRABILIS EST"

Before proceeding to the three previous analyses of "O quam mirabilis est"--the first by Ludwig Bronarski, from his book *Die Lieder der hl. Hildegard* (written in 1922), the second by Robert Cogan published in the journal *Sonus* in 1990, and the third by Marianne Richert Pfau from her 1990 dissertation--I will provide the reader with a brief description of the antiphon.[1]

"O quam mirabilis est" lends itself well to analysis, due to its high degree of internal repetition. Furthermore, in the evocative imagery of its poetry and the breadth of its melodic range, it well-represents Hildegard's style. A votive antiphon written for the Creator, "O quam mirabilis est" consists of three larger segments of text which are divided into nine musical phrases (see Appendix 2 for a transcription of the music and Figure 2.2 for the text with its translation). The phrasing reflected in my transcription (inspired by Pfau's phrasing and approach) is informed by the text and the music, both of which are unique creations of Hildegard. Neither Cogan, whose musical analysis sometimes cuts through individual words or syllables, nor Bronarski whose analysis segments the piece into 24 small units,

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[1] Bronarski, pp.48-53; Cogan, "Hildegard's Fractal Antiphon," *Sonus* 11/1 (1990): 1-19; Pfau, pp.60-83.

consider the syntactic relationship between text and music.

The three large segments of text form analagously three large segments of music (labelled 1 to 3). The nine musical phrases of the chant are not evenly distributed across the three stanzas: the first stanza comprises three musical phrases, the second four, and the third two. All phrases however, begin and end on the C final, and carry the same basic double-neighbour cadential figure (sometimes C, B-flat, D, C, sometimes C, B-natural, D, C), except for phrase 3a which is approached only from below. This phrasing concurs with Guido of Arezzo's recommendation in the *Micrologus*. In 1026-28 he wrote, "The beginning of a chant *and the end of all its phrases and even their beginnings* need to cling close to the note that ends the chant [italics mine]."[2]

Phrases 1a, 2b, and 2d utilise the plagal range (G to G with C as the final), while six of the phrases within "O quam mirabilis est" are actually varied versions of each other employing the authentic range (C to C): phrases 1b, 1c, 2a, 2c, 3a, and 3b. Phrase 3b is an expanded version of the authentic melody through its incorporation of a plagal phrase by elision. Figure 2.1 below outlines the distinctions between phrases by mode and range (according to both pitch and interval).

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[2] Guido in Babb, p.66.

Figure 2.1. Authentic and Plagal Ranges by Pitch and Interval

phrases	range - auth. or plagal	range - by pitch	range - by interval
1a	P	A - F	m6
b	A	B - C	M9
c	A	B - C	M9
2a	A	B - C	M9
b	P	G - G	P8
c	A	B - C	M9
d	P	G - F	m7
3a	A	B - C	M9
b	P + A	G - C	P11

The text confirms the phrasing of "O quam" in Appendix 2 through its syntactic structure. At the largest level of syntax, the beginning of each stanza is also the beginning of a new phrase. The syntactic structure of each stanza also corresponds with the musical phrasing (or vice versa). The first stanza will serve as an example. Phrase 1a "O quam mirabilis est" (translated as "O how marvelous is"), is an exclamatory statement, including the main verb, which describes the subject (see the text in Figure 2.2). Phrase 1b completes the sentence with the subject "prescientia divini pectoris" ("the foreknowledge of the divine heart [is wonderful]"), while phrase 1c, which ends the first stanza, is a relative clause "que prescivit omnem creaturam" ("which foreknew all creation"). All of the musical phrases in "O quam mirabilis est" can be shown in this way to parallel the

syntactic units of the text.[3]

Figure 2.2 Text and Translation of "O quam mirabilis est"

1a O quam mirabilis est b prescientia divini pectoris c que prescivit omnem creaturam.	O how marvelous is the foreknowledge of the divine heart which foreknew all creation.
2a Nam cum Deus inspexit faciem hominis b quem formavit, c omnia opera sua d in eadem forma hominis integra aspexit.	For when God looked on the face of the man whom he formed, he saw all his works whole in that same human form.
3a O quam mirabilis est inspiratio b que hominem sic suscitavit.	O how marvelous is the inspiration that in this way roused man to life.
	Translation by Barbara Newman[4]

Ludwig Bronarski (1922)

Ludwig Bronarski was the first music scholar to try to categorize Hildegard's *oeuvre* and understand her compositional process. In his study *Die Lieder der hl. Hildegard*, Bronarski claims that Hildegard's compositional process is centonate, and that her pieces can be grouped motivically by final. When describing the melodic segments found in Hildegard's C-final

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[3] Phrases 2c and 2d are the only exceptions; although phrase 2c begins with a new syntactic unit it ends in the middle of a prespositional clause which 2d completes.

[4] Barbara Newman, *Symphonia*, p.101.

pieces Bronarski maintains that "each motive has its own function."[5] He continues,

> ...there are motives which leaving and returning to the tonic merely play about it [labelled a^1 in the following analysis (Figure 2.3)]; analogous motives appear on the dominant [labelled a^1 (on the dominant)]. Others move from the tonic to the dominant; these are obviously especially important as elements of construction [labelled b]. Again others lead from the dominant to the tonic [labelled m]...[6]

Bronarski however never suggests a reason for the ordering of motives in any given piece. In fact he insinuates that the process is haphazard. He writes,

> Hildegard's melodies are built after the following principles: they do not consist of goal-oriented musical lines, from wide and systematically spinning melodic arches, but rather are set down from short segments, small musical phrases that are *strung together*.[7] [Italics mine.]

In his analysis of "O quam mirabilis est" (reproduced in Figure 2.3 below) Bronarski obviously misses large-scale

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[5] "Jedes Motiv hat seine besondere Funktion...," Bronarski, p.49.

[6] "...es gibt Motive, welche von der Tonika ausgehend und mit ihr schließend, diese lediglich umspielen; analoge Motive erscheinen auf der Dominante; andere gehen von der Tonika aus und wenden sich zur Dominante, diese sind natürlich als konstruktive Elemente besonders wichtig; wieder andere führen von der Dominante zur Tonika...," Bronarski, p.49.

[7] "Die Melodien Hildegards sind nach folgenden Prinzipien gebaut: Sie bestehen nicht aus ausgewachsenen musikalischen Linien, aus weit und zielbewußt gesponnenen melodischen Bögen, sondern setzen sich aus kurzen Abschnitten, kleinen musikalischen Phrasen zusammen, die aneinandergereiht werden," Bronarski, p.48.

Figure 2.3 - Bronarski's Analysis of "O quam mirabilis est" with my phrasing

Phrases	Text	Motive
1a	1. O quam	a^1
	2. mirabilis est	c
b	3. praescientia	b
	4. divini	a^1 (on the dominant)
	5. pectoris	a^1
c	6. quae praescivit	b
	7. omnem	a^1 (on the dominant)
	8. creaturam	a^1
2a	9. nam cum Deus	b
	10. inspexit	a^1 (on the dominant)
	11. faciem hominis	a^2
b	12. quem	d
	13. formavit	a^5
c	14. omnia	ba^4
	15. opera	m
	16. sua in eadem forma	a^3
d	17. hominis	a^1
	18. integra	g
	19. aspexit	a^1
3a	20. O quam mirabilis est	ba
	21. inspiratio	a^2
b	22. quae hominem	b
	23. sic	a^1
	24. suscitavit	a^2 + g + a^5

structure in the antiphon (see also Appendix 3 for a copy of "O quam mirabilis est" annotated with Bronarski's motives). By focusing on the motivic level he ignores the recurring cadential formulas and the phrasing of the music outlined above. This leads him to label phrases 2c (ba, m, a) and 3a (ba, a) differently from phrases 1b, 1c, 2a and 3b (b, a, a),

though the analysis in chapter three will show that these phrases are integrally related as variants of each other. Bronarski joins together motives b and a (as ba) because they have been "melted" together, an elision ostensibly due to missing notes.[8] Though Bronarski clearly recognizes that ba and b + a are related, in his comments he does not acknowledge the relationship between (or importance of) phrases 1b, 1c, 2a, 2c, 3a, and 3b in the building of the antiphon. Furthermore he does not comment on reasons for the ba variation of b + a. He concludes rather that the antiphon is "a tiring monotony" because "...the entire song is almost exclusively built from the motives a and b..."[9] If Bronarski had tried to look globally at the antiphon he might have been able to appreciate the complex tensions and resolutions created by the manipulation of the authentic phrase.

Robert Cogan (1990)

Robert Cogan, in a similar quest, traces motivic content in "O quam mirabilis est." He identifies only two basic cells, a and b, which are transpositions of each other joined

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[8] "... manchmal nämlich werden b + a auf der Dominante, nicht einfach als selbständige, unabhängige Glieder nebeneinandergestellt, sondern miteinander verschmolzen, verflochten, derart verbunden, daß aus ihnen s.z.s. ein neues Motiv entsteht, das wir mit ba bezeichnen wollen ..." Bronarski, p.50.

[9] "Überhaupt wird das ganze Lied fast ausschließlich aus den Motiven a und b aufgebaut, was von einer ermüdenden Monotonie ist." Bronarski, p.53.

together by a "connective cell variant." He says,

> Every one of [the antiphon's] sixteen different phrases derives from one of two cells; or (more exactly) from the same arch-shaped cell at two different transpositions, lower and higher [see Example 2.1a].[10]

However, he not only--like Bronarski--ignores the phrasing and cadential gestures in the antiphon, but also ignores the delineation of the text by demarcating motives which do not coincide with textual units. Furthermore, Cogan's "connective cell variant" is as important motivically as his other two motives, the a and b cells, since it occurs as often as the b cell and initiates, rather than connects, the musical phrases which define the piece (phrases 1b, 1c, 2b, 2d, 3a, and 3b).

In Example 2.1a Cogan makes his connective cell look like a non-structural link (a non-motive) by starting its ascent on the pitch E when cells a and b begin and end on the structural *finalis* C and the *tenor* G respectively. But the "connective cell" on E *never* coincides with the beginning of a textual unit, such as a word or even a syllable, and thus cannot be labelled as such musically. The musical figure--a combination of text and pitch--begins its ascent from C, which is reinforced repeatedly throughout the antiphon. This is even obvious from Cogan's own version of "O quam mirabilis est" reprinted in Example 2.1b (look at the beginnings of phrases 2, 4, 6, 9, 13, and 15, and compare with Example 2.1a).

Cogan's "connective cell variant," thus, appears as an

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[10] Cogan, p.7.

initiating gesture at points of embarkation in the musical structure of the piece (it always follows the double neighbour cadential gesture) and in the syntactical structure of the text. The most obvious instances of this initiating versus connecting function are Cogan's phrases 6 and 13 which appear at the *beginning* of segments 2 and 3 of the text respectively (see Figure 2.2 above, and Appendix 2). Phrase 9 begins anew following a relative clause ("quem formavit" - "whom he formed"), and phrases 4 and 15 are both relative clauses beginning with the word *quae* (which, or that). Arguably, "which or that" are connectors, however, their function is to introduce new syntactic units rather than merely connect two phrases. The only "connective cell" left is phrase 2 which follows the opening declarative line "O quam mirabilis est" featuring the double neighbour cadential gesture that is maintained throughout the antiphon (see my phrasing in Appendix 2). Thus, Cogan's "connective cell" actually functions musically as an initiator of phrases rather than a link which joins one motive to another.

Based on his motivic analysis, Cogan claims that the antiphon is fractal, meaning "self-[similar] at different scales."[11] As he indicates in Example 2.1a, "...the cell transpositions can be paired a + b, producing an ascending line...or b + a, producing a descending line."[12] Hence, a +

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[11] Ibid., p.7.

[12] Ibid.

b + a forms the linear arch from C to high C and back to C which reflects the arch of the individual cells (CFC or GCG),[13] and realizes a fractal relationship. Cogan describes the antiphon as a "veritable riot of self-similarities."[14] Though there can be no doubt that melodic repetition is an important if not defining feature of the piece, this conclusion can be reached by paying close attention to the relationship between text and music. Furthermore, a study of the variations between the repetitions yields more insight into the workings of the piece than a simple reduction and cataloguing of motivic content.[15]

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[13] Ibid., p.8.

[14] Ibid. From a mathematical perspective, it could be argued that the kind of motivic similarities found by Cogan are not really "fractal" in any but a loosely metaphysical sense.

[15] One further problem which characterizes Cogan's analysis is his (self-proclaimed) lack of expertise in medieval notation (p.15). Cogan bases his analysis on the transcription of "O quam mirabilis est" found in the Barth, Ritscher and Schmidt-Görg edition of some of Hildegard's songs (*Lieder*, [Salzburg: Otto Müller Verlag, 1969]) indicating that a "mysterious notational sign" appears which specialists with whom he consulted did not recognize (perhaps because he showed them the modern edition not the manuscript). The symbol to which Cogan refers is the *quilisma* which does offer an interpretive problem, but which is neither unique to Hildegard or to "O quam mirabilis est," nor unusual in general.

Cogan's exclusive use of a modern score rather than the original notation is reflective of the reliability and availability of *Urtext* editions of music of the common practice period. Music scholars can generally trust that modern editions represent that music accurately. However, since medieval notation is vastly different from our own and much of it comes to us with little indication as to how it should be read, all modern transcriptions are reconstructions and interpretations of the music and should be treated as such. Thus it is advisable for analysts dealing with the

Marianne Richert Pfau (1990)

Marianne Richert Pfau's analysis presents a more dynamic approach to "O quam mirabilis est," but because she does not offer a musical-theoretic framework for approaching the antiphon, her methodology is bound to "O quam mirabilis est" and cannot be applied to other chants. Pfau in fact does not attempt to apply her methodology. The rest of her dissertation focuses on melodic contour and the relationship between Hildegard's oeuvre and Pfau's own E- and D-final matrices (outlined in chapter one). Pfau's discussion, however, of "O quam mirabilis est" is insightful, although I disagree with her phrasing and her assessment of the significance of the end of the antiphon.

Reviewing Bronarski's analysis, Pfau complains that he does not establish rules which would generate the antiphon from its melodic units, that rather he "... presents the melodic process as an arbitrary or chance procedure that is ultimately based on artless mechanics."[16] Furthermore, as I have also indicated, Pfau states that, "the disproportionate emphasis placed upon one single facet of music construction, 'the motive,' leads Bronarski to ignore all other elements ..."[17] In response, she addresses the antiphon in its

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music of the Middle Ages to use the manuscript sources as their point of departure.

[16] Pfau, p.48.

[17] Ibid., p.62.

entirety.

She contends that the melodic gestures are not "isolated entities" but form a broad melodic arch: "The melodic elements, like the individual words, are to be considered as subordinate members of a larger hierarchical system rather than as self-contained units."[18] This hierarchical system is guided by what Pfau refers to as "process philosophy."[19]

Process philosophy, developed by Alfred North Whitehead in philosophy of science, claims that reality in the form of objects and perception of those objects is ever-changing. Objects are not fixed substances which are static and passive, but rather are dynamic, changing with the "flux of time."[20] Though the objects to which Whitehead was referring were things like tables and chairs, Pfau asserts that since music relies on time for its production, process philosophy applies well to its study. In order to apply this philosophy, events that take place in music have to be understood in relation to one another, and sound space understood as a "theoretic construct".[21] Pfau concludes that, "it is crucial to consider the actual melodic motion within these spaces and the resulting melodic shapes."[22]

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[18] Ibid., p.69.

[19] Ibid., p.70.

[20] Ibid.

[21] Ibid., p.71.

[22] Ibid., p.72.

Pfau begins her analysis of "O quam" with a discussion of its text. Articulated in three stanzas, the first and third stanzas of "O quam", which have parallel syntax, are exclamations of praise, while the second stanza details an expository truth (see Figure 2.2 above). Pfau notes as I did, that the internal articulations are often preceded by the pronouns *quae* and *quem* (see my phrasing in Appendix 2).

To begin her musical analysis Pfau establishes C as a tonal reference in phrase 1a, because of its reiteration as an axis in the opening melody (see her phrasing in Appendix 4). Pfau's phrase 1b takes the sound space to high C, articulating the octave through melodic contour and text segmentation into the lower fifth and upper fourth this time with G as a pivot. Thus, phrase 1b leaves the fluctuation of 1a "by freeing itself from the close proximity to the final."[23] The sound spaces are the same at the beginning and the end of the line, the first melodic gesture ascending, the last descending, while the middle moves in both directions. Pfau suggests that this is the same tripartite grouping as the overall 3-part form of the piece. She proposes that balance and symmetry are not only normative for "O quam," but are also its creative potential. She clarifies that, "In terms of process philosophy, a motion from a potential to the actualization of that potential is involved in any creative activity,"[24] but

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[23] Ibid.

[24] Ibid., p.73.

that different forms of realization are both possible and necessary. "It is this ever-changing realization of one underlying formal idea that warrants the dynamic process metaphor," and indeed "... relations among [each facet of the composition] change as soon as one element is modified."[25]

Pfau describes the relationship of change between the authentic phrases. After 1b marks out a sound space and melodic contour, phrase 1c takes it as its model. With 2a, drastic alterations appear in the initial segments of phrase statements. Though the melody has the same sequence in 2a as 1b, the text is grouped differently: there is one large gesture instead of two because of the change in declamation (*inspexit* crosses over two melodic gestures). Phrase 2b is further intensified, with the entire melodic phrase over one word, *omnia*. This produces a raised energy level in the middle section of the antiphon. Phrase 3a is more like 1b, though it is made up of only one motion to C. Pfau contends that, "It is only with the last phrase [3b] that each element of the opening is clearly delineated again."[26]

The phrase endings, however, are more markedly different. Pfau claims that (her) two phrases of part 2 and 3b "upset a listener's expectation of a simple descent."[27] In my phrasing I suggest that section 2 is made up of four phrases

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[25] Ibid., p.74.

[26] Ibid., p.75.

[27] Ibid.

not two. Thus instead of an altered "simple descent", contrasting phrases are utilized to expand the lower register to G. In 3b the contrasting material becomes part of the phrase through an "evaded cadence" (to be discussed in greater detail in chapter three). Rather than upsetting the "listener's expectation," phrase 3b, as a culmination of the entire antiphon, fulfills the expectation of closure.

In summary, though Bronarski offers an in depth motivic study of "O quam mirabilis est" he fails to find a generating impetus for the antiphon. Cogan claims to have found the germinating "cell" but ignores the syntax and expression of the text. Pfau uncovers the source of movement in the antiphon, the relationship between the varied versions of the authentic phrases, but she does not establish a theoretic framework to explore the manipulation of registral space within those phrases. Furthermore, none of the three scholars uses the notation as a guiding factor in their methodologies. I believe that using the notation itself as a point of departure yields interesting results in the analysis, and complements well Calvin Bower's study of grammatical units of text and the structural definition of musical elements in chant.[28] In contrast to Bronarski, Cogan and Pfau, in chapter three I propose a theoretic framework which--directly

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[28] Calvin M. Bower, "The Grammatical Model of Musical Understanding in the Middle Ages," *The Hermeneutics and Medieval Culture*, (Albany: SUNY Press, 1989): 133-144.

linked to the notation used in Hildegard's manuscripts--can be applied to her other chants as well (which will be demonstrated in chapter four). I will use the structural design of the original notation to demonstrate the manipulation of intervallic relationships within the antiphon, and will show further how the manipulation of the soundspaces represents (or is reflected by) Hildegard's text.

III: COMPOSITIONAL DESIGN: NOTATION AND REGISTRAL SPACE IN "O QUAM MIRABILIS EST"

The Notation in the Dendermonde and Riesenberg Codices

Before proceeding to my analysis of "O quam mirabilis est" it is necessary first to describe Hildegard's notational system and show how it can be interpreted analytically. The notation used in the Riesenbergkodex and the Dendermonde codex, can be described as early German, chronologically between that found in the St.Gall manuscripts and the later German Hufnagel (or Gothic) script. The basic neume types and their transcription into modern notation are shown in Example 3.1.

As is commonly known, in early chant notation neumes were written above the text to remind the singer of the shape of a given melody. The neumes indicated relative contour not precise pitches or intervals; not until later were they used in conjunction with staff lines. The resulting notational system of staff lines and neumes indicated not only specific pitches, but also the movement from one pitch to the next and the general contour of groups of notes. Modern notehead transcriptions leave us visually with only a succession of pitches; we lose the movement and the contour. Hucbald, when writing about a Greek letter notation system which indicated specific pitches by letter as an alternative to the

traditional neumatic system, wrote in his *De harmonica institutione*:

> Yet the customary notes [i.e. traditional neumes] are not considered wholly unnecessary, since they are deemed quite serviceable in showing the slowness or speed of the melody, and where the sound demands a tremulous voice, or how the sounds are grouped together or separated from each other, also where a cadence is made upon them, lower or higher, according to the sense of certain letters--things of which these more scientific signs can show nothing whatsoever.[1]

Since pitches and groups of pitches can be notated in many ways, a choice has to be made by the composer or scribe of one symbol over another. Often the choice of notation is based on the direction of motion within the melody, as well as the syllabic delineation of the text through neumatic groupings.[2] Additionally however, I am suggesting that the notational choice can provide performance indications and can also illuminate the structural importance of individual pitches, which is of particular relevance to this study.[3]

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[1] Hucbald in Babb, p.37.

[2] Since all notes within a neumatic grouping (or ligature) should be sung to a single syllable, the ligatures tell the singer how to match the text with the music. The precision of the text underlay in both the Dendermonde codex and the Riesenbergkodex makes this matching process very easy (see Example 3.4a and b).

[3] The notational groupings are not merely visual representations of pitches for the performer or analyst, but can be (and maybe ought to be) emphasized in performance by either a re-articulation or accentuation of the syllable at the beginning of each neumatic grouping or through a slight hesitation preceding each grouping. For instance, at the word "omnia" in phrase 2(c) (Example 3.2), we find three gestures that in modern notation resemble what we would term lower neighbour figures, but the middle gesture (two puncti followed

Example 3.3 demonstrates how the choice of notational figures affects the interpretation of a musical unit. The first word of the antiphon, the exclamation "O," is sung to a series of ten pitches. The initial neume, a scandicus which comprises two puncti followed by a virga, points to the E, the third. This is followed by the climacus which begins with a virga on F and descends to C with three puncti, a fourth. The series of pitches however could have been notated in several other ways. For example, the first seven pitches could have been notated with: (1) a four-note scandicus ending on F with the climacus beginning on E, which would have established a fourth first and then a third, or (2) with a pes followed by a torculus and two puncti which would have simply established the third. The actual notation, however, presents a third followed by a fourth.

A notational decision must be made even when a syllable is being sung on a single pitch; either a punctum or a virga can be utilised (see Example 3.1). Generally, the virga is used to signify a higher note "in relation to the note which

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by a virga) is notated differently from the first and the third gestures (both porrecti). Structurally the important tones are C, A and F just as they would be if the notation were three porrecti, but the performance of the three gestures differs. Three porrecti would suggest a straight performance of the sequential passage, while the actual notation of "omnia" might suggest an alternate approach to the performance of the middle gesture: a hesitation before the final A, or a detached rather than legato quality to the figure.

precedes or follows."[4] For instance, at the word "divini" the melody descends through a climacus from high C to F and then steps back up to G which is notated by a virga (see Example 3.4a); the virga indicates that the G is higher in relation to the note that precedes it. However, in Hildegard's manuscripts the virga is also used to emphasize individual pitches. Returning to the word "divini" in Example 3.4a we can see that the last syllable is sung to the single pitch G marked by a virga, but the notes preceding and following it are also G. The virga is thus not being used to indicate a higher pitch, rather it highlights or emphasizes G as a structural tone within the phrase. Similar uses of the virga can be found at "omnem creaturam," and "inspexit" in "O quam mirabilis est" (Example 3.4b and c), as well as at "comprehendendo" and "tertia undique" in "O virtus sapientie" (Example 3.5a and b).[5]

Through detailed analyses of several of Hildegard's antiphons a hierarchy of tones by placement within neumatic groupings is made apparent. I will explain briefly how each neume can be interpreted structurally. The third and fourth neumes in Example 3.1, the flexus (or clivis) and the pes, are both two-note groupings. The second pitch is lower than the

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[4] Dom Eugène Cardine, *Gregorian Semiology*, translated by Robert M. Fowels (Solesmes: Abbaye Saint-Pierre de Solesmes, 1982): 18.

[5] There may be a association here with word endings which would correspond to Calvin Bower's grammatical approach.

first in the flexus and higher than the first in the pes. In both cases the first note receives emphasis and is more likely to carry structural meaning,[6] except: (1) when either the flexus or the pes is found as a passing figure between two other identifiably structural tones, (2) when the flexus is found at the end of a phrase, in which case either both pitches assume importance or only the second pitch does.[7] The second note of the cephalicus, a liquescent flexus, is always lighter, thus, as with the flexus, the first pitch is structural.

The porrectus and the torculus, the next two neumes in Example 3.1, are both three-note neumatic groupings. Though the porrectus and the torculus resemble lower-neighbour and upper-neighbour figures respectively, the first and third pitches are not always the same (in other words the porrectus could, for example, represent AGB, rather than AGA). When the first and third notes of the porrectus or torculus are the same, they represent the structural pitch for the figure. When they are not the same one has to look at the context of the neume (the approach to it and the figures following it) to

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[6] Dom Cardine and I would seem to agree. When describing a pes with an added episema he writes that, "The episema underlines the importance of the second note...After a light leap from a lower note, the melody reaches an important structural note," p.36. If the scribe or composer has to mark the second note in order for it to bear structural weight, then under normal circumstances the two either share the same structural importance or the first note is stronger.

[7] In Hildegard's manuscripts I have yet to find a pes at the very end of a phrase.

determine which pitch is structural.

The next two neumes in Example 3.1, the climacus and the scandicus, each comprise one virga and at least two puncti. The climacus begins with a virga and *descends* with puncti, while the scandicus begins with puncti and *ascends* to a virga. In both neumes the virga is always structural; sometimes, depending on the context, the last pitch of the climacus or the first pitch of a scandicus (both puncti) also bears structural weight (if for example the climacus is followed by a leap, or the scandicus begins a phrase).

Though most of the notation is straightforward for transcription and for deducing structurally important notes, the symbol of the quilisma offers an interpretive problem.[8] In St.Gallen script, the quilisma looks like "two *or* three semicircular loops [italics mine]" and is always attached to a virga (see Example 3.7a).[9] The two are distinguished by

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[8] There are five additional neumes related to each other which are found in Hildegard's notational system (see Example 3.6) that are not completely clear. They are given a variety of names including "pes stratus" (Example 3.6b, Cardine), "pressus" (Example 3.6d Cardine; Example 3.6c, d, Corbin) and "Gutturalis" (Example 3.6a, b, Fleischer). The common interpretation is the repetition of the pitch represented by the wavy line on top (although Fleischer transcribes the wavy line as three pitches in the shape of a lower-neighbour figure). The symbols, however, are used infrequently, unlike the quilisma and the other notational symbols I have discussed, and I have labelled each of them "pressus". Solange Corbin, *Die Neumen* (Köln: Arno Volk-Verlag - Hans Gerig KG, 1977); Dr. Oskar Fleischer, *Die Germanischen Neumen: als Schlüssel zum Altchristlichen und Gregorianischen Gesang* (Frankfurt: Frankfurter Verlags-Anstalt, 1923).

[9] Cardine, p.199.

"the copyist of the oldest of the St.Gall MSS": the Cantatorium of St.Gall from the early tenth century.[10] The symbol with two semi-circles is used when the interval between the semi-circles and the virga is a whole tone while the three semi-circle symbol is used for a variety of intervals greater than the whole tone. The quilisma in the both the Dendermonde and Riesenberg Codices looks fairly similar to the St.Gallen quilisma (see Example 3.7b). After a careful examination of both manuscripts I have concluded that Hildegard consistently employs the double loop quilisma for whole tones and the triple loop for a third (or larger interval) just as quilismas are used in the Cantatorium.

For performance, Cardine suggests that the note represented by the quilisma is light,[11] regarding it as a non-structural passing tone, while Oskar Fleischer interprets the quilisma as a mordent,[12] which gives the main note of the quilisma some structural weight since it is being embellished. Marianne Richert Pfau notates the quilisma as several notes, lengthening the rhythmic value. Noting the double loop/whole tone connection it seems unlikely that the note preceding an ascending leap of the interval of a third (or greater) would always be longer than the note preceding a whole tone ascent. However, it must indicate something more than "sing a whole

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[10] Ibid.

[11] Cardine, p.204.

[12] Fleischer p.126.

tone" or "sing a third" because other neumes could have been used, such as the pes or a punctum followed by a virga. We will assume that the quilisma indicates a slight lenthening of the note and that the second pitch is structural because it is a virga. However, the emphasis the first pitch receives by its lengthening (or whatever special quality is attached to it) also gives it weight, and this weighting will sometimes be reflected in my analysis.

Each of my graphic analyses consists of four layers, or strata. The top layer, a careful transcription, clearly depicts the original notation by the labelling of the neumatic groupings and the addition of stems to designate the virgas, either alone or as part of scandici, climaci, or quilismas. In the second layer I have added slurs to show: (1) structurally retained tones (e.g., in layer two of Example 3.9 I slur middle C to middle C); (2) pitches that belong together (e.g., the climacus FEDC in Example 3.9); and (3) the delineation of a sound space (e.g., in Example 3.9 the C of the scandicus to the E of the pes shows the CE sound space). In the second stratum I have also added stems to indicate important pitches in the pes, flexus, porrectus, and torculus. The third layer is a reductive highlighting of the modal-scalar spans within which passages move, while the fourth layer is a summary of the spatial design (generally without slurs).

Analysis

Though many have recognized delineation of soundspaces as an important characteristic of Hildegard's music--including Marianne Richert Pfau and Peter van Poucke, editor of the Dendermonde facsimile--no one has commented on its manipulation. Continual interplay occurs in "O quam mirabilis est" between the spaces of the CE third and the CF fourth and between the CF fourth and the CG fifth, as exemplified in Example 3.8, a summary of the spatial design of the antiphon. By using Schenkerian graphic technique it looks as though I have converted this monophonic piece into polyphony. However, the two parts in my Example 3.9 do not represent voices, but rather the tonal space in which Hildegard works, framed by the structural retention of the initial tone, which is also the final.[13] As Guido of Arezzo remarks in his *Micrologus*, "The previous notes, as is evident to trained musicians only, are so adjusted to the last one that in an amazing way they seem to draw a certain semblance of color from it."[14] The antiphon as a whole, and each phrase within, moves away from C and back to it. It is indeed a reference point for all other motion.

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[13] Milton Babbitt states in relation to the construction of a melody, specifically the construction of a *cantus firmus* in species counterpoint, that "it is a study...of the nature of the closed structural line, and of the multi-linear nature of the single line," Milton Babbitt, review of *Structural Hearing*, by Felix Salzer, in *Journal of the American Musicological Society*, (1952): 263.

[14] Guido in Babb, p.66.

In Example 3.8 one can see that phrase 1a initiates the activity between the sound spaces of the third and the fourth (as discussed earlier in regard to notational choices). Phrase 1b moves through the CE third, and rests on the CG fifth before proceeding to the CC octave. The melody returns to the CG fifth and then moves down to the CF fourth. As described in chapter one, according to Hermannus Contractus fourths and fifths can define modalities by their juxtaposition.[15] Since every octave can be divided by fourths and fifths in two ways--a fourth plus a fifth (e.g., CF FC, with F as the final) or a fifth plus a fourth (e.g., CG GC, with C as the final)--a composer can hint at one modality while in fact being in another. The CF fourth at the end of phrase 1b is modally ambiguous within the context of a C-final chant--since that fourth belongs to F-final chants--and is thus unstable compared to the CG fifth. Furthermore in Guido's theory of *modus vocum*, a pitch itself has a modal quality which is created by its surrounding intervals.[16] The

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[15] Treitler similarly talks about fourths and fifths (tetrachords and pentachords) as the "building blocks" of melodic construction in Guillaume Dufay. He argues that this is why melodies which combine both authentic and plagal are not uncommon and are even classified as a separate category by Tinctoris (ca.1436-1511). Tinctoris writes [Treitler's translation], "...if the authentic tone descends below its final all the way to the diatesseron, it should be called mixed ...," and also that "... if the plagal tone ascends all the way to the octave of its final ... it becomes mixed ...," p.141.

[16] Guido writes, "Since there are just seven notes ... it suffices to explain the seven that are of different modes and different qualities. The first mode of notes arises when from

B-flat at the end of phrase 1b, which as a whole tone (rather than a semitone) below C does not complement a C-final tritus as Guido has outlined, is typically used instead of B-natural in F-final pieces, and complements the CF fourth.[17]

The instability of the CF fourth at the end of 1b raises the expectancy of movement away from the fourth to either a CE third, which would also be unstable, or to a stable CG fifth sound space. Phrase 1c realizes this expectancy by moving again through the third to the fifth. And in fact, the melody lingers momentarily on the quilisma F (recalling the fourth) before proceeding to G (the fifth). After the sound space changes to the octave and back to the fifth, it again compresses to the CF fourth, which results in an implied CE third or CG fifth at the end of the phrase. It is the third

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a note one descends by a tone and ascends by a tone, a semitone, and two tones, as from A and D. The second mode arises when from a note one descends by two tones and ascends by a semitone and two tones, as from B and E. The third is that in which one descends by a semitone and two tones but ascends by two tones, as from C and F. The fourth goes down by a tone but rises by two tones and a semitone, like G," in Babb p.63.

Guido's idea of *modus vocum* and its applicability here was brought to my attention by Professor Sarah Fuller.

[17] Guido of Arezzo writes, "Moreover B-flat, which is less regular and which is called "added" or "soft," has a concord with F, and is added because F cannot make a concord with [B-natural] a fourth away, since it is a tritone distant," p.64. At this point it should be clear that I take all B-flats and B-naturals literally. Since B-flat is placed very carefully in some phrases of the chant, it seems unreasonable to assume inconsistency on the part of the scribe or composer. Instead I assume that the B-flats are B-flats and the B-naturals are B-naturals. B-flat (the rotundus) and B-natural (the quadratus) are both part of the gamut, they are not extraneous pitches. Using the two is an exploitation of the pure system.

which is picked up at the beginning of phrase 2a as manipulation of the sound spaces continues.

Looking at the music on a local level, by examining the notation, will demonstrate how these structural spaces are delineated. As mentioned earlier, the choice of notation in the plagal phrase 1a establishes the third/fourth conflict. The initial neume, a scandicus which comprises two puncti followed by a virga, points to the E, the third. This is followed by the climacus which begins with a virga on F and descends to C with three puncti, the fourth. The flexus above the word "quam" emphasizes the D, which functions both as an embellishment to C and as a step leading to the structural E of the pes on the syllable "mir", producing another third. The end of the phrase descends through the CE third soundspace on "mirabilis," each step emphasized by a virga (not a punctum). The notation of 1a thus suggests two analyses (see the brackets in Example 3.9 labelled x and y): the phrase could be analysed as an enlargement, where the descending figure of the climacus from F to C is enlarged over the entire phrase (bracket x), or as a symmetrical structure: CE CF CE (bracket y). The symmetry of the second reading matches the symmetry of the general contour of the phrase, but the first reading is compelling through its motivic underpinning. Indeed the two possible readings confirm the third/fourth conflict. In bracketed Example 3.9x the F would remain as the top of a CF soundspace, while in Example 3.9y the E, as part

of a CE soundspace, would have returned.

The ambivalence at the end of 1a becomes stability in the CG fifth in the authentic phrase 1b: the G is approached from below and then prolonged by a double-neighbour with the flexus A above, and a porrectus F below (see Example 3.10). The move to the high C still retains G which is confirmed by the movement back to it and the virga G which follows on the syllable "ni" from "divini". This AF double-neighbour figure is varied in every authentic phrase and culminates in phrase 3a when it defines a CFC sound space rather than embellishing the CG sound space (see Example 3.11 which compares the first half of all of the authentic phrases). Until phrase 2c the double neighbour embellished the G that appears before the ascent to high C. However, in phrase 2c a leap to the high c immediately follows the arrival on G. The double-neighbour occurs as part of the *descent* to the following G rather than the *ascent* from G which precedes. In phrase 3a, the double-neighbour again follows the high C rather than precedes it. This time however, it is punctuated by two flexi on A and a flexus followed by a pes on F, accentuated by the quick alternation of syllables. The double-neighbour at this point highlights the fourth/fifth conflict by establishing a CF fourth (as part of a CFC soundspace) earlier in the phrase than has been usual.

Until phrase 3a the CF fourth occurs only at the end of the authentic phrase, embellished by a lower neighbour B-flat,

as the repetition of a sequential motive (see the brackets in the third stratum of Example 3.12). It imitates the GC fourth, embellished by a lower neighbour F, which is outlined after the ascent to high C in the authentic phrases. This sequential motive functions formally as the initiator of the closing, or cadential, gesture. Until the last two phrases of the antiphon, the motive is straightforward--the only deviation from the model is that B-flat alternates with B-natural phrase by phrase. However, in the last two phrases the alteration of the motive is complex enough that it introduces new material towards the end of the antiphon, a recurrent feature in the antiphons to be discussed in chapter four.

In phrase 3a, as described above (see Example 3.13a), the F becomes more than a lower neighbour to the GC fourth. Rather than functioning as a neighbour tone, the F delimits the bottom range of an FC fifth (CFC soundspace) before proceeding to the GC fourth which produces an alternative to the sequential motive. In phrase 3b the sequential motive is altered in both its instances. In its first occurence, instead of reaching down to F as a lower neighbour the melody leaps to E only passing through F in an ascent to G (Example 3.13b). Similarly, at the moment when one expects the movement to B-flat as a lower neighbour to the CF fourth in the cadential figure, the melody leaps past B-flat to A and G descending into the plagal range and evading the expected

double-neighbour cadential gesture (Example 3.13c). This results in a new sequential motive in the fourth stratum of my analysis: a CG fifth becomes a CF fourth (highlighting the two divisions of the CC octave) followed by a GD fifth which becomes a GC fourth (highlighting the two divisions of the GG octave, see the brackets in the fourth stratum of Example 3.13c).

Through the joining together of authentic and plagal phrases, phrase 3b summarizes the entire sound spectrum of the antiphon. Phrase 3b furthermore resolves the fourth/fifth conflict. In the new sequence the G is prolonged through its transformation from a CG fifth to an eventual GC fourth (see Example 3.13c). Thus, the F (on the syllable "ta") does not really establish a CF fourth soundspace. Rather, it contributes to closure of the antiphon by initiating the articulation of each step between G and the final C of the prevailing fifth sound space. The G is retrieved at the end in the final climacus flourish reminding us that it is still the top of the fifth space.

An examination of the text (reproduced in chapter two as Figure 2.2, p.19) will contribute to a review of the overall activity of the antiphon. As Pfau suggested, the texts of the first and third stanzas are exclamatory statements, while the middle stanza is explanatory. When the text moves from an expository statement to free commentary an increase in

activity or tension is perceived in the music (see my transcription in Appendix 2''). The tension is established by the varied repetition of patternings: the climactic high C in phrase 2c is approached without the intervening double neighbour figure on the preceding G as it was in previous versions of the phrase. The high C is also approached by leap rather than by step. This creates an accelerated motion between articulated sound spaces (in terms of elapsing time), which, together with the alternations of authentic and plagal phrases in the second section, produces the tension that culminates in the final phrase 3b. In 3a G is embellished again, but the high C is still approached by leap. Phrase 3b returns to both a longer embellishment of G, and the conjunct motion to the high C found in phrase 1b. As well phrase 3b sums up all of the tonal spaces used throughout the piece in its combination of the authentic C to C phrase with the plagal G to G phrase. Though it introduces new melodic ideas through the alteration of the sequential motive from 1b, phrase 3b offers closure through the retention of the CG fifth (which, of course, is found in both the authentic and plagal ranges) and through the articulation of each step through that CG registral space.

The illumination in Example 3.14, which illustrates Hildegard's second vision from her *Book of Divine Works* (Liber Divinorum operum), helps clarify the meaning of the text. As Sabina Flanagan notes, the illumination renders the human as

a microcosm in the macrocosm of the universe.[18] The human figure is depicted in the centre of the sphere of the universe connected to the winds, represented by animal heads, and the heavenly bodies. In a similar vein Hildegard writes about the transformation of the humours in man through their interaction with the humours of the universe (the microcosm with the macrocosm):

> Then I saw that by means of the different qualities of the winds and their concurrent airs, the humours which are in man are stirred up and changed, assuming their qualities.[19]

The image of the microcosm and macrocosm in Hildegard's antiphon is conveyed through the text and the music, and the relationship between the two. The final phrase of "O quam mirabilis est" contains the tonal spaces used throughout the entire antiphon by combining both the authentic and plagal phrases. Phrase 3b is thus a microcosm in the macrocosm of the antiphon. As well, individual words and phrases in the antiphon are reinterpreted as they are transformed from plagal to authentic or authentic to plagal (see the boxes in Example 3.15). The text "*hominis quem formavit*" (the man whom he formed) becomes "*forma hominis*" (human form). The first "*hominis*" appears in the context of an authentic (C to C) phrase (2a), while the second "*hominis*" appears in the context

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[18] Flanagan, p.145.

[19] From Vision 3, chapter 1 of the *Book of Divine Works* as quoted (and translated) in Flanagan, p.147.

of a plagal (G to G) phrase (2d). Similarly "*Quem formavit*" is part of the plagal 2b, while "*forma*" is part of the authentic 2c.

The most striking example of this transformation is with the text, "*O quam mirabilis est,*" which occurs twice, once as a plagal phrase, the second time as an authentic phrase. Furthermore, the transformation of the text "*O quam mirabilis est*" is linked to the third/fourth/fifth conflict. As established earlier, the opening phrase delineates the third/fourth conflict. In fact this is initiated within the first few notes of the phrase. The melody in 3a, as discussed, gives weight to the CF fourth earlier in the phrase and in a different location than in any of the other authentic phrases. Thus the reinterpretation of the text marks a transformation of the sound spaces. The transformation of the text and its consequent re-setting hints at the presence of authentic in plagal and plagal in authentic (the human in the universe and the universe in the human). In the second segment of "O quam mirabilis est" Hildegard alludes to this microcosm/macrocosm image when she writes, "For when God looked on the face of the man whom he formed, he saw all his works whole in that same human form."

IV: MANIPULATION OF REGISTRAL SPACE IN SELECTED ANTIPHONS

In order to explore the applicability of the methodology I developed in chapter three, I will discuss four other antiphons by Hildegard--"Hodie aperuit," "Nunc gaudeant," "O virgo Ecclesia," and "O virtus sapientie"--examining differences and similarities in procedure (transcriptions of these four antiphons can be found in Appendix 2).[1] Though in no way a complete or statistically representative sample of her works, the antiphons were selected according to their finals and their textual relationship to each other and "O quam mirabilis est." These pieces do not have the same degree of internal repetition of melodic units and cadential endings as "O quam mirabilis est," but they share similar procedures with "O quam" in the handling of spatial relationships, particularly in the divisions of octaves and in the establishment of the fifth above the final as a stabilising feature.

In this chapter I will first describe the textual relationships between the selected antiphons and "O quam mirabilis est," followed by a summation of general musical features of the antiphons such as the first and last pitches

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[1] "Nunc gaudeant" is found on ff.170-170v (D) and f.472va (R), and "Hodie aperuit" on f.154v (D) and f.467ra (R). "O virtus sapientie" is on f.466rb (R), and "O virgo Ecclesia" on f.170 (D) on f.472rb-va (R).

of each phrase, cadential gestures and melodic repetition. Each antiphon will then be considered individually in regard to its spatial design as it relates to the other four antiphons and to "O quam mirabilis est." Finally, I will argue that new material--manifested as either a melodic phenomenon or a spatial development--introduced towards the end of each of the antiphons serves as a signal for closure.

The Antiphons and their Texts

The psalm antiphon "Hodie aperuit" and the votive antiphon "Nunc gaudeant" were obvious choices as comparative pieces since they are Hildegard's only other C-final antiphons. In addition to having the same final as "O quam mirabilis est," the two texts share similar textual images (see their respective texts in Figures 3.1 and 3.2 below). "Hodie aperuit" describes the lifting of the Serpent's hold on humanity through "the closed gate" which as Mary's womb--the bearer of Christ--"has opened to us."[2] Through the birth of Christ "the flower of the Virgin Mary gleams in the dawn." In "Nunc gaudeant," a votive antiphon, the "motherly heart of the church" is to rejoice because the Serpent has now been confounded through Christ's death and resurrection. Those that were in his grasp "gleam in the blood of God's Son."

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[2] See Newman's commentary on this antiphon, p.273.

Figure 4.1 Text and Translation of "Hodie aperuit"

Hodie aperuit nobis clausa porta quod serpens in muliere suffocavit unde lucet in aurora flos de Virgine Maria.	Today a closed gate has opened to us that which the serpent choked in a woman, hence the flower of the Virgin Mary gleams in the dawn. Translated by Barbara Newman.[3]

Figure 4.2 Text and Translation of "Nunc gaudeant"

Nunc gaudeant materna viscera Ecclesie, quia in superna simphonia filii eius in sinum suum collocati sunt. Unde, o turpissime serpens, confusus es, quoniam quos tua estimatio in visceribus suis habuit nunc fulgent in sangine Filii Dei, et ideo laus tibi sit, rex altissime. Alleluia.	Now let the motherly heart of the Church rejoice because in supernal harmony her children are gathered into her bosom. Hence, O shameful serpent you are confounded because the ones your jealousy held in its maw now gleam in the blood of God's Son, and therefore praise be to you King most high. Alleluia. Translated by Barbara Newman.[4]

Since E is the most represented final in Hildegard's oeuvre, to complement the C-final pieces, I chose two E-final antiphons, "O virgo Ecclesia," and "O virtus sapientie." The

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[3] Newman, pp.116-7.

[4] Ibid., pp.252-3.

first is paired textually with "Nunc gaudeant," and appears immediately before it in both the Dendermonde and the Riesenberg codices. The second appears immediately before "O quam mirabilis est" in the Riesenberg codex (see their respective texts in Figures 3.3 and 3.4 below). "O virtus sapientie" is not closely linked to "O quam mirabilis est" textually, except in its references to the omniscient God: in "O quam" Hildegard describes the "foreknowledge of the divine heart which foreknew all creation," while in "O virtus sapientie" she depicts Wisdom, and the representation of the Trinity, as one who "[encompasses] all in one path that possesses life."

Figure 4.3 Text and Translation of "O virgo Ecclesia"

O virgo Ecclesia, plangendum est, quod sevissimus lupus filios tuos de latere tuo abstraxit.	O virgin Church we must grieve because a most savage wolf has snatched your children from your side.
O ve callido serpenti!	O woe to the cunning serpent!
Sed o quam preciosus est sanguis Salvatoris, qui in vexillo regis	But O how precious is the blood of the Saviour who with the King's standard
Ecclesiam ipsi desponsavit,	married the Church to himself
unde filios illius requirit.	therefore he is seeking her children.
	Translated by Barbara Newman.[5]

[5] Ibid., pp.250-1.

Figure 4.4 Text and Translation of "O virtus Sapientie"

O virtus Sapientie, que circuiens circuisti, comprehendendo omnia in una via que habet vitam, tres alas habens, quarum una in altum volat et altera de terra sudat et tercia undique volat. Laus tibi sit, sicut te decet, o Sapientia.	O energy of Wisdom you who circled circling encompassing all in one path that possesses life having three wings of which one flies on high and the second distils from the earth and the third flies everywhere. Praise be to you as befits you O Wisdom. Translated by Barbara Newman.[6]

"O virgo Ecclesia" and "Nunc gaudeant" were both written for the dedication of a church and share descriptions of the threat of the Serpent to the ultimate victory of Christ. In "O virgo Ecclesia" we are to grieve because a "savage wolf has snatched [Ecclesia's] children" from her side, but we are reassured because the Saviour is "seeking her children." In "Nunc gaudeant," the counterpart to "O virgo Ecclesia," we can now rejoice because Mother Church has gathered her children and they shine "in the blood of God's Son."

Phrases, Cadences and Recurring Melodic Figures

"Hodie aperuit," "Nunc gaudeant," "O virgo Ecclesia," and "O virtus sapientie" differ greatly in surface musical detail

[6] Ibid., pp.100-101.

from "O quam mirabilis est." They will be described in relation to "O quam" which has a high degree of repetition in the use of the final C as both the initial and ending pitch of every phrase, in the recurring cadential figure, and in the reiteration of the authentic phrase.

"Nunc gaudeant" is the most uniform of the four antiphons. All of its phrases end on the final C and just four phrases begin on an alternate pitch; it uses three cadential figures, one of which occurs only twice. In "Hodie aperuit" three of nine phrases begin, and one phrase ends, on pitches other than the final, while in "O virgo Ecclesia" four of twelve phrases begin, and two end, on alternate pitches. In "O virtus sapientie," the most varied, six of ten phrases begin, and seven phrases end, on pitches other than the final. In contrast to "O quam mirabilis est," which uses two different cadential gestures, "Hodie aperuit" and "O virgo Ecclesia" use five different gestures, and "O virtus sapientie" uses eight.

However, just as the repetition of the final C and the recurring cadential figure in "O quam" function as structural dividers between phrases, varied beginnings or endings can also contribute significantly to structural delineation in a piece. For instance, though "O virgo Ecclesia" incorporates five different cadential figures, the approach from below--CDE--is used for five phrases in a row (phrases 2 through 6). The altered cadential figure in phrase 7 draws attention to an

important moment in the text of "O virgo Ecclesia." The text radically shifts tone from the grieving over Satan's hold in the first section, to the assurance of salvation in Christ in the second section ("O ve callido serpenti! [O woe to the cunning serpent!]").

Though there are certainly many differences in surface features between the antiphons examined, some melodic patterns are shared between pieces with the same final. Even a cursory look at Hildegard's repertoire will reveal this common occurence in her music.[7] It is not surprising, however, that characteristic melodic gestures arise from different patternings of whole tones and semitones around a central pitch (nor is this practice restricted in the Middle Ages to Hildegard's music), since recurring melodic and harmonic patterns also characterize the two modes of tonal music--the major and minor keys.[8]

Both Hildegard's C-final antiphons and E-final antiphons share melodic figures within their respective groups. The authentic phrase from "O quam mirabilis est" recurs in part as a melodic gesture and in its entirety as a phrase unit in the other C-final antiphons. In "Nunc gaudeant" the whole phrasal

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[7] Bronarski's tables of motives demonstrate these recurrences quite thoroughly (see Appendix 5).

[8] The most obvious harmonic example is of course the modulation in major keys from tonic to dominant, as opposed to the frequent modulation in minor keys from tonic to mediant. For one discussion of recurring melodic/harmonic patterns in tonal music see Robert O. Gjerdingen's, *A Classic Turn of Phrase* (Philadelphia: University of Pennsylvania Press, 1988).

contour (not exact repetition) occurs only twice (phrases 4 and 8), but the beginning gesture (CEFG) is used as the opening melodic idea for several phrases (3, 8, 11, 13, and 14). Phrases 13 and 14 also include the next melodic element from the authentic phrase, the embellishment of G (GAGFEFG). In "Hodie aperuit," the authentic phrase--structurally the climactic phrase of the antiphon--occurs right before the end of the piece, soaring into the authentic register when the rest of the antiphon remains in the plagal range. Beginning and ending on E, rather than C, it is a striking new idea in the context of this antiphon.

The rise of a fifth from E to B--especially at the beginning of phrases--is common to many of Hildegard's E-final pieces. The rising fifth appears in both "O virtus sapientie" and "O virgo Ecclesia," but in different contextual situations. "O virtus sapientie" uses the melodic figure as a broad opening gesture for the antiphon, in contrast to "O virgo Ecclesia" which uses the gesture only once, late in the piece in a signal for closure. Just as the "O quam" authentic phrase is used in "Hodie aperuit," the EB gesture in "O virgo Ecclesia" marks the beginning of the climactic phrase right before the end of the antiphon. Though the pitch B occurs earlier in the antiphon, as the last pitch in the EB upward sweeping gesture it acts as a pivot, pushing the piece into the authentic register from the plagal range of the rest of the antiphon.

In summary, in contrast to "O quam mirabilis est," none of the four antiphons begins and ends every phrase with the same pitch, in some of the antiphons the cadential figures are widely varied, and all of the antiphons have little internal melodic repetition, especially of whole phrases, although melodic ideas are shared between pieces with the same final. However, all five antiphons use similar procedures in the delineation of soundspaces. Before proceeding to a discussion of each antiphon individually I will describe the concept of pivot tones and how they relate to the manipulation of registral space in these antiphons.

Pivot Tones and Registral Space in the Antiphons

Though not expressed in such terms earlier, the concept of a "pivot" is important in the delineation of sound spaces in "O quam mirabilis est," as well as in the other four antiphons examined. I am using the term "pivot" not in the sense of a "pivot chord" from traditional harmonic analysis, where a sounding chord has two functions, one in relation to the tonic which precedes and the other to the tonic which follows, but rather as a pitch which is retained as an axis, and functions as a structure to which all activity refers. In "O quam" the final C acts as an axis to the GC fourth outlined below it and the CF fourth and CG fifth outlined above it, which allows for the CF fourth and CG fifth conflict. Similarly the CC octave, though not a pivot *around which* intervals are expressed, acts as a structural frame *within*

which CF fourths or CG fifths are defined.

As I will describe in the following discussion, the final C functions again as a pivot in the other C-final antiphons, "Hodie aperuit" and "Nunc gaudeant." In "Hodie aperuit" C is a pivot to the FC fifth below and the CF fourth and CG fifth above, establishing another fourth/fifth conflict which requires resolution. In "Nunc gaudeant" both C and G serve as pivots. C functions as a pivot to the AC third below and the CE third above, clearly establishing C as the central pitch. The pitch G, doubled to form a GG octave frame, functions as a pivot to the GD fifth above the lower G and a CG fifth below the upper G, making reference to--and creating a conflict between--the two possible ways of di.iding the GG octave.

In both E-final antiphons, "O virgo Ecclesia" and "O virtus sapientie," which will be discussed after the C-final pieces, an EB fifth functions as a structural frame. Tensions arise, however, because the frame is not constant: it shifts to the neighbours C (above B) and D (below E). In "O virgo Ecclesia," E also serves as the bottom anchor to the EA fourth within an EC sixth. Similarly, in "O virtus sapientie" B acts as a pivot to the upper BE fourth through a BD third.

Observations on the Four Selected Antiphons:

"Hodie aperuit"

From the opening phrase in "Hodie aperuit" C functions as a pivot, drawing attention to its role in establishing a fourth-plus-fifth (in a GCG octave), or a fifth-plus-fourth

(in an FCF octave). Beginning with a descent in thirds (CA/BG, see Example 4.1) C is quickly retrieved and embellished, and proceeds to initiate a GC fourth below C. In the second part of the phrase, C begins the ascending motion to establish a CG fifth above the final, clearly outlining a fourth-plus-fifth GCG octave. At the end of phrase one the dip down to A which leaps back to C, suggests further motion to fill the gap from A to C, and displaces the previously established GC fourth.

Phrase two clearly moves to an FC fifth (Example 4.2) which is complemented in phrase three with a CF fourth above the final completing the FF octave (phrase three is incidentally the first and only phrase which begins with the pitch F, see Example 4.3). Phrase three also serves to establish the CF fourth (FF octave) and CG fifth (GG octave) conflict: a CF fourth at the beginning of the phrase moves to a CG fifth and back to a CF fourth. The fourth at the end of the phrase is complemented by a B-flat underneath, which, again, in Guido's theory of *modus vocum* causes ambiguity for C as a final,[9] and gives stability to the CF fourth as part of an FF octave.

Phrase four reiterates the CG fifth, establishing a GG octave, and then expands it to a CA sixth above C (see Example 4.4). However, it recalls the FF octave by retaining the B-flat as a lower neighbour to C. This B-flat appears in every

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[9] See p.40 above.

phrase now until the last two. Phrase five begins with a CE third briefly touching on a CF fourth before returning to the CE third. It reclaims the CF fourth (the FF octave) by the end of the phrase in the same figure as phrase three, again complemented by a B-flat below (see Example 4.5). The cadential phrase six returns to a GG octave with the outlined GC fourth (see Example 4.6). The AC gap from phrase one is this time filled in, following the leap, in a double neighbour embellishment of C.

Phrase seven with its double neighbour cadential gestures pairs neatly with phrase six, however its motion is above C rather than below, and hints at a CF fourth (the counterpart to the previous GC fourth, see Example 4.7).[10] Since the F is heard as the non-structural second pitch of a pes, the phrase moves to a CE third, though somewhat unstable because of the B-flat below. The CE third is used to set up the climactic phrase eight which begins and ends on E soaring into the authentic range (and one note beyond the octave, see Example 4.8). Though phrase eight leaves out the final C in its original register, the C underpinning is understood to continue from phrase seven. Phrase eight emphatically presents the G fifth with its many embellishments as primary,

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[10] I would be remiss not to mention here the juxtaposition of a C-cadence figure that steps down to B-natural with a C-cadence figure that steps down to B-flat, even touching on F with a pes (cf. discussion of *modus vocum* on previous page and on page 40 above). The two cadences summarize the role of C as a clear final in relation to B-natural and as an ambiguous final in relation to B-flat.

rather than the F fourth. The pitch G in phrase eight also functions as a pivot to open up the authentic register, and becomes the bottom pitch in the motivic delineation of a new soundspace. In the same way that CG fifths followed CF fourths in previous phrases, the statement of a GC fourth in the upper register is followed by a reach up to D which outlines a GD fifth, and effects the other division of a GG octave (fifth-plus-fourth, rather than fourth-plus-fifth). The final phrase (nine) of "Hodie aperuit" begins with the CE third clearly established in phrase seven and prolonged in phrase eight, and steps through D in its descent to C (see Example 4.9).[11]

The tension in "Hodie aperuit" between the GCG and FCF octaves is established at the beginning of the antiphon: the first phrase outlines GCG but ends with an ambiguous AC third which in phrase two becomes part of an FC fifth (FCF octave). Throughout the antiphon, however, the centrality of the pitch C is never questionable because of both its role in dividing the GCG and FCF octaves and its role as a pivot for the AC and CE thirds. It is only displaced in the penultimate phrase eight when after the return of the CG fifth, the upper GC fourth becomes a GD fifth (DGD octave) which serves to introduce both a new register as well as a new soundspace at

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[11] The B-natural at the end of the first climacus finally supports the *modus vocum* of C with its half step and gives the F the effect of a structural incomplete neighbour to E, an échappé in tonal terms.

the end of the antiphon. The emphasis of an EG third at the end of phrase eight (rather than DG fourth) retrieves GCG, forming an upper third to the CE of the final phrase which, again, steps through D in its descent to C.

"Nunc gaudeant"

Just as the final C functions as a pivot between fourths and fifths in both "O quam mirabilis est" and "Hodie aperuit," in "Nunc gaudeant" the pitch C serves as a pivot not between fourths and fifths, but rather between AC and CE thirds. Furthermore, the momentary interplay in "Hodie aperuit" between the two divisions of the GG octave (phrase eight), occurs as a defining feature in several phrases of "Nunc gaudeant."

The outlining of AC thirds is complemented by the delineation of CE thirds in several phrases of "Nunc gaudeant": phrases one, two, nine, twelve and fifteen. Phrase one begins with a CE soundspace which moves through B-flatD to AC (see Example 4.10). However, rather than moving directly to AC, B-flat steps first to A, outlining an AD fourth before D descends to C to establish the AC third. Phrase two picks up the AC third and in a similar motion expands to an AD fourth and AE fifth, contracting to a BE fourth before a return to the CE third (see Example 4.11).

Unlike phrases one and two, phrase nine moves more directly from AC through B-naturalD (not B-flat) to CE (see

Example 4.12). While phrase twelve is melodically similar to phrase nine, some individual pitches in the melodic line carry different structural meaning. The new syllabification and neumatic groupings change melodic emphasis within the phrase (compare Examples 4.12 and 4.13). The AC third now moves through BD to C, followed by a CE third which moves back through BD to rest on C. Just as phrase thirteen presents a concise statement of the CG and GD fifths with CG predominating (which will be discussed below), the final phrase of the piece (fifteen) sums up the AC/CE motion by setting up an AC soundspace and then moves directly from an AC quilisma to a CE quilisma (4.14). In the first direct motion in the piece from one of these thirds to the other, at the end of the antiphon C is highlighted as a pivot between the two.

The GG octave is used as a structural frame in which to outline the two divisons of the octave in phrases five and six as a pair, and phrases seven and thirteen. Phrase five begins with a GD fifth (a fifth-plus-fourth GG octave) and quickly moves through CE and DF thirds, ending on a CF fourth (see Example 4.15). The CE third from phrase five is picked up at the beginning of phrase six and moves to a CG fifth, the other division of the GG octave (fourth-plus-fifth), before returning again to a CF fourth (see Example 4.16). Phrase seven completes the two divisions of the GG octave, but within the context of one phrase rather than two. Almost identical to phrase five, phrase seven begins not with a CE third but

with a GD fifth (see Example 4.17). Like phrase five, the GD fifth (the GDG division) moves to a CE third, but rather than continuing in thirds to DF, the CG fifth is outlined, which completes the second division of the GG octave (GCG).

Phrase thirteen also delineates both the CG and GD fifths (see Example 4.18). Beginning with the opening melodic gesture of the authentic phrase (CEFG), followed by an embellishment of G, phrase thirteen clearly outlines the CG fifth. After filling in the fifth in a descending stepwise figure, the melody moves to a D virga and proceeds to define the GD fifth. By immediately moving back to the CG fifth the phrase concisely evokes both divisions of the GG octave, and priviliges GCG by beginning and ending with the CG fifth.

Though a conflict occurs in "Nunc gaudeant" between GCG and GDG octaves, both the pitch C and the GCG octave govern movement in the piece. The phrases which encircle C with AC and CE thirds prolong C as a central pitch,[12] which contributes to the establishment of the GCG octave division (rather than GDG division) as primary. Phrase thirteen, which summarizes the two divisions, resolves the conflict and succinctly states the primacy of GCG by beginning and ending with that division. Furthermore, the direct motions from one octave division to the other in phrase thirteen, and from one

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[12] Ascribing the same function, Leonard Meyer would refer to these types of phrases as axial, see *Explaining Music: Essays and Exploration* (Chicago: University of Chicago Press, 1973): 185.

third to the other in the final phrase fifteen, occur for the first time in the piece towards, and at, the end of the antiphon respectively.

"O virgo Ecclesia"

Analogous to the octave frames of the C-final pieces, the E-final pieces use the structural frame of a fifth. In contrast, however, to the octaves which act as frames that contain different divisions, the EB fifth is a frame which is embellished structurally from above with an EC sixth, and from below with a DB sixth. "O virtus sapientie" opens with the E-final rising EB gesture establishing the frame immediately, while "O virgo Ecclesia" delays arrival of the EB fifth as a soundspace until towards the end of the antiphon in the ninth of twelve phrases.

Though in "O virgo Ecclesia" the EB frame does not arrive until late in the piece, as a structure it is encircled by EA fourths and EC sixths for the first six phrases, just as E on a more local level (i.e., within phrases, rather than between phrases) is encircled by CF fourths and DF thirds. Both these types of neighbouring motions are exemplified in the first phrase: phrase one begins with a CF fourth that moves through a DF third to E, and then retains E as the bottom of the subsequent EG, EA and EC soundspaces (see Example 4.19). Phrase two, which neighbours E, hints at F but steps from E through DE to CE, and back through DE to E (see Example 4.20).

In phrase three an EA fourth appears as an upper neighbour to two EG thirds locally, but also serves structurally as a lower neighbour to the forthcoming EB fifth (see Example 4.21). Phrases four, five, and six proceed similarly to the first three phrases by embellishing E with CF fourths and DF thirds, and by outlining EA fourths.

Phrase seven, however, is a pivotal phrase in the piece and provides D not as a local neighbour to E nor as an approach to E from C, but as the bottom pitch in an extended series of soundspaces: a DG fourth, DA fifth, and DB sixth (see Example 4.22). The late arrival of B in the piece (in phrase seven) contributes to the structural significance of this pivotal line in the antiphon's text ("O ve callido serpenti!), described earlier in regard to the change of cadential gesture that occurs in the same phrase.[13] Phrase eight in a contour similar to that of phrase seven extends the series from DG, DA, DB, to DD, DA, DF, DG and back to DF before the approach to E and the final melisma in the phrase (Example 4.23).

It is not until phrase nine that the EB fifth is defined as a soundspace. Phrase nine begins by moving from E through a DF third and DG fourth, and arrives on an EG third (Example 4.24). The pitch E, appearing as the usually non-structural

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[13] This appearance of B as a structural pitch is not simply the result of a shift in register: phrases one and five both move higher than B to C and in fact pass through B in descending stepwise motion.

second pitch of a pes, leaps to B giving both pitches structural weight, and outlines the EB fifth which then governs the remainder of the antiphon.[14]

In "O virgo Ecclesia" tension is created by the delayed arrival of the EB fifth. Encircled by structural EA fourths and EC sixths in phrases one through six, B arrives structurally in phrase seven where it appears as part of a DB sixth; it is not until phrase nine that the EB fifth arrives as a soundspace. Immediately it is confirmed by the rising EB gesture which opens phrase ten and serves as a pivot to the upper register of the authentic range which appears for the first time in the tenth of twelve phrases.

"O virtus sapientie"

In contrast to "O virgo Ecclesia", "O virtus sapientie" opens with the E-final rising EB gesture and sustains the soundspace in the first phrase. Though there are certainly many references to the pitch C, B predominates as a structural pitch throughout the piece. However, the shifting which occurs between E and D as the bottom pitches of soundspaces in "O virgo Ecclesia," begins in the second phrase of "O virtus

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[14] Phrase ten confirms the EB fifth soundspace by introducing the phrase with the E-final rising EB gesture, and phrase eleven continues the soundspace by embellishing B. Phrase twelve, referring back to phrase seven, hints at the lower D but with the non-structural pitch of the cephalicus, hence defining an EB fifth (rather than DB sixth). The EB fifth contains an EG third, thus with a reminder of the EC sixth (from phrases one and five), the EG third is retrieved in phrase twelve and descends through DF to rest on E.

sapientie" and continues as a defining feature of the antiphon. This E/D conflict arises between or within many phrases of "O virtus sapientie"; phrases two and three as a pair, and phrases six, seven, nine, and ten clearly enunciate this embellishment of the lower pitch of the EB fifth.

In phrase two the virga D is approached from A in a descending stepwise motion, and then leaps back to G remaining as the lower boundary of a DB sixth soundspace (Example 4.25). Phrase three begins with the B from phrase two and leaps up a third to a virga D suggesting a DD octave (also Example 4.25). However, in a bold example of wordpainting to the text "comprehendendo omnia," D immediately moves to an E, which is thrice repeated, each time with a virga. This strong enunciation of a BE fourth suggests a move from D to E on the bottom making the final soundspace of phrase three an EB fifth rather than DB sixth.

Phrase four, like phrase two, establishes D in a descending stepwise motion from A (Examples 4.26a and b). However, instead of leaping from D, the melody moves to virgas E, F and G before returning to E. An ambiguity between E and D thus arises as two possible readings are suggested: either D remains the bottom pitch of the soundspace until the E sounds which ends the phrase (Example 4.26a) or D immediately gives way to the E virga which follows (Example 4.26b).

Both phrases six and seven offer another ambiguity between E and D. Each opens with a flexus ED which leaps to

a G.[15] Though usually the second pitch of a flexus is less important, here it is given structural weight because the leap that follows the flexus establishes D as the bottom pitch of the soundspace instead of the usually structural first pitch of the flexus (E). In phrase six the D/E conflict continues in the upper register when above B an ED flexus (with E as the structural pitch) follows a DE pes (with D as structural, Example 4.27). Each of the two pitches is further intensified structurally by other musical means: E by its immediate repetition (DE ED) and D because of the leap to G which follows its last iteration. However, the leap from the high G down to E and the subsequent embellishment of B confirms a BE fourth rather than BD third at the end of the phrase, and suggests a return to E (rather than D) as the structural pitch in the soundspace. Though phrase seven begins with the same EDG gesture as phrase six, its continuation is a stepwise ascent to B and stepwise descent to, and embellishment of, E in the lower register; D is established at the opening of the phrase but in a straightforward motion is replaced by E at the end (Example 4.28).

For the first time in the antiphon, phrase nine outlines a DD octave that structurally embellishes the E which ends the antiphon in phrase ten. The penultimate phrase begins with the B from the EB fifth which ends the recapitulatory phrase

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[15] Phrase five avoids the E/D conflict altogether by prolonging B with embellishments (see the transcription in Appendix 2).

eight.[16] In a leap from B to D followed by a stepwise descending motion, which emphasizes A with two flexi on the way down, the melody rests on a D virga to construct a strikingly clear DAD octave (Example 4.29). Though phrase two also ends with D as the bottom pitch of the soundspace, B remains on top, reminding the listener (or singer) that D occurs within the context of an EB frame. In phrase nine however, the EB frame is completely displaced by the DA fifth, which, containing a DF third defined by a flexus, prevails in phrase ten with A as the upper third to the DF that structurally embellishes the final E of the antiphon (Example 4.30).

Though the EB fifth opens "O virtus sapientie" with the rising EB gesture, tensions are created in the antiphon by the immediate shifting which occurs between E and D as the bottom pitch of the prevailing soundspaces. In phrase nine, the tension is heightened by the structural shift to a DAD octave in the penultimate phrase of the antiphon. Though the EB fifth does not return, the DF third contained by the DA fifth serves to embellish the final E of the antiphon.

Newness as a Signal for Closure

In the course of my discussions of the antiphons, I have described situations where new melodic material, or registers, or structural delineations of soundspaces have been presented

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[16] Phrase eight recalls phrase one with the EB rising gesture.

towards the end of individual pieces. Unlike the aesthetic of the common practice period where a return of material often indicates that a composition will soon end, I would argue that the signal for closure in these antiphons is the introduction of new material.[17] To demonstrate the consistency with which these procedures take place I will briefly review their occurrences.

In "O quam mirabilis est" the final phrase provides new melodic material in the evaded cadential gesture that allows for the first culmination of phrases in the authentic and plagal ranges. Similarly, in the C-final "Hodie aperuit" both a new register and new melodic material appear in the penultimate phrase. The melody only once reaches into the authentic register in a neighbour motion to A (phrase four), until phrase eight where the introduction of the "O quam" authentic phrase pushes the antiphon into the upper register (see the transcription in Appendix 2). In "O virtus sapientie," which exploits the E-final authentic register, the last phrase audibly shifts to the plagal range. Reinterpreting the opening line "O virtus sapientie" as "O sapientia," the final phrase dips down to C below the final

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[17] I wrote briefly about newness as a signal for closure in chapter three in regard to "O quam mirabilis est." I would like to thank Professor William Caplin for his comments on the final phrase of "O quam mirabilis est" when I presented an earlier version of chapter three at the Music Graduate Symposium at McGill University in March 1994. He suggested that rather than only focussing on the culmination aspect of phrase 3b, I should consider the implications of bringing in new material at the end of a piece.

and does not rise above A, whereas none of the other phrases descend below D and all of them reach at least C above the final (see the transcription in Appendix 2). Analagous to "O quam mirabilis est" where the new material introduced is used in the context of returning material, in "O virtus sapientie" the new register of the final phrase immediately follows the return of phrase one material in phrase eight.

A change in the structural delineation of soundspaces as a signal for closure also occurs in this group of antiphons. In the C-final "Nunc gaudeant" concise statements appear of both (1) the GD and the CG fifths in phrase thirteen (Example 4.18, and (2) the AC and CE thirds in phrase fifteen (Example 4.14), the final phrase of the antiphon. In the E-final "O virgo Ecclesia" the arrival of the EB frame does not take place until the ninth of twelve phrases (Example 4.24), while in "O virtus sapientie" a DAD soundspace appears in the context of an E-final piece for the first time in the penultimate phrase of the antiphon (Example 4.29). Similarly, in "O quam mirabilis est" a CFC soundspace is established in the penultimate (authentic) phrase 3a, where before only an embellishment of a CGC octave had occured (Example 3.13a).

In summary, each of the five antiphons establishes a conflict between soundspaces early in the piece, which--signalled by new melodic material, registers or structural delineations--becomes resolved by the end of the antiphon.

The conflicts are played out through neighbouring fifths and fourths, alternate divisions of octaves, and embellishments of structural fifths.

CONCLUSION

In current and past scholarship on medieval music, both monophony and polyphony, much analysis has focussed on broad stylistic features of the music in order to categorize, and catalogue, large numbers of pieces in manuscripts according to, for instance, genre or melody types.[1] There is, however, a small group of scholars, such as Sarah Fuller, Daniel Leech-Wilkinson, and Calvin Bower, who have concentrated on individual pieces in an attempt to understand the relationship between musical events within a single work. The difficult question facing this group though is how to approach this music analytically, which is tied up with the sticky question of authenticity: how did musicians and theorists understand this music at the time that it was being composed and sung? Although I have avoided this question in an explicit manner, my methodology has resulted from viewing the notation that came from Hildegard's convent as a determining factor in structural delineation. Hucbald claims similarly that neumatic notation provides more information than simply pitch. He states (as I quoted previously):

> Yet the customary notes [i.e. traditional neumes] are not considered wholly unnecessary, since they are deemed quite serviceable in showing the slowness or speed of the melody, and where the sound demands a tremulous voice, or how the sounds are grouped together or separated from each other, also where a cadence is made upon them, lower

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[1] Both Crocker's article on the St. Denis Antiphonale, and Pfau's dissertation fall under this category.

> or higher, according to the sense of certain letters--things of which these more scientific signs can show nothing whatsoever.[2]

My use of Schenkerian graphic technique, though necessarily unorthodox since as a method it was developed to account for music of the common practice period, provides a tool for exploring, and a language for describing, the registral design of these antiphons. Various aspects of the theories of Hucbald, Hermannus, Guido of Arezzo, and the author of the *Dialogus*, as I have referred to them in the preceding chapters, suggest that considerations of register, range and species of fourths and fifths are relevant to the construction of chant and the identification of modal categories.

A further venue for exploration includes Calvin Bower's labelling of musical elements according to the hierarchical principles of levels of grammatical meaning.[3] Although Bower's approach offers an alternative solution to the problem of describing musical events in relation to each other, his focus on the text (in terms of grammatical units, words and syllables) as a main factor in the articulation of musical divisions is similar to my own. The main difference between our methodologies is that after observing textual delineation, I also examine the notational choices of the composer or

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[2] Hucbald in Babb, p.37.

[3] Bower's grammatical modelling results from a survey of grammatical terminology used in theoretical documents dating from circa 850-1100.

scribe.

As chapter three describes, the notational system in Hildegard's manuscripts offers the composer or scribe many possibilities for the notation of musical figures and events within a melody. As Hucbald makes explicit, neumatic notation gives the composer or scribe the opportunity to make expressive choices that articulate structural features of the music. Discussions of neumatic notation, however, have traditionally focused only on issues of performance practice, especially the discussion of rhythm. In the preceding chapters, I have demonstrated how the notation in Hildegard's manuscripts can be interpreted analytically; the notation itself, in conjunction with textual units, articulates structural goals and delineates musical spaces. The compositional character of Hildegard's antiphons is created both by the tensions and resolutions which result from the manipulation of soundspaces, particularly in the multiple divisions of octaves and the structural embellishment of the fifth above the final, and through the introduction of new material as a signal for closure. It is this contour and movement within the antiphons that captures the essence of Hildegard von Bingen's individual style, a style which the Parisian Magister Odo of Soissons describes when he praises Hildegard for her "novel songs."[4]

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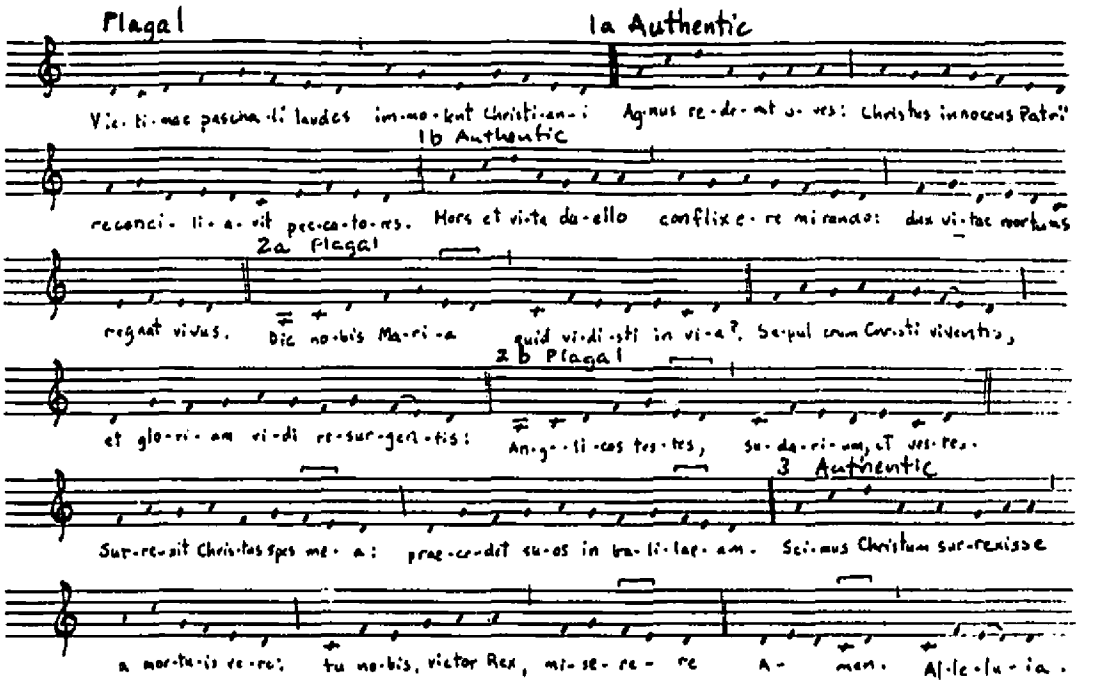
[4] Newman, p.5.

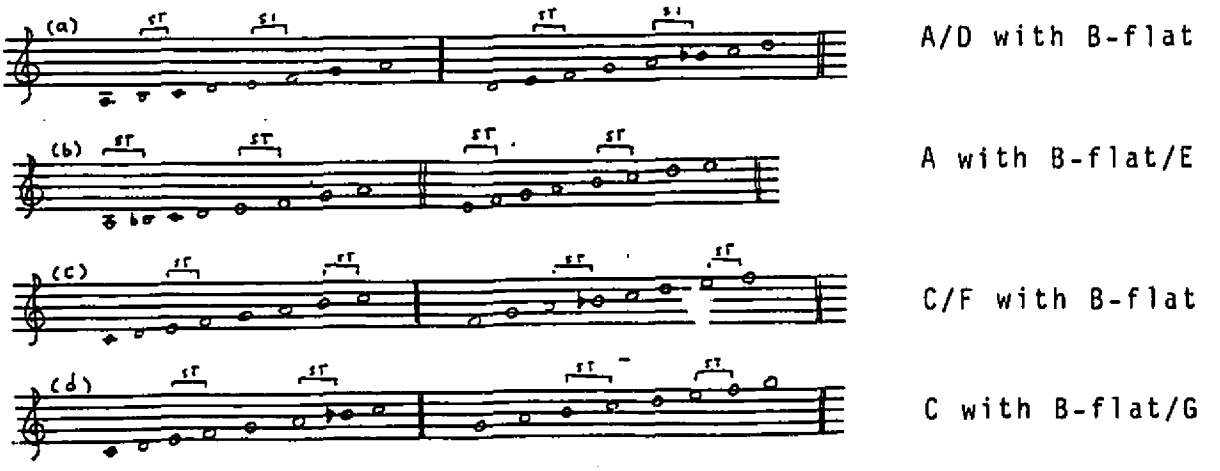
EXAMPLES

EXAMPLES FROM CHAPTER I

Example 1.1 Plagal and Authentic Phrases from the Easter Sequence "Victimae paschali laudes"

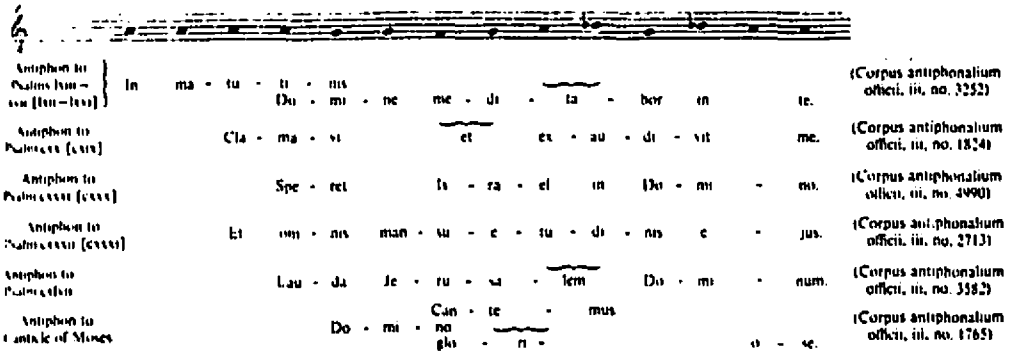


Example 1.2 Relationship Between Modes With and Without B-flat.

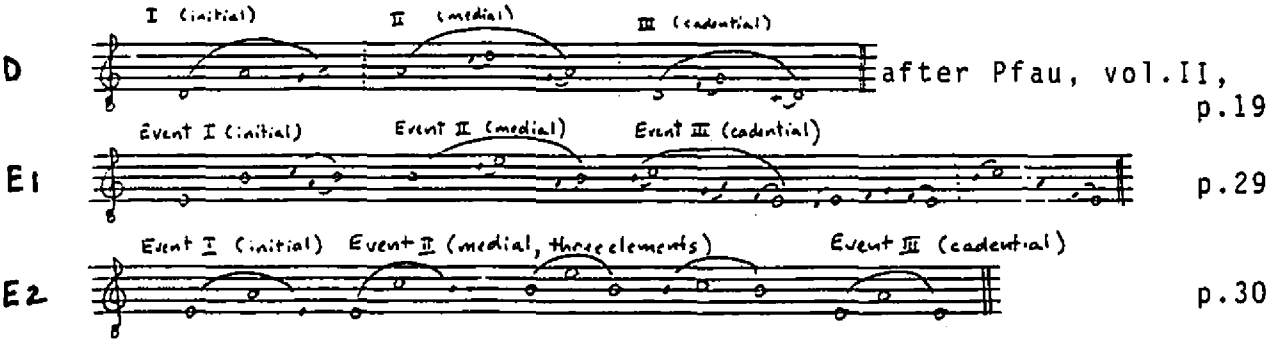


Chapter I examples cont.

Example 1.3 An Example of Huglo's Melody Types (Huglo, p.477)

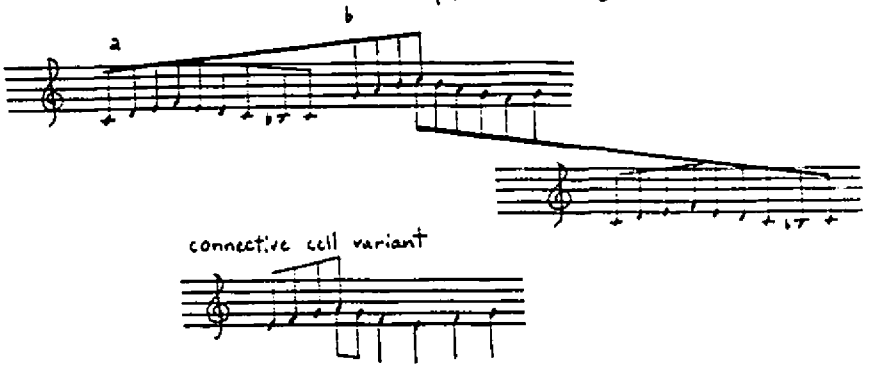


Example 1.4 Pfau's D and E Matrices

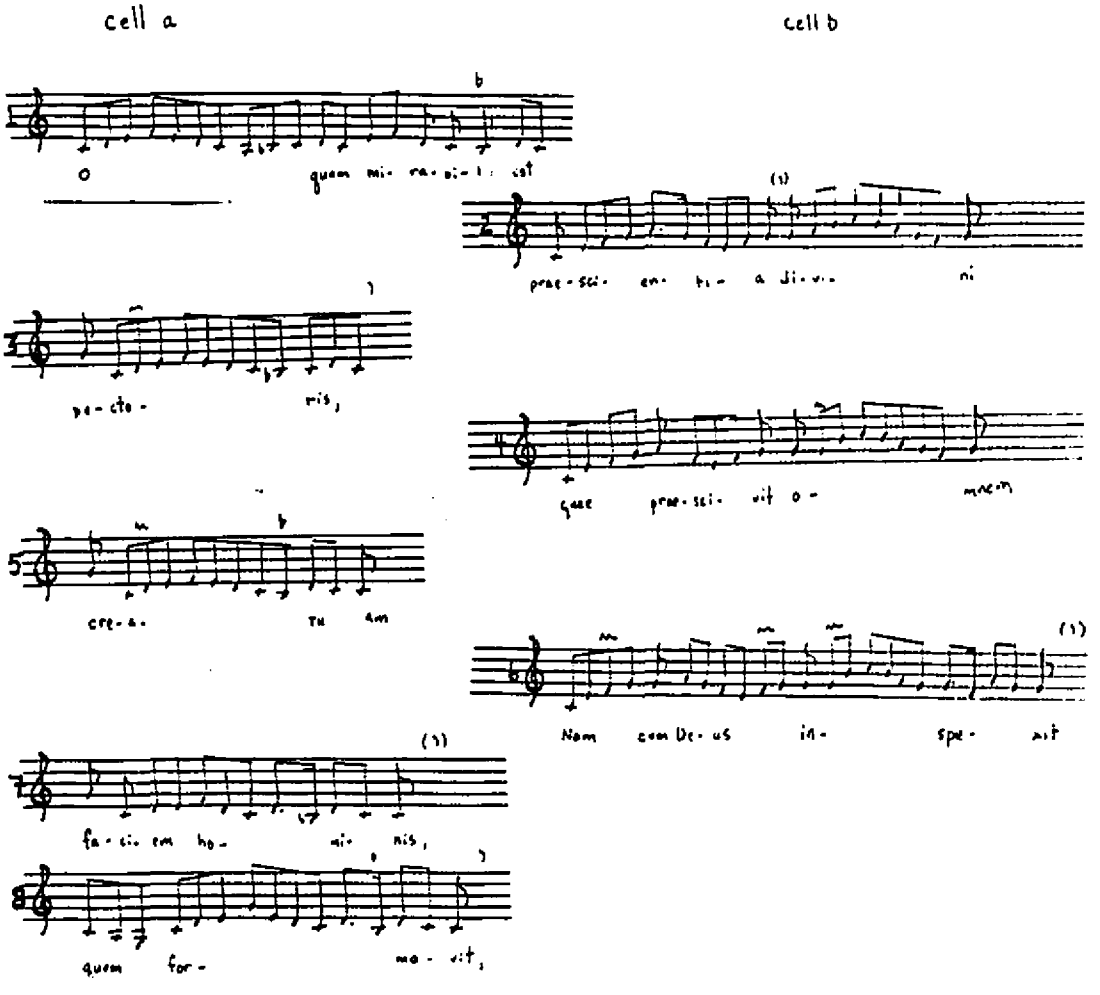


EXAMPLES FROM CHAPTER II

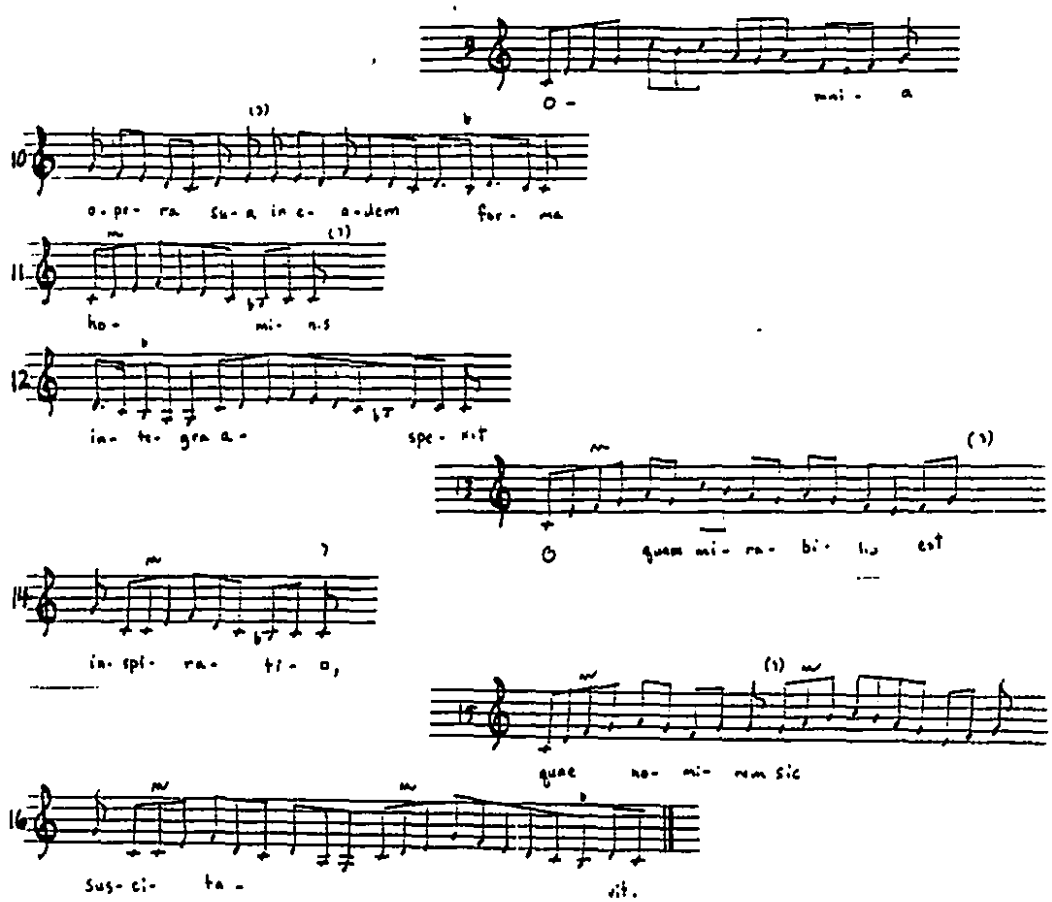
Example 2.1a Cogan's a, b, and connective cells
(after Cogan p.5)



Example 2.1b Cogan's Phrasing and Motivic Dispersement
(after Cogan p.5)

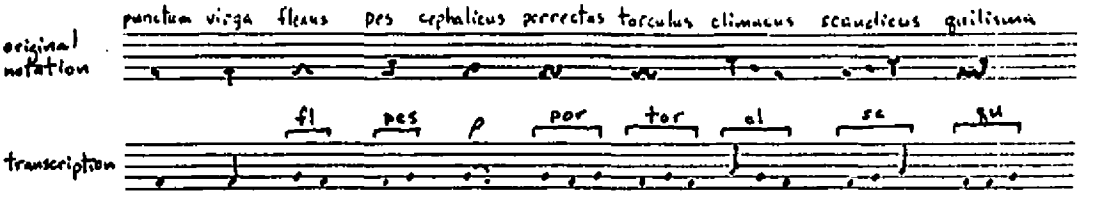


Example 2.1b cont.

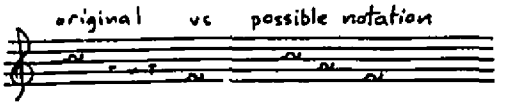


EXAMPLES FROM CHAPTER III

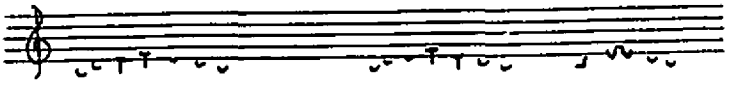
Example 3.1 Neume Types and their Transcription



Example 3.2 Original and Possible Notation of "omnia"

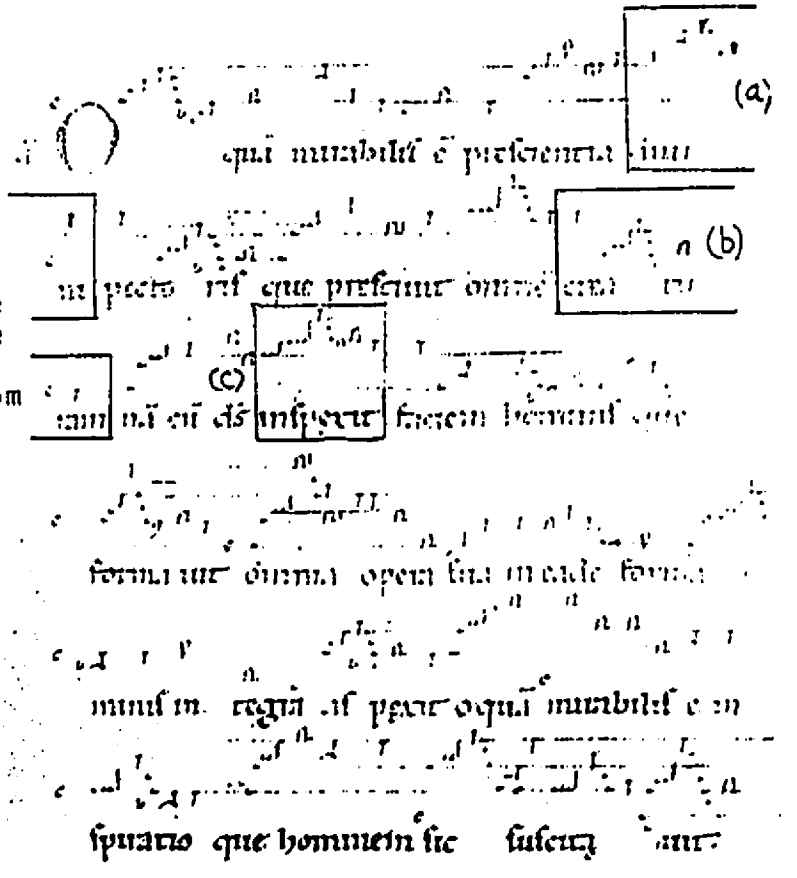


Example 3.3 Original and Possible Notations of "O"



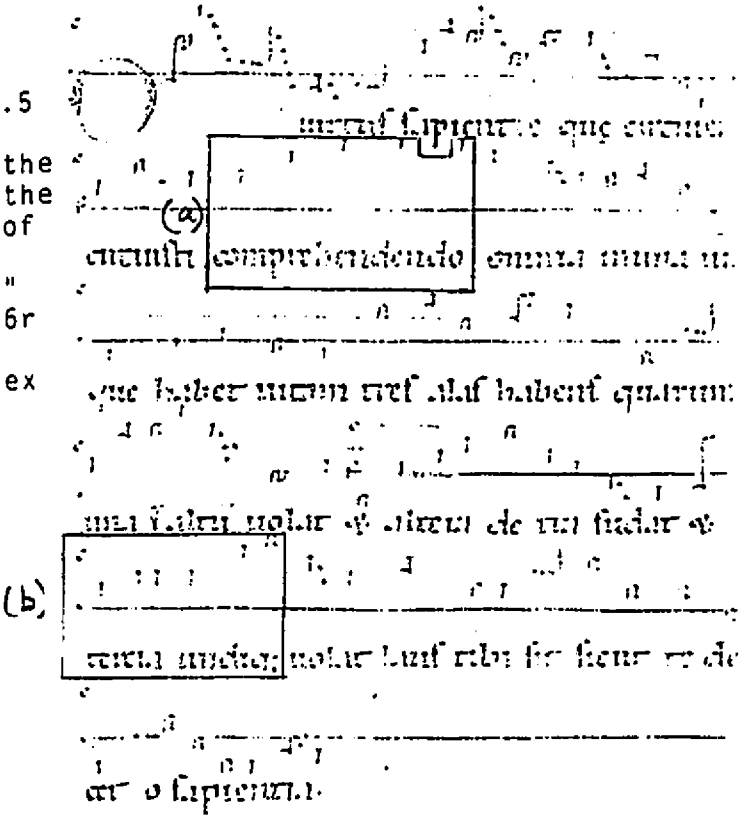
Example 3.4

Usage of the virga in the notation of "O quam" from ff.466r and 466v of the Riesenkodex

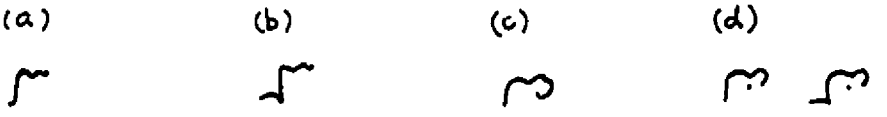


Example 3.5

Usage of the virga in the notation of "O virtus sapientie" from f.466r of the Riesenkodex

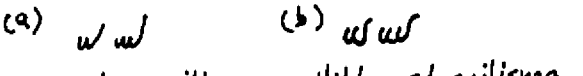


Example 3.6 Five Related Neumes



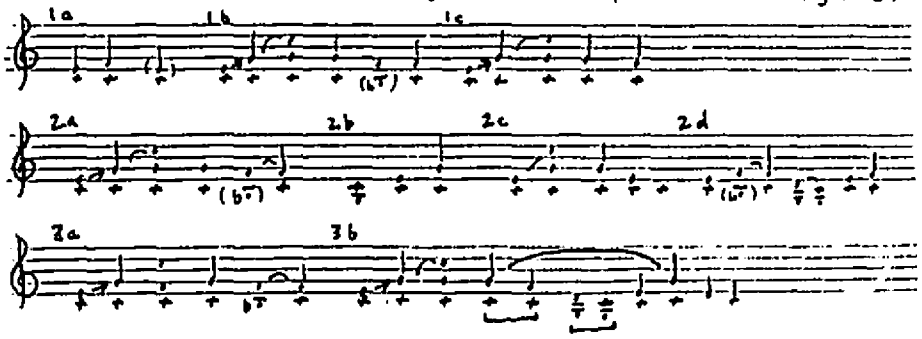
Cardine		pes stratus		pressus
Corbin			pressus	pressus
Fleischer	Gutturalis	Gutturalis		

Example 3.7 Two-loop and Three-loop Quilismas



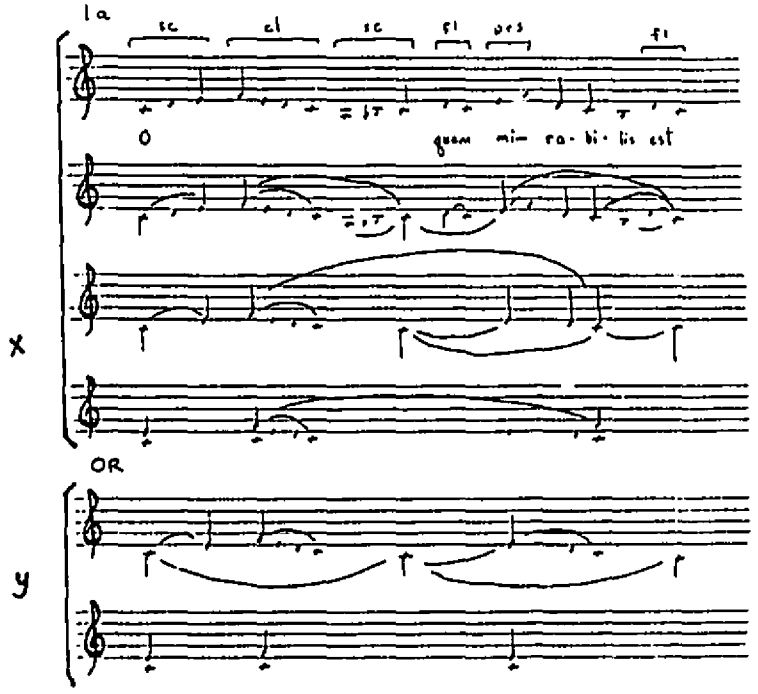
St. Gallen quilisma Hildegard quilisma

Example 3.8 Summary of the Spatial Design of "O quam mirabilis est"

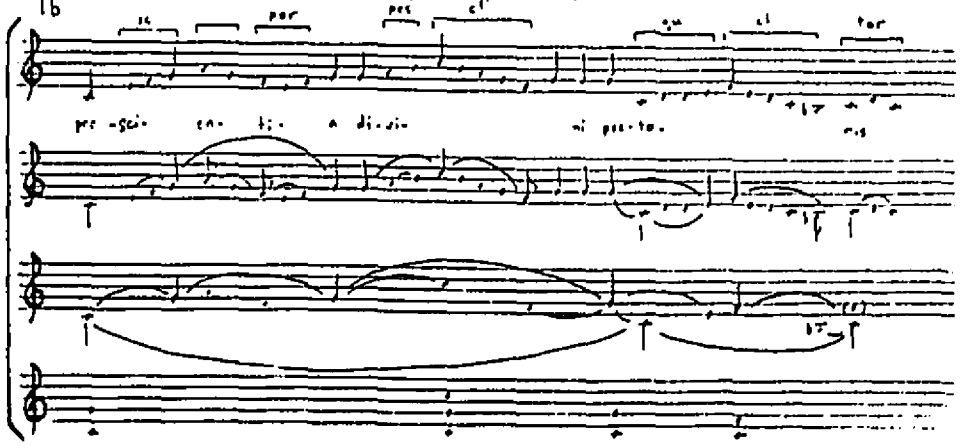


Example 3.9

Alternate Readings of Phrase 1a ("O quam")

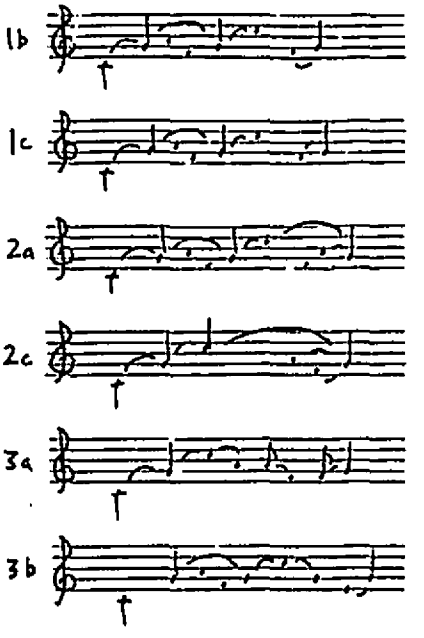


Example 3.10 Phrase 1b ("O quam")

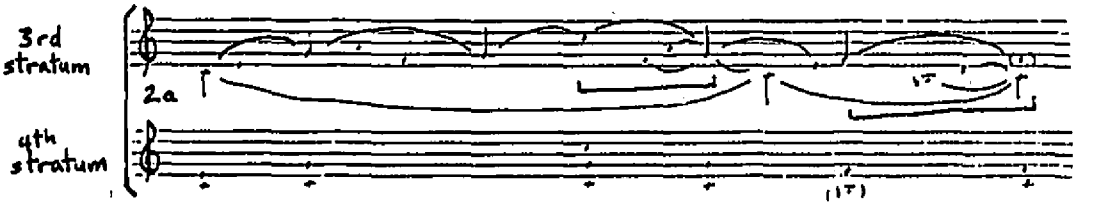


Example 3.11

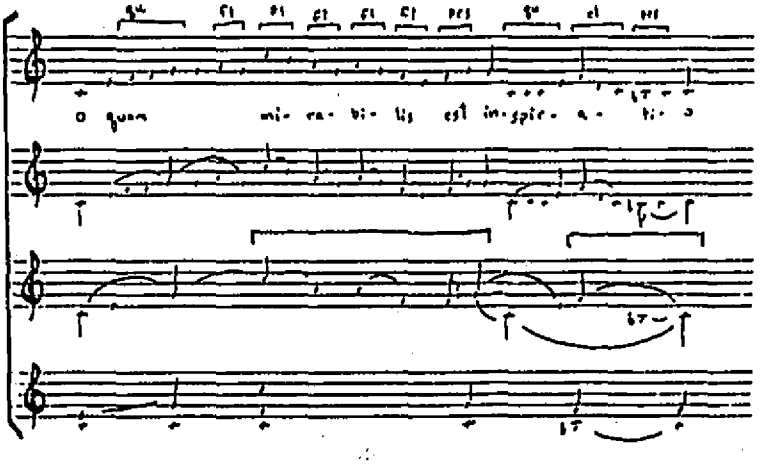
Comparison of the third stratas of the authentic phrases of "O quam"



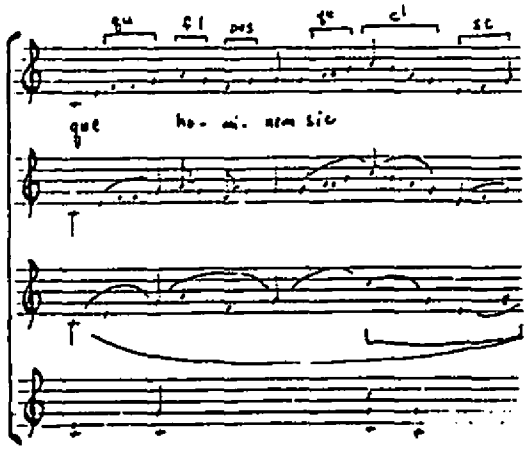
Example 3.12 Phrase 2a ("O quam") with embellished fourth motives bracketed



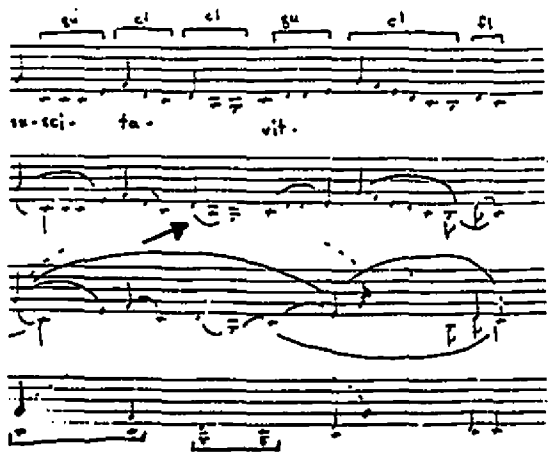
Example 3.13a Phrase 3a ("O quam")



Example 3.13b Beginning of phrase 3b

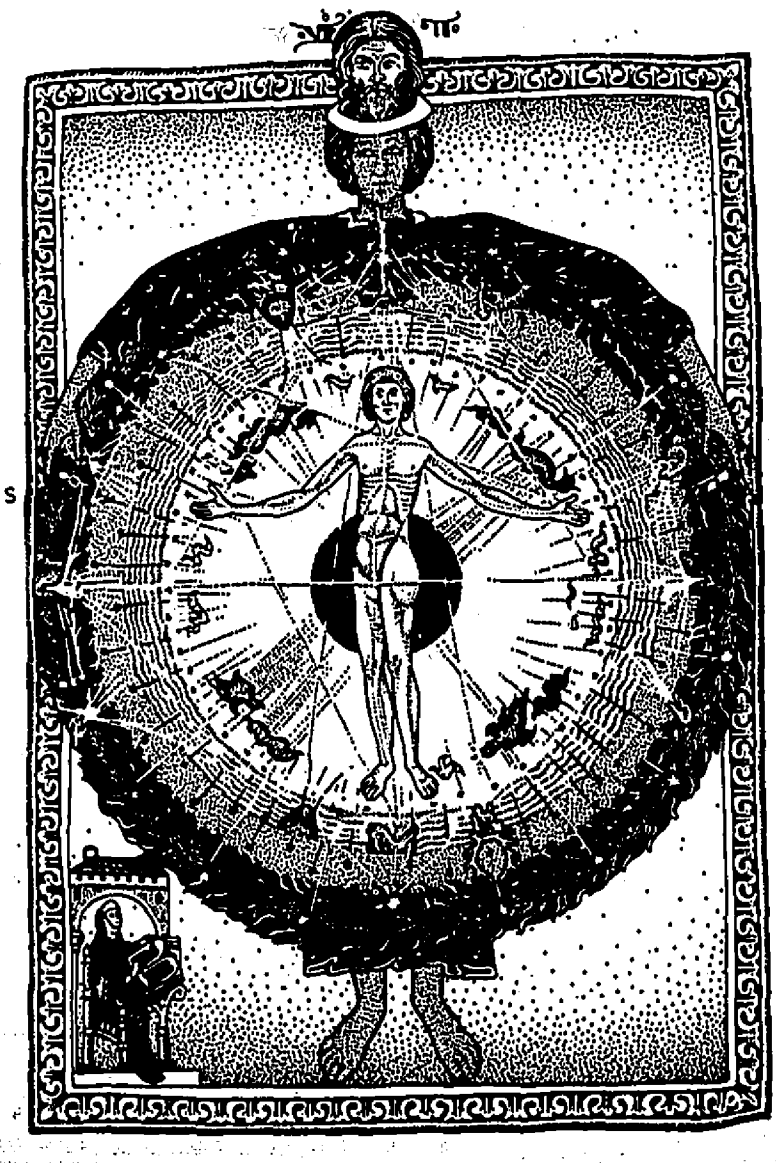


Example 3.13c Continuation of phrase 3b

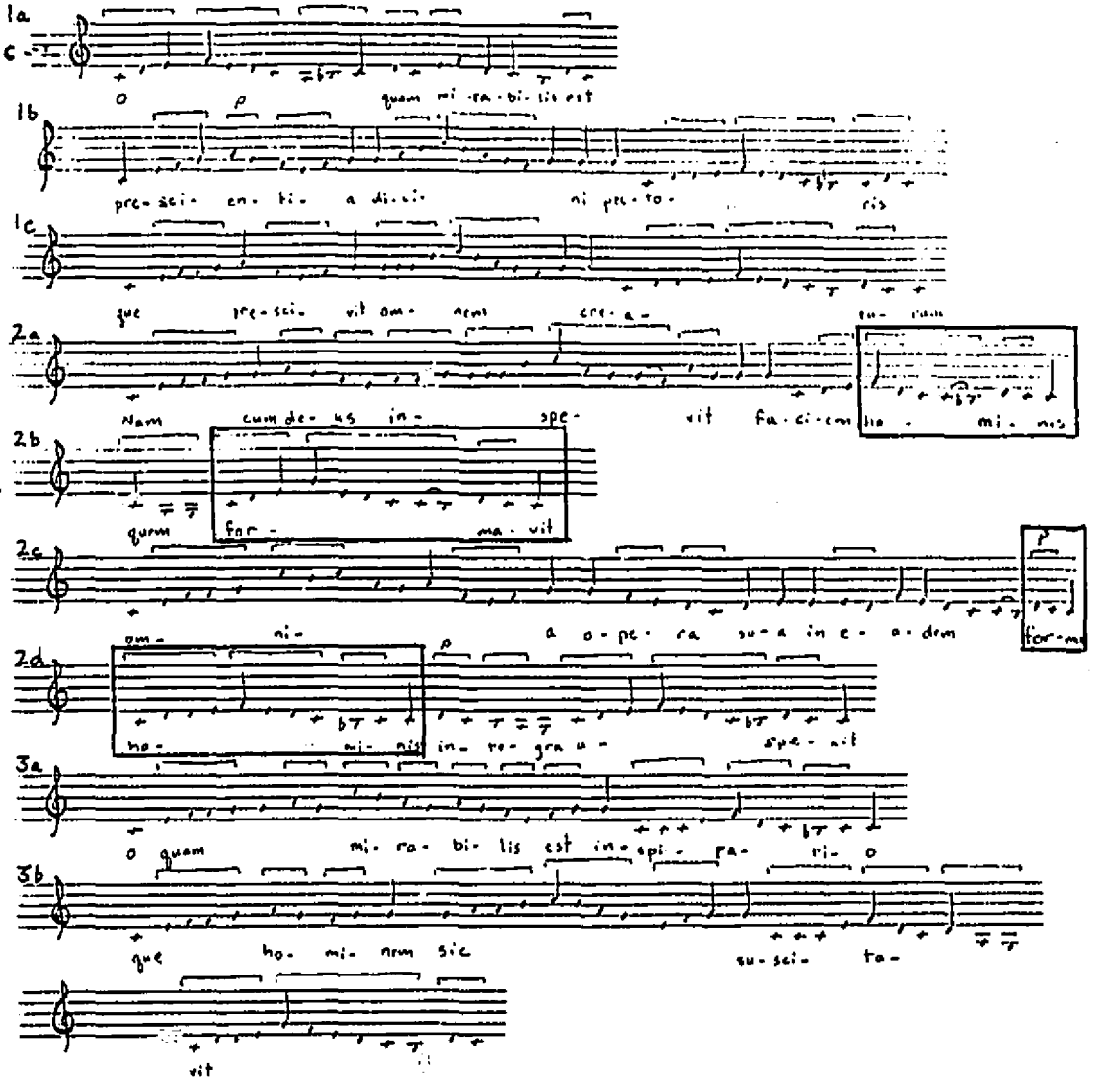


Example 3.14

Illumination which illustrates the second vision of the Book of Divine Works as reproduced in Matthew Fox's translation (Sante Fe, New Mexico: Bear & Dompany, 1987): 23.

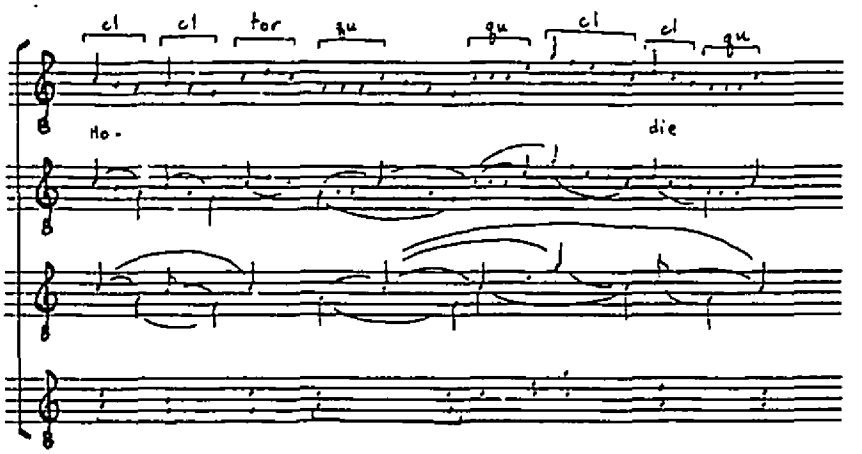


Example 3.15 Reinterpretation of Textual Items in "O quam mirabilis est" (indicated with boxes)



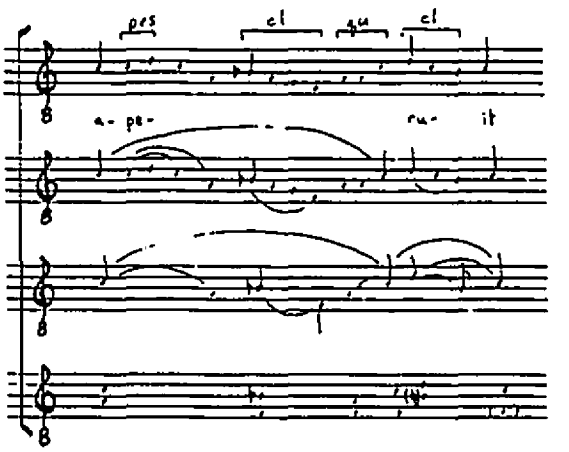
EXAMPLES FROM CHAPTER IV

Example 4.1 Phrase 1 ("Hodie aperuit")

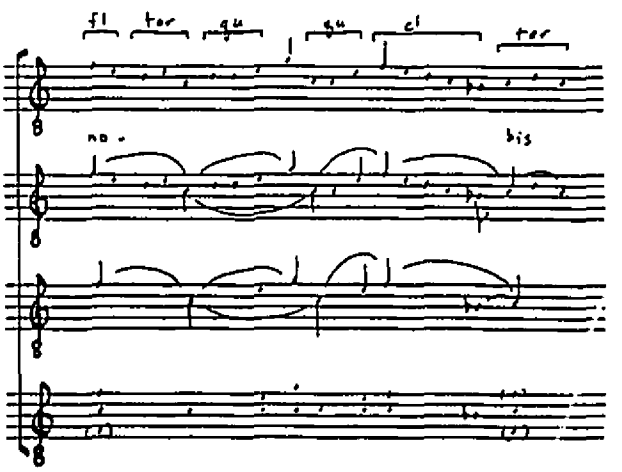


Example 4.2

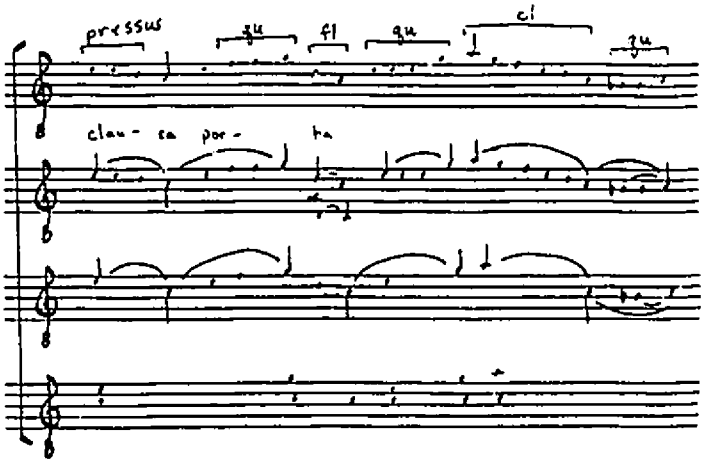
Phrase 2 ("Hodie")



Example 4.3 Phrase 3 ("Hodie")

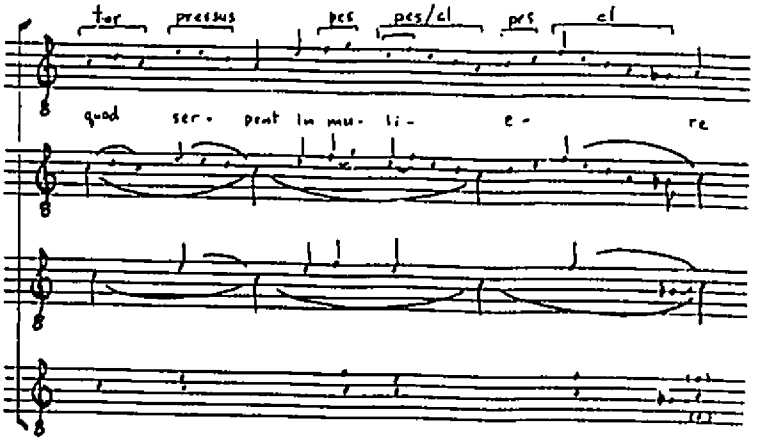


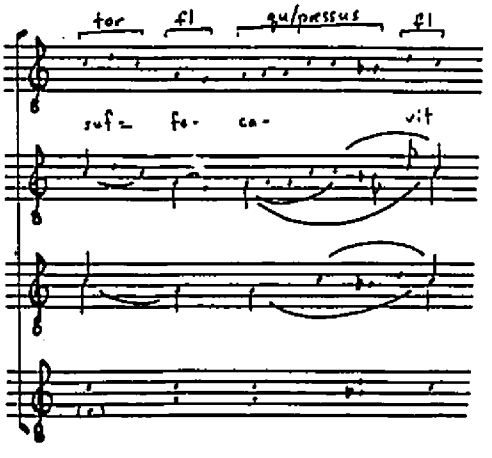
Example 4.4 Phrase 4 ("Hodie")



Example 4.5

Phrase 5 ("Hodie")



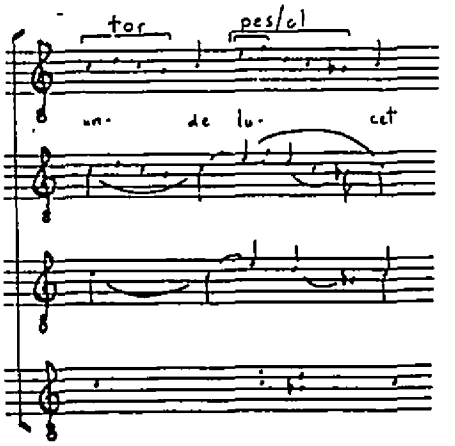


Example 4.6

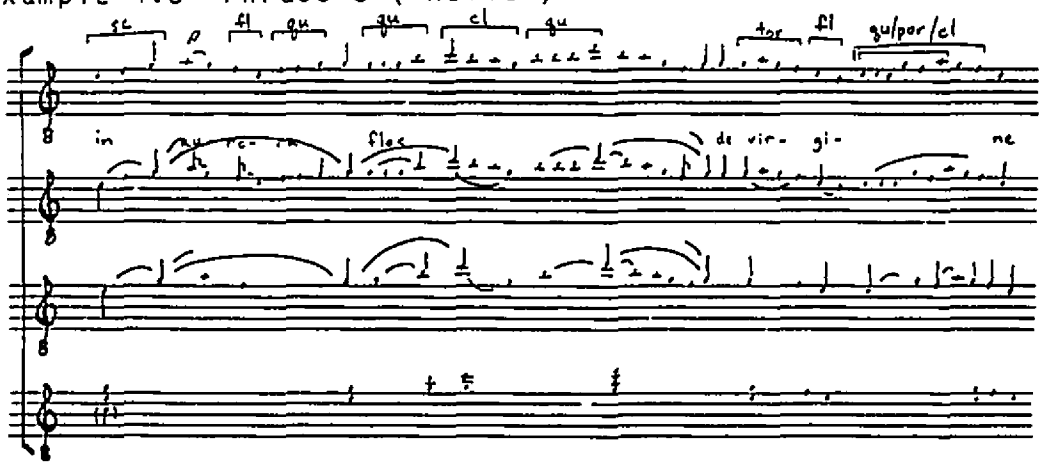
Phrase 6 ("Hodie")

Example 4.7

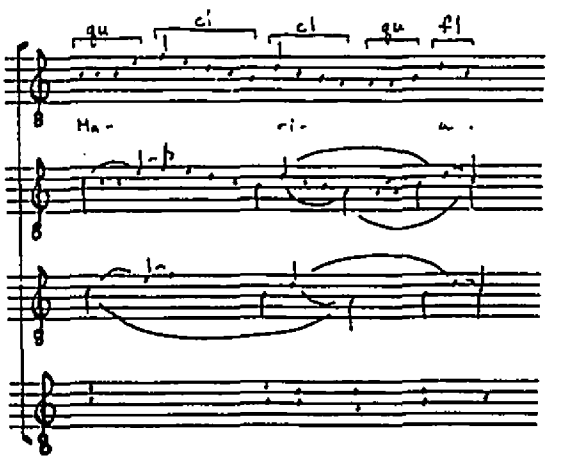
Phrase 7
("Hodie")



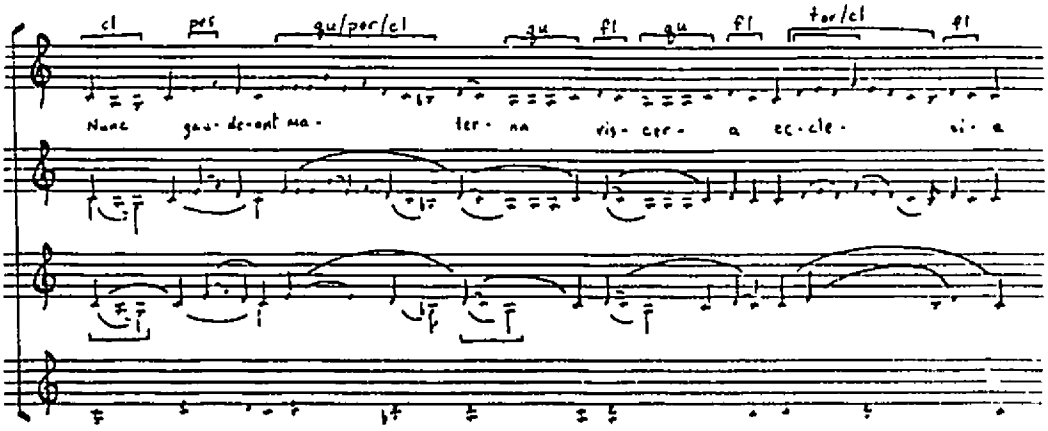
Example 4.8 Phrase 8 ("Hodie")



Example 4.9 Phrase 9 ("Hodie")

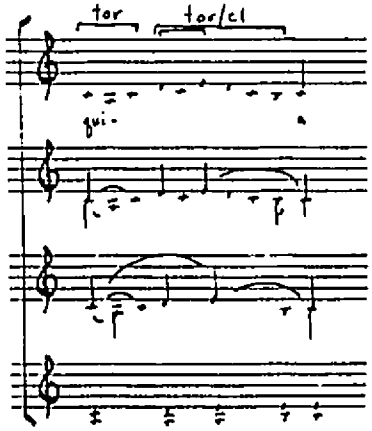


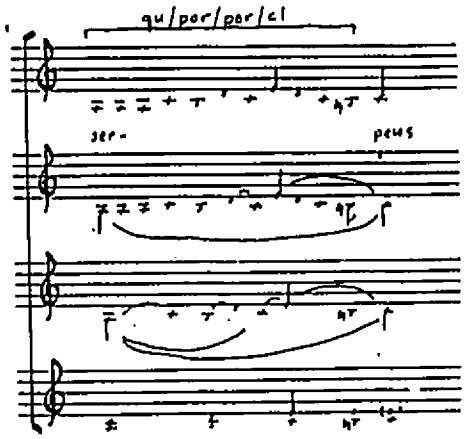
Example 4.10 Phrase 1 ("Nunc gaudeant")



Example 4.11

Phrase 2 ("Nunc gaudeant")



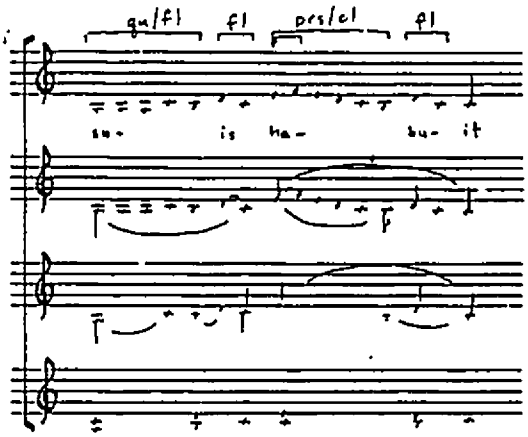


Example 4.12

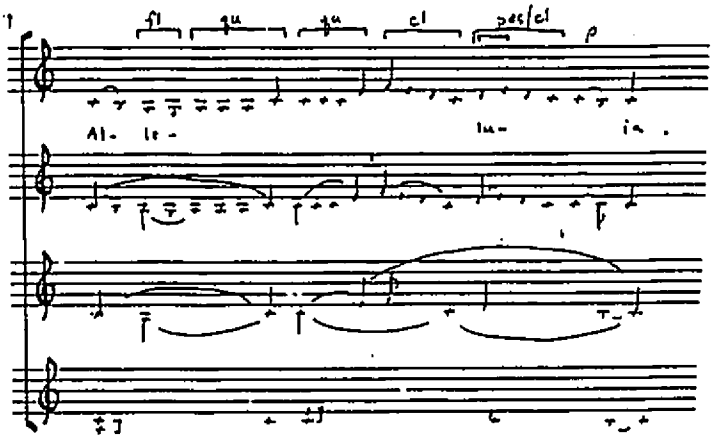
Phrase 9 ("Nunc gaudeant")

Example 4.13

Phrase 12 ("Nunc gaudeant")

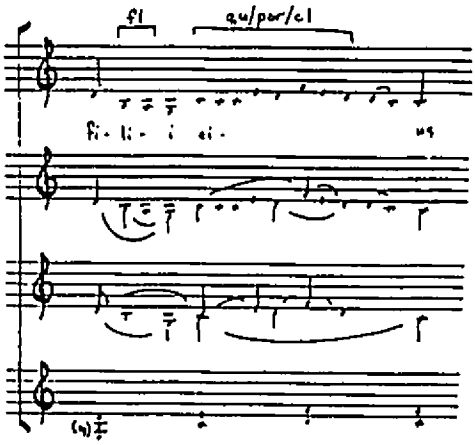


Example 4.14 Phrase 15 ("Nunc gaudeant")

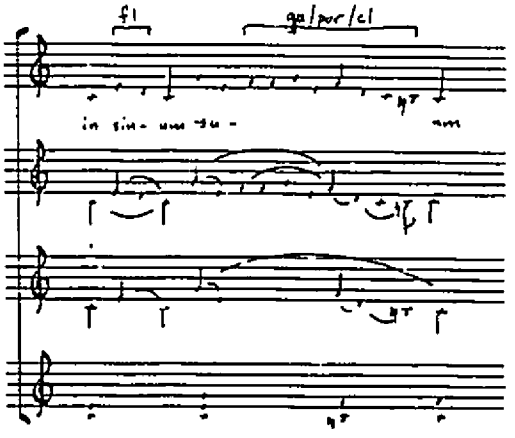


Example 4.15

Phrase 5 ("Nunc gaudeant")

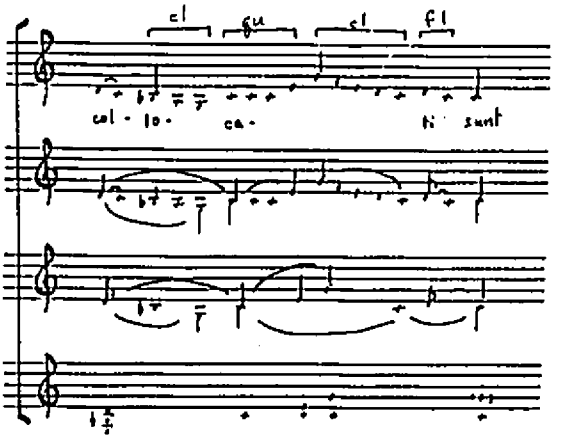


Example 4.16 Phrase 6 ("Nunc gaudeant")

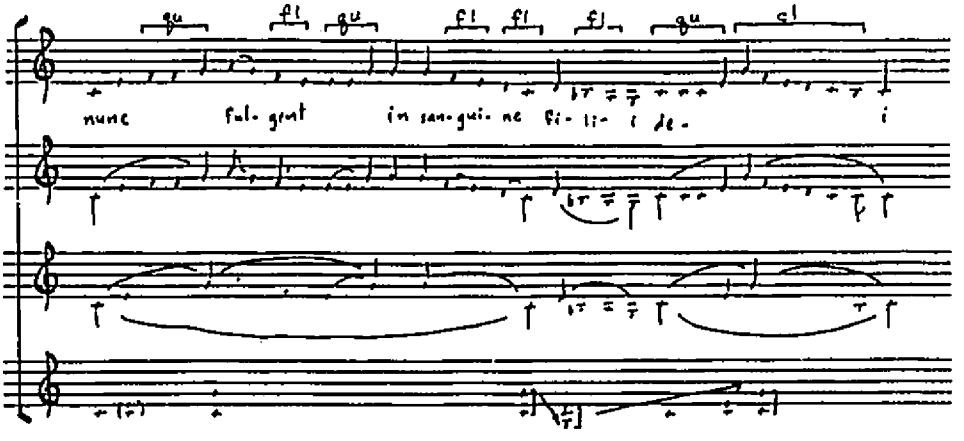


Example 4.17

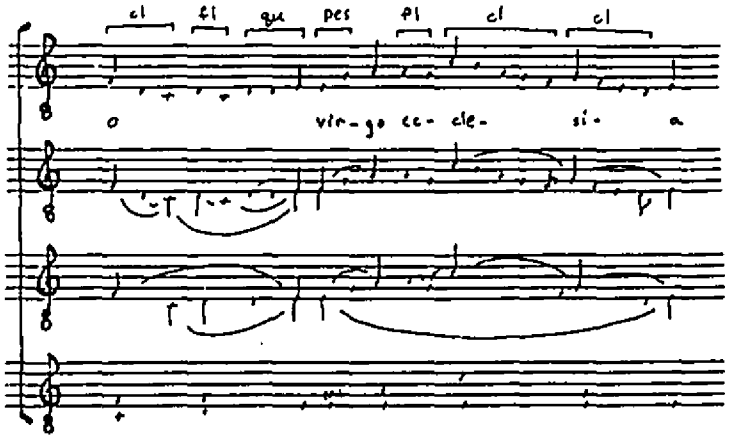
Phrase 7 ("Nunc gaudeant")



Example 4.18 Phrase 13 ("Nunc gaudeant")

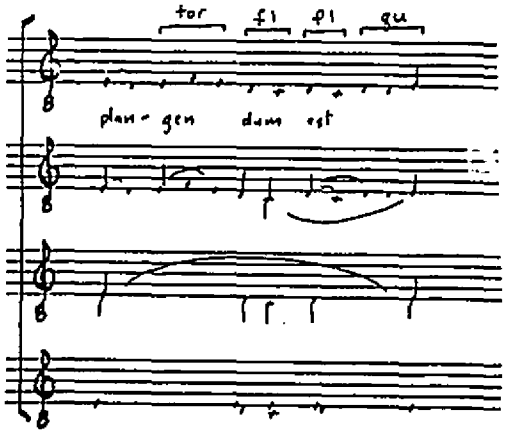


Example 4.19 Phrase 1 ("O virgo ecclesia")

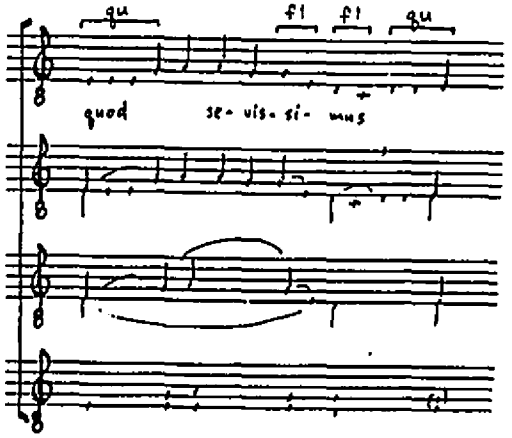


Example 4.20

Phrase 2 ("O virgo")

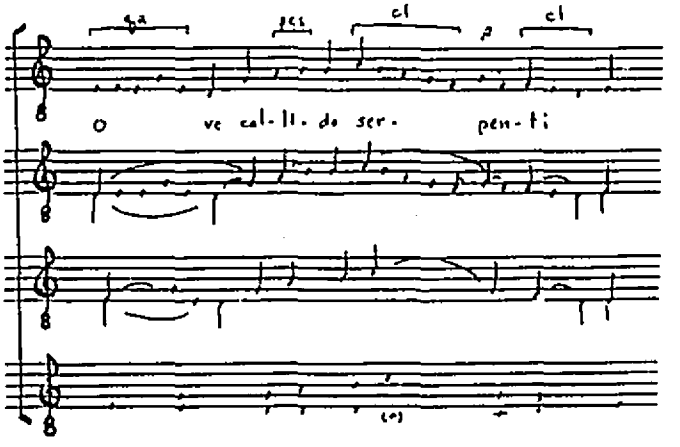


Example 4.21 Phrase 3 ("O virgo")

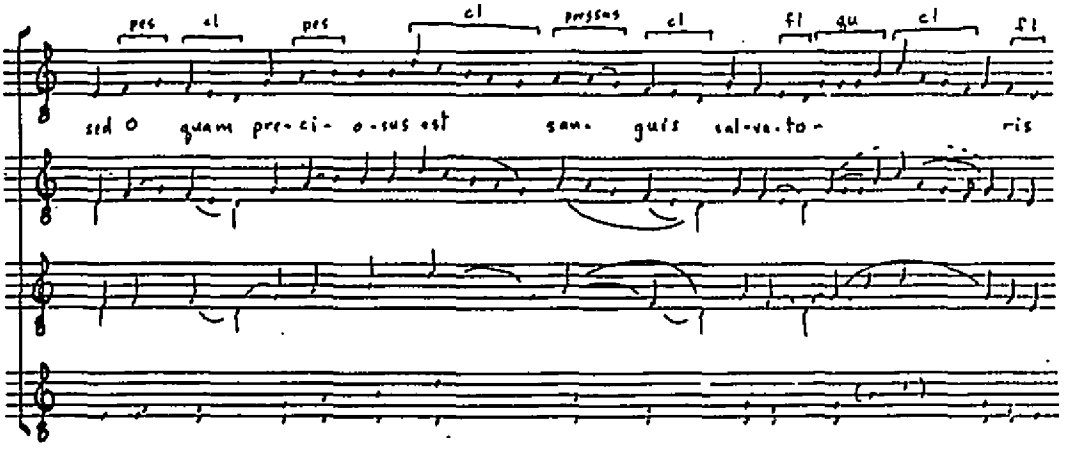


Example 4.22

Phrase 7
("O virgo")

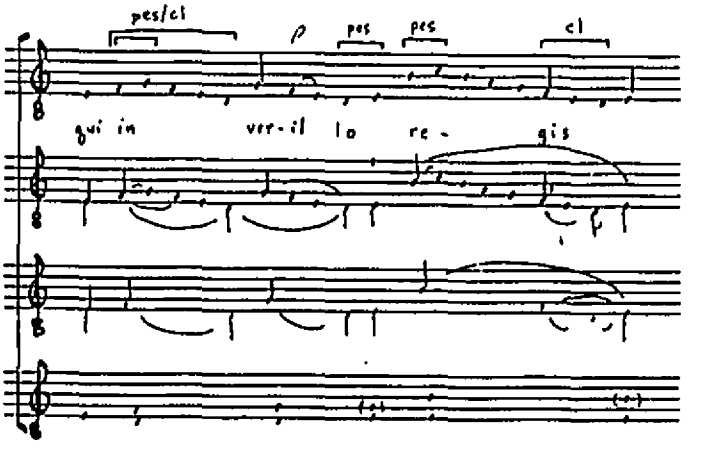


Example 4.23 Phrase 8 ("O virgo")

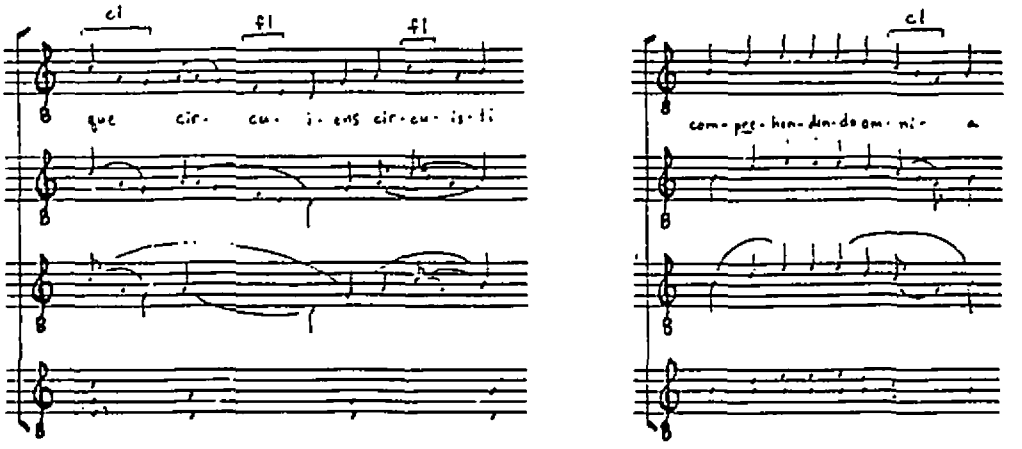


Example 4.24

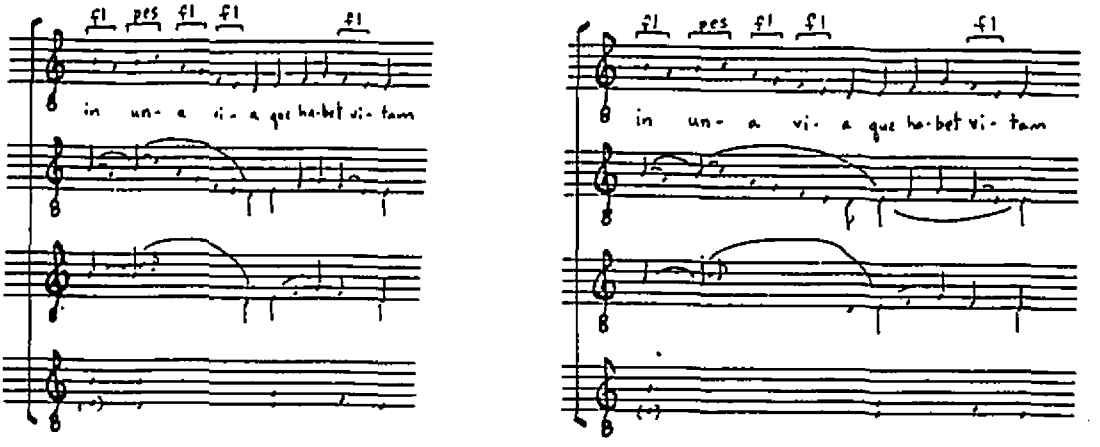
Phrase 9
("O virgo")



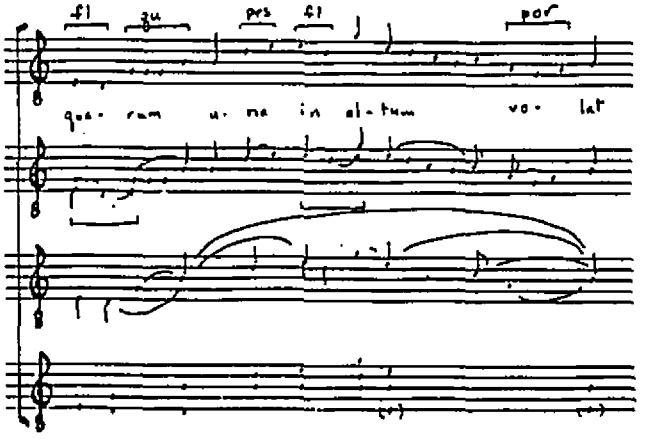
Example 4.25 Phrases 2 and 3 ("O virtus sapientie")



Example 4.26 Alternate Readings of Phrase 4 ("O virtus")
(a) D as bottom of space (b) E as bottom of space

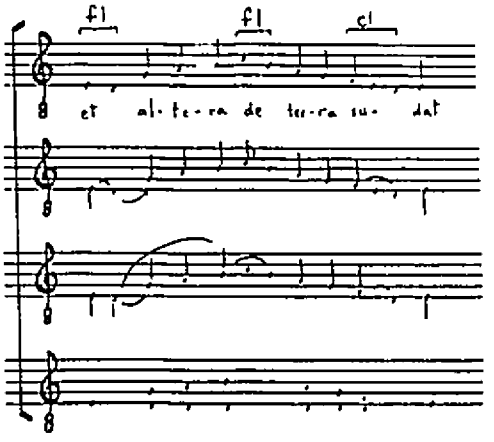


Example 4.27 Phrase 6 ("O virtus")



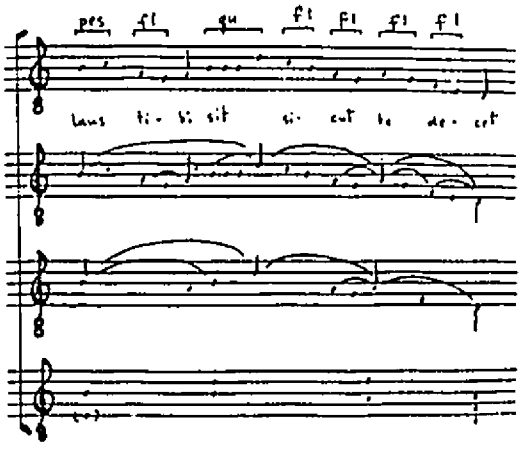
Example 4.28

Phrase 7
("O virtus")



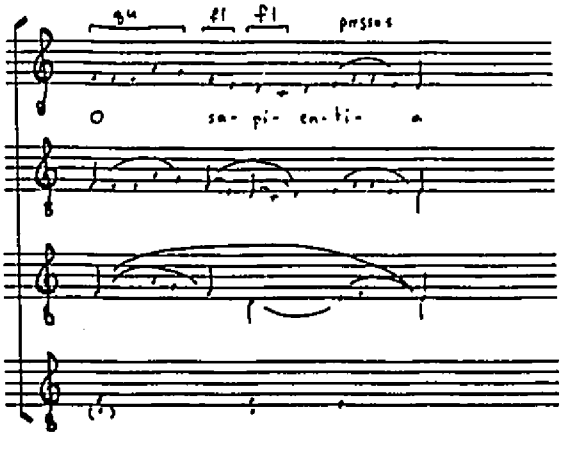
Example 4.29

Phrase 9 ("O virtus")



Example 4.30

Phrase 10
("O virtus")



APPENDICES

APPENDIX 1

Antiphon List by Type - Numbering and Classification of Psalm or Votive According to Newman

1. ANTIPHON

1.1 Psalm Antiphons

1.1.1 General
#6 O magne Pater D,* R+
#7 O eterne Deus D, R
#25 Karitas habundat D,R

1.1.2 Psalm Antiphons for the Virgin
#10 O splendidissima gemma D,R
#11 Hodie aperuit D,R
#12 Quia ergo femina D,R
#13 Cum processit factura D,R
#14 Cum erbuerint D,R
#15 O frondens virga D,R
#16 O quam magnum miraculum D,R

1.1.3 Psalm Antiphon for the Holy Spirit
#24 Spiritus sanctus vivificans vita D,R

1.1.4 Psalm Antiphon for Apostles
#33 O cohors milicie floris D,R

1.1.5 Psalm Antiphon for St.John the Evangelist
#35 O speculum columbe D,R

1.1.6 Psalm Antiphon for Martyrs
#37 O victoriosissimi triumphatores D,R

1.1.7 Psalm Antiphon for Confessors
#40 O successores D,R

1.1.8 Psalm Antiphons for Saint Disibod
#41 O mirum admirandum D,R
#44 O beata infantia R

1.1.9 Psalm Antiphons for Saint Rupert
#46 O felix apparicio D,R
#47 O beatissime Ruperte D,R
#48 Quia felix puericia R

1.1.10 Psalm Antiphon for Virgins
#55 O pulcre facies D,R

* D=Dendermonde Codex + R=Riesenbergkodex

1.1.11 Psalm Antiphons for the 11,000 Virgins
#63 In matutinis laudibus D,R

1.2 Votive Antiphons

1.2.1 General
#2 O virtus Sapientie R
#3 O quam mirabilis R
#4 O pastor animarum R
#5 O cruor sanguinis R
#23 O tu illustrata R
#26 Laus Tinitati D

1.2.2 Votive Antiphon for Angels
#29 O gloriosissimi lux vivens angeli D,R

1.2.3 Votive Antiphon for Patriarchs and Prophets
#31 O spectabiles viri D,R

1.2.4 Votive Antiphon for Saint Boniface
#51 O Bonifaci R

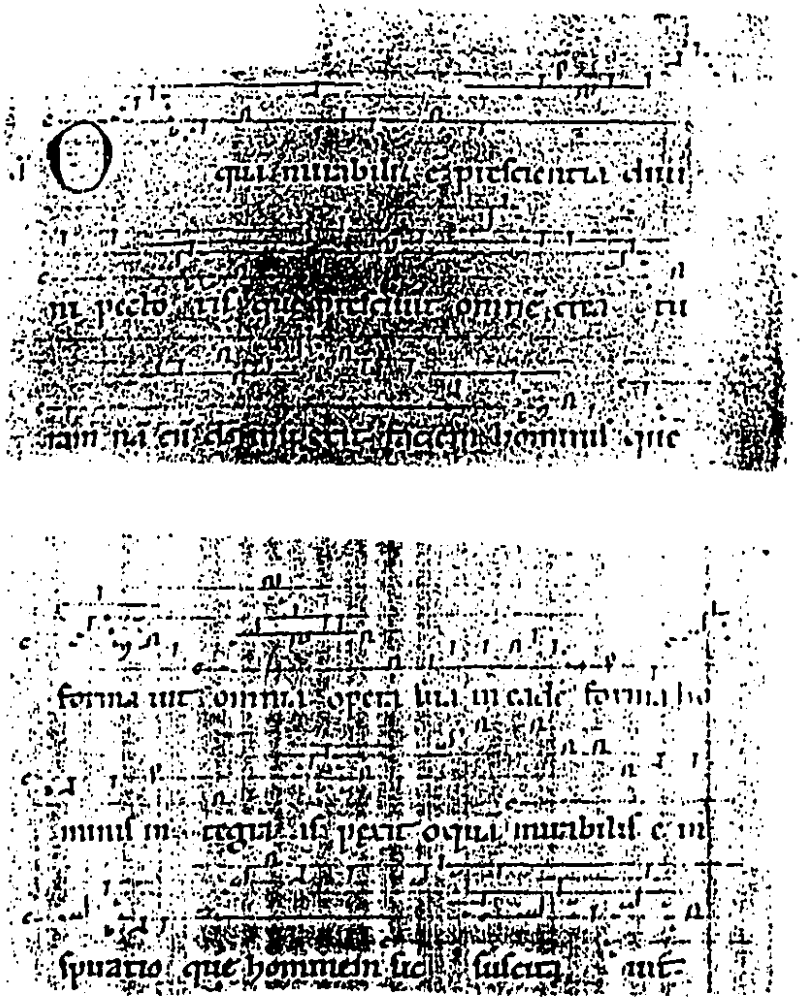
1.2.5 Votive Antiphons for the Dedication of a Church
#66 O virgo Ecclesia D,R
#67 Nunc gaudeant D,R
#68 O orzchis Ecclesia R
#69 O choruscans lux stellarum R (unlabeled in MS)

1.3 Gospel Antiphons

1.3.1 Gospel Antiphon for the 11,000 Virgins
#61 O rubor sanguinis D,R

APPENDIX 2

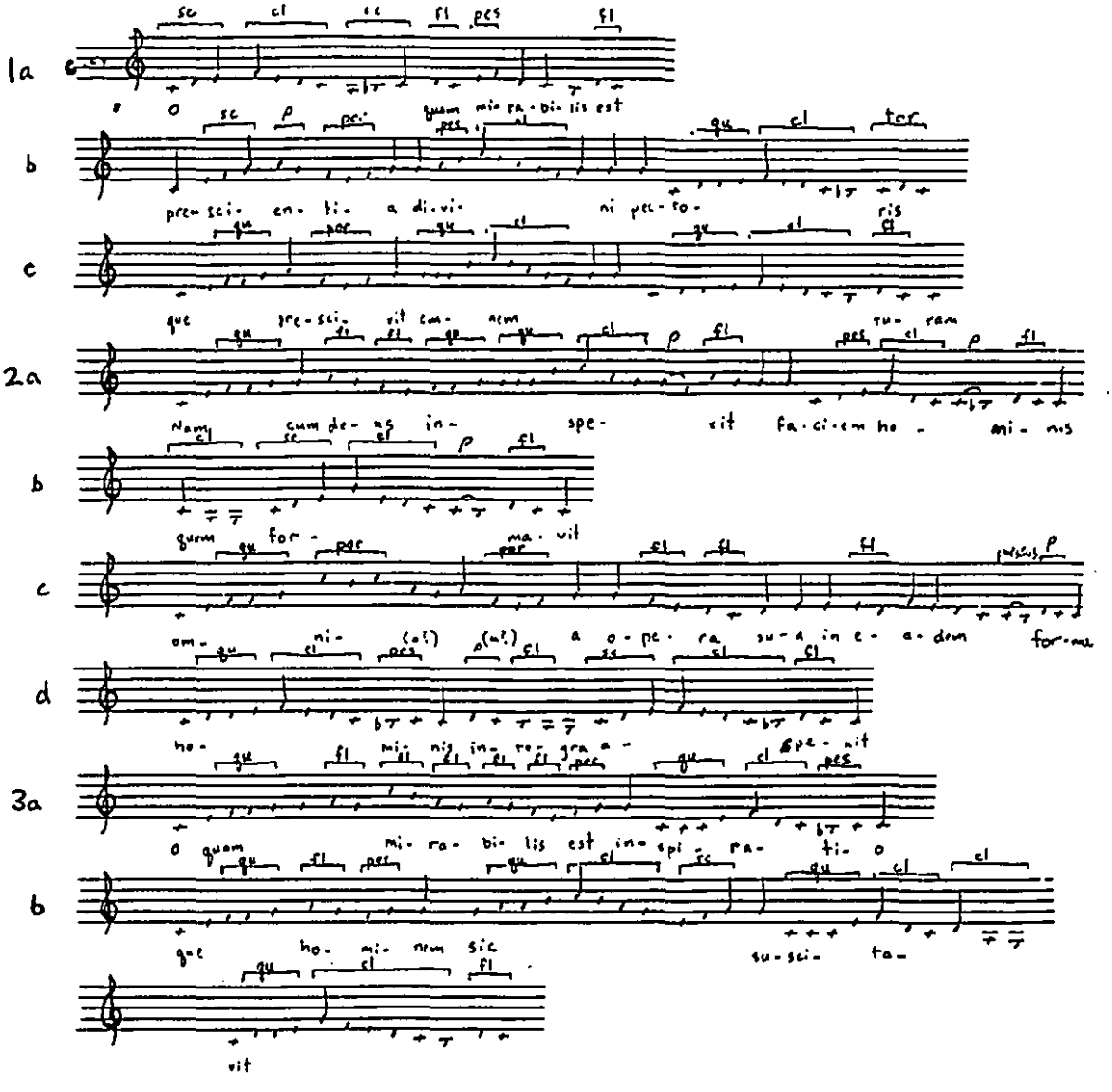
"O quam mirabilis est"



from ff.466r and 466v of the Riesenkodex

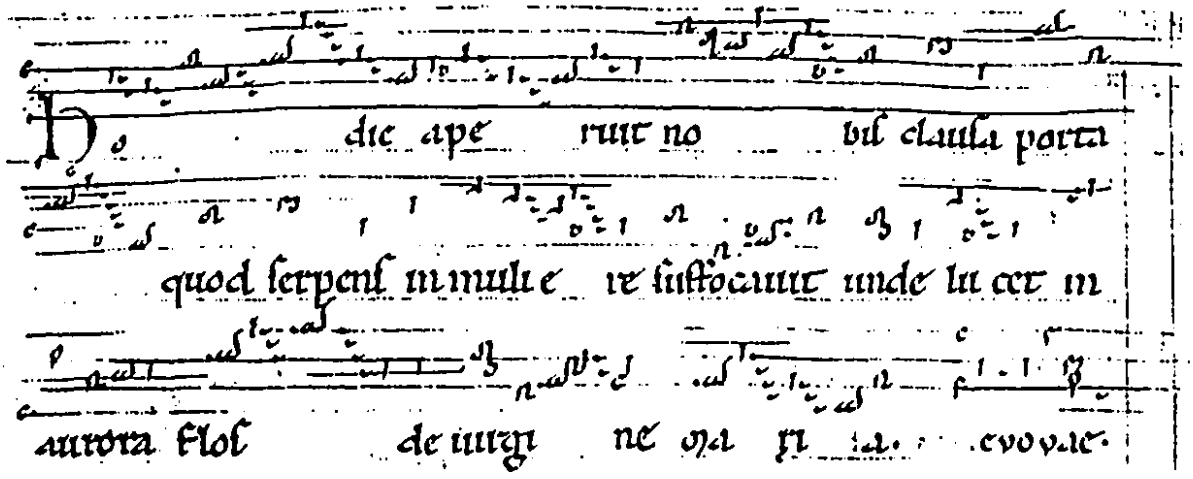
Appendix 2 cont.

Transcription of "O quam mirabilis est"



Appendix 2 cont.

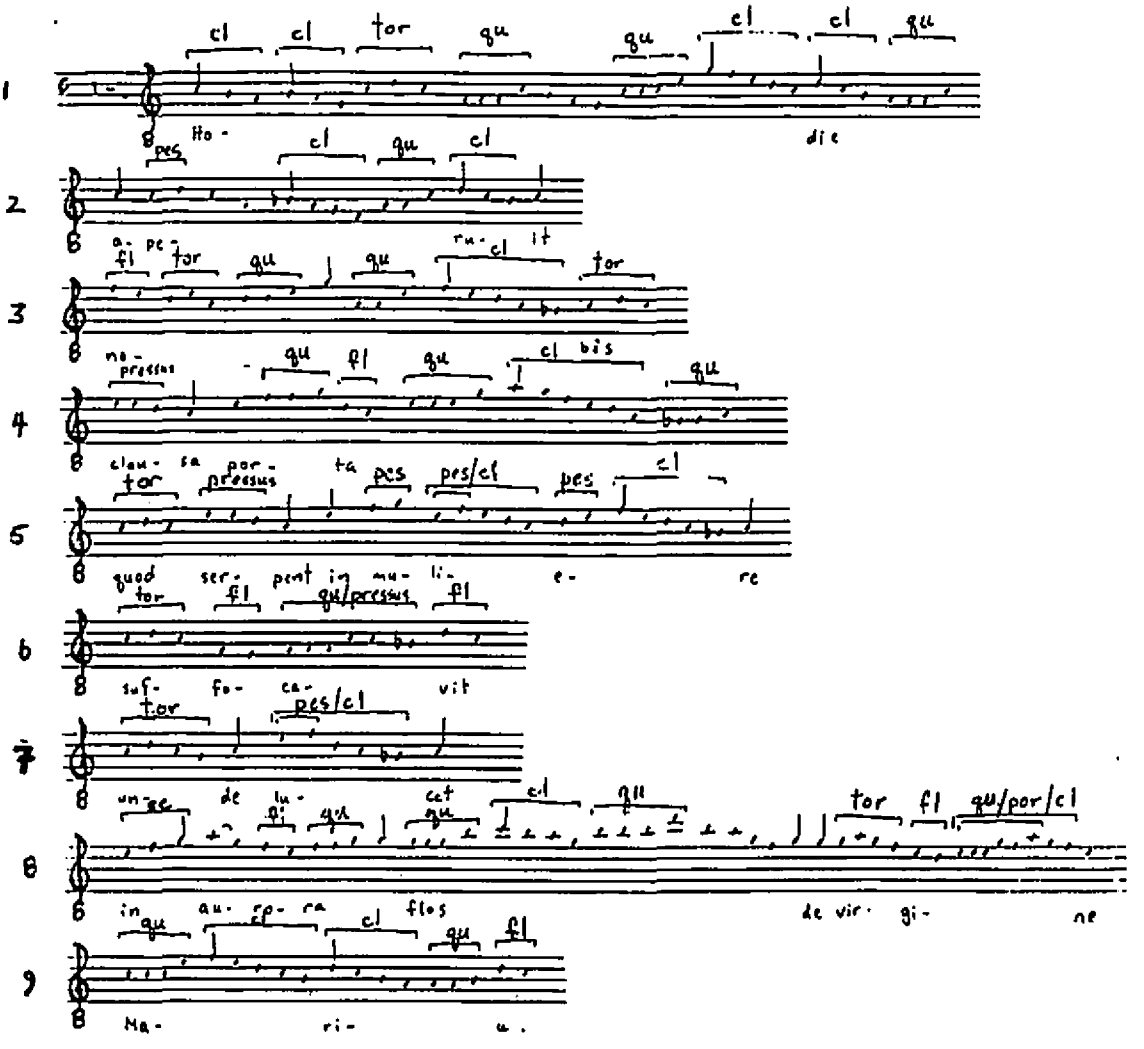
"Hodie aperuit"



from f.154v of the Dendermonde Codex

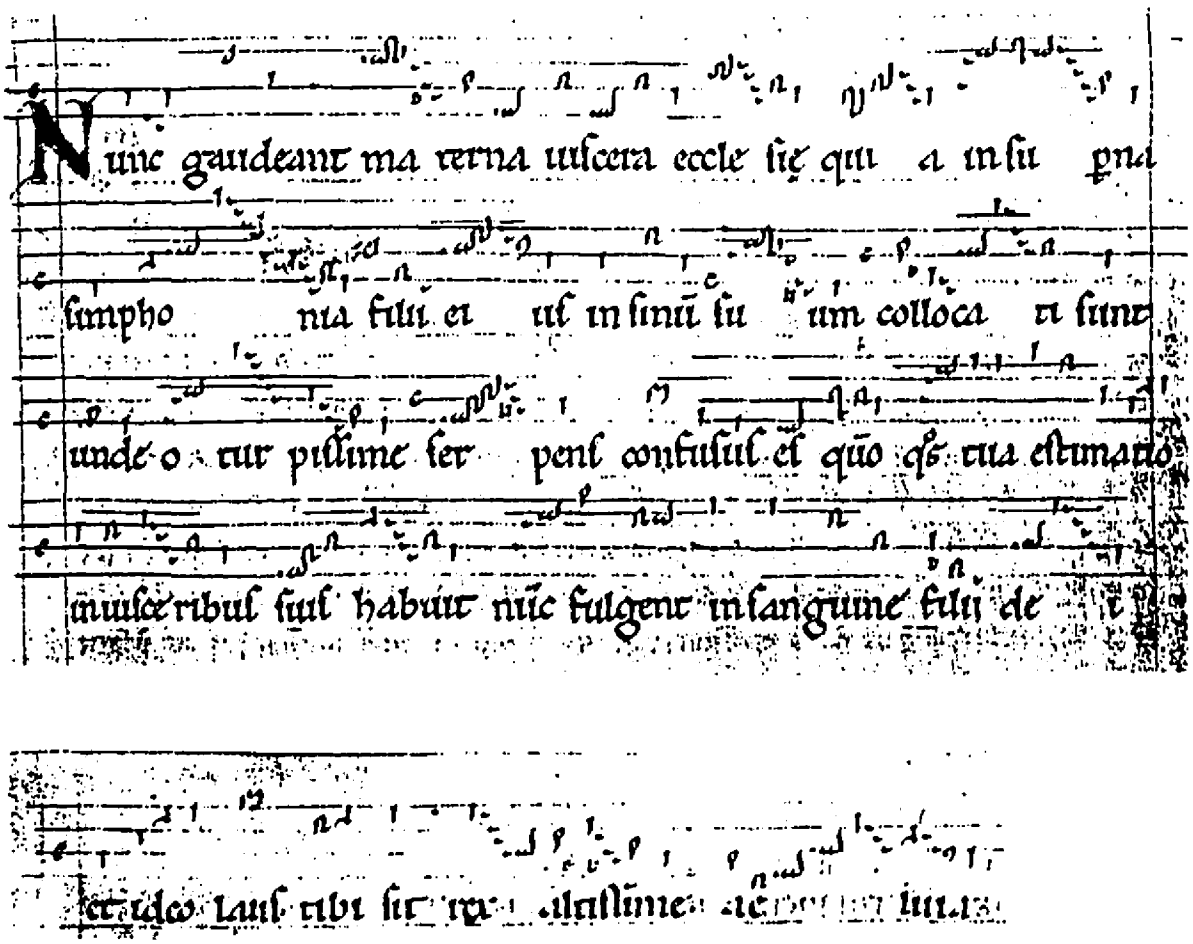
Appendix 2 cont.

Transcription of "Hodie aperuit"



Appendix 2 cont.

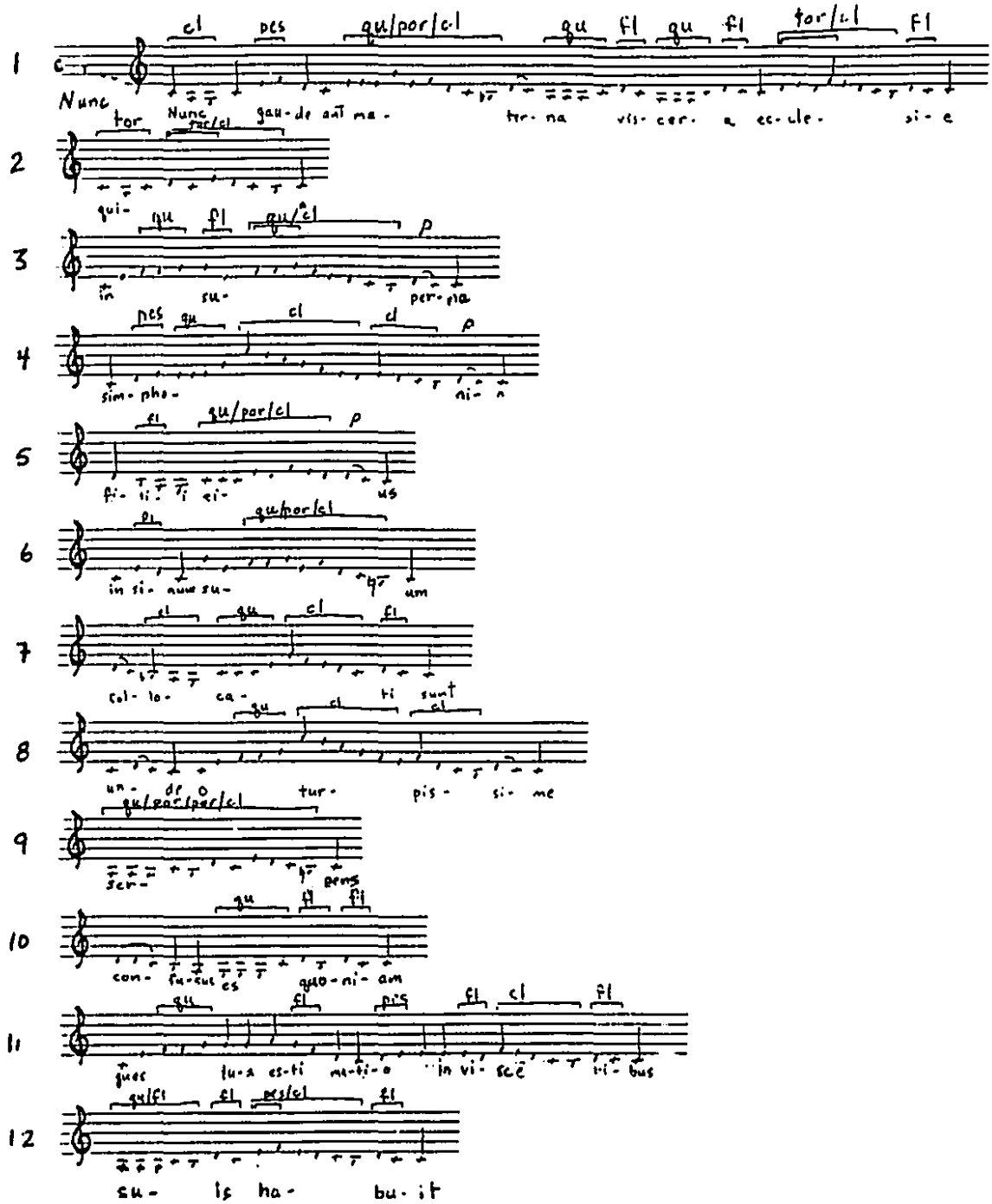
"Nunc gaudeant"



from ff.170r and 170v of the Dendermonde Codex

Appendix 2 cont.

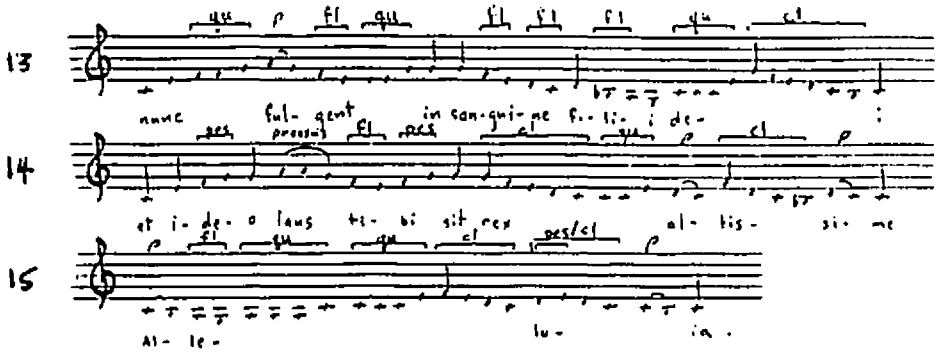
Transcription of "Nunc gaudeant"



continued on following page

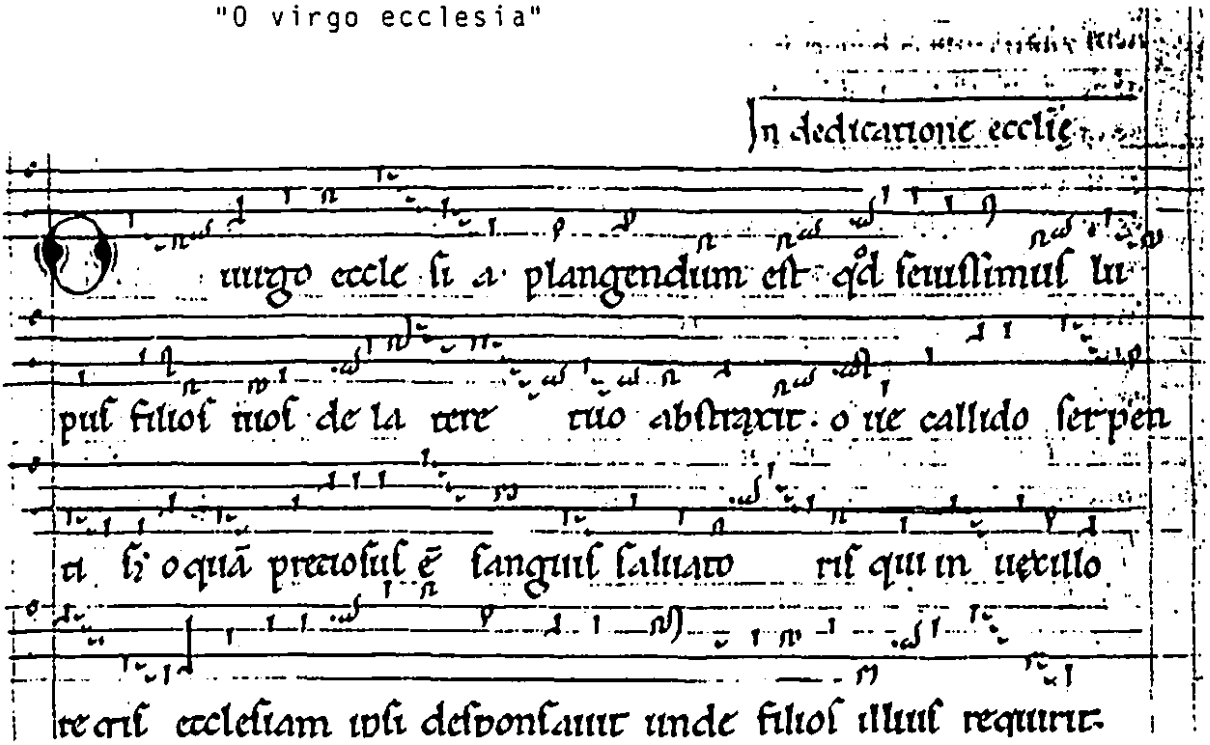
Appendix 2 cont.

Transcription of "Nunc gaudeant" cont.



Appendix 2 cont.

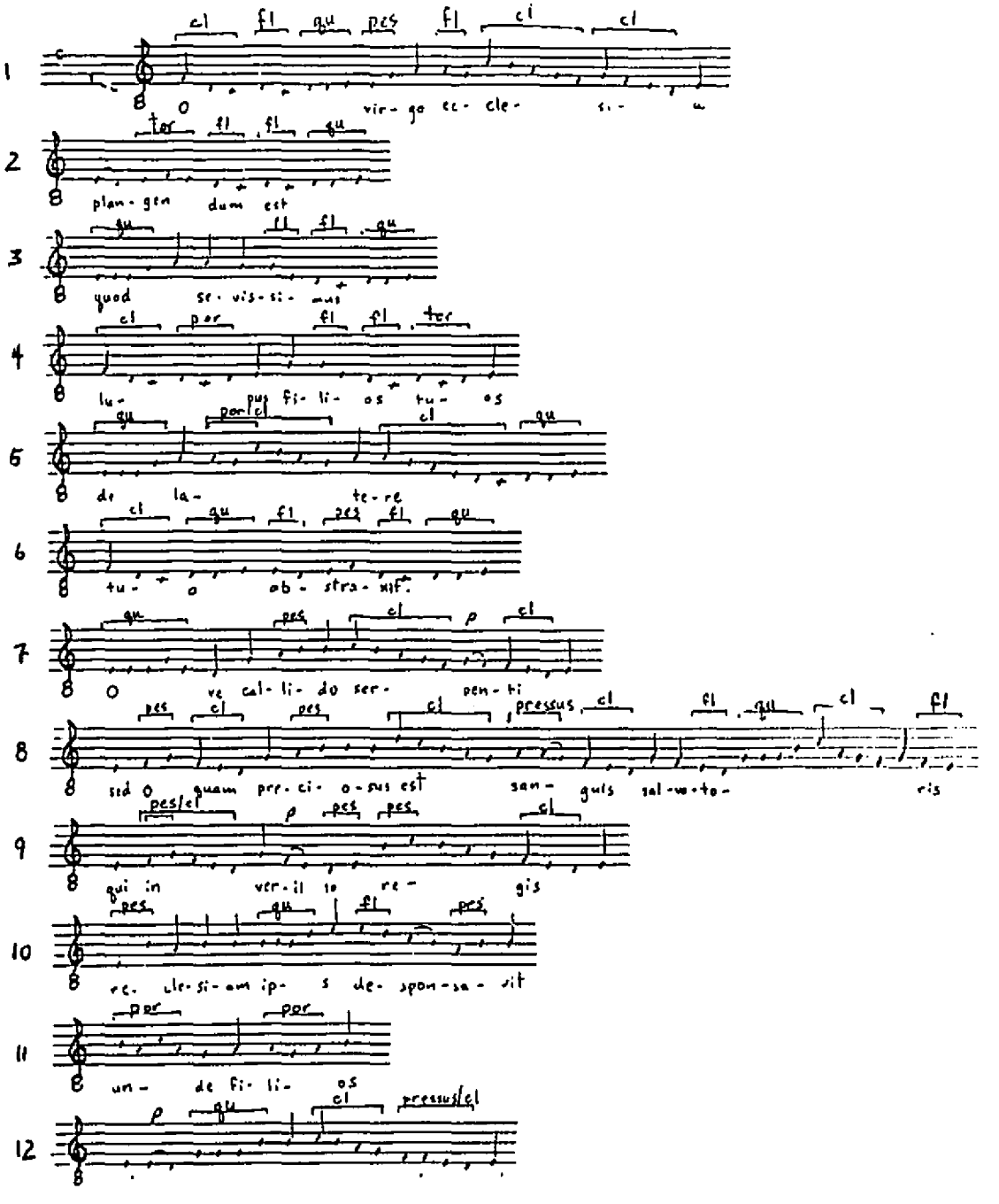
"O virgo ecclesia"



from f.170r of the Dendermonde Codex

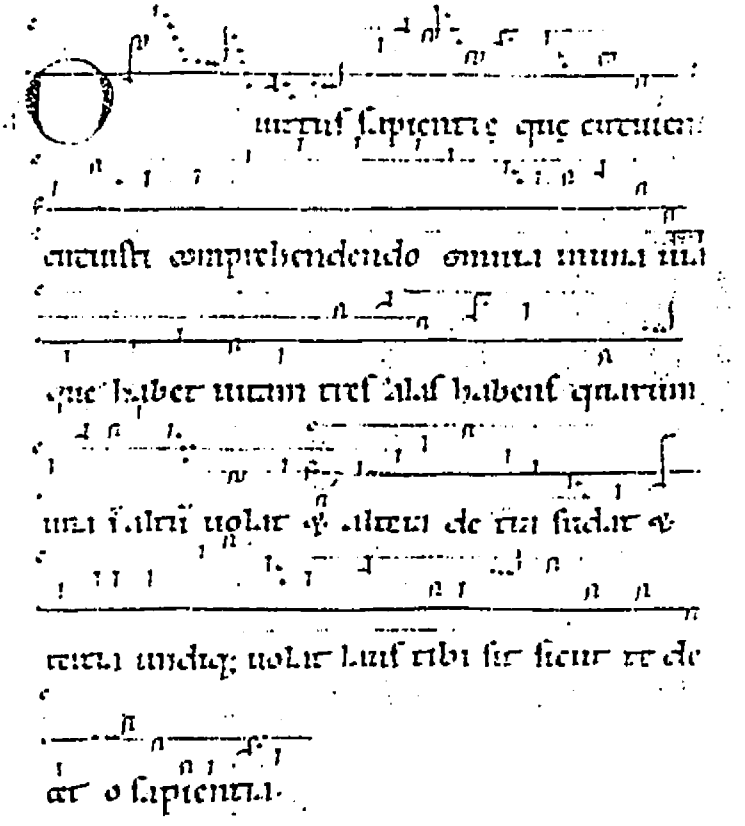
Appendix 2 cont.

Transcription of "O virgo ecclesia"



Appendix 2 cont.

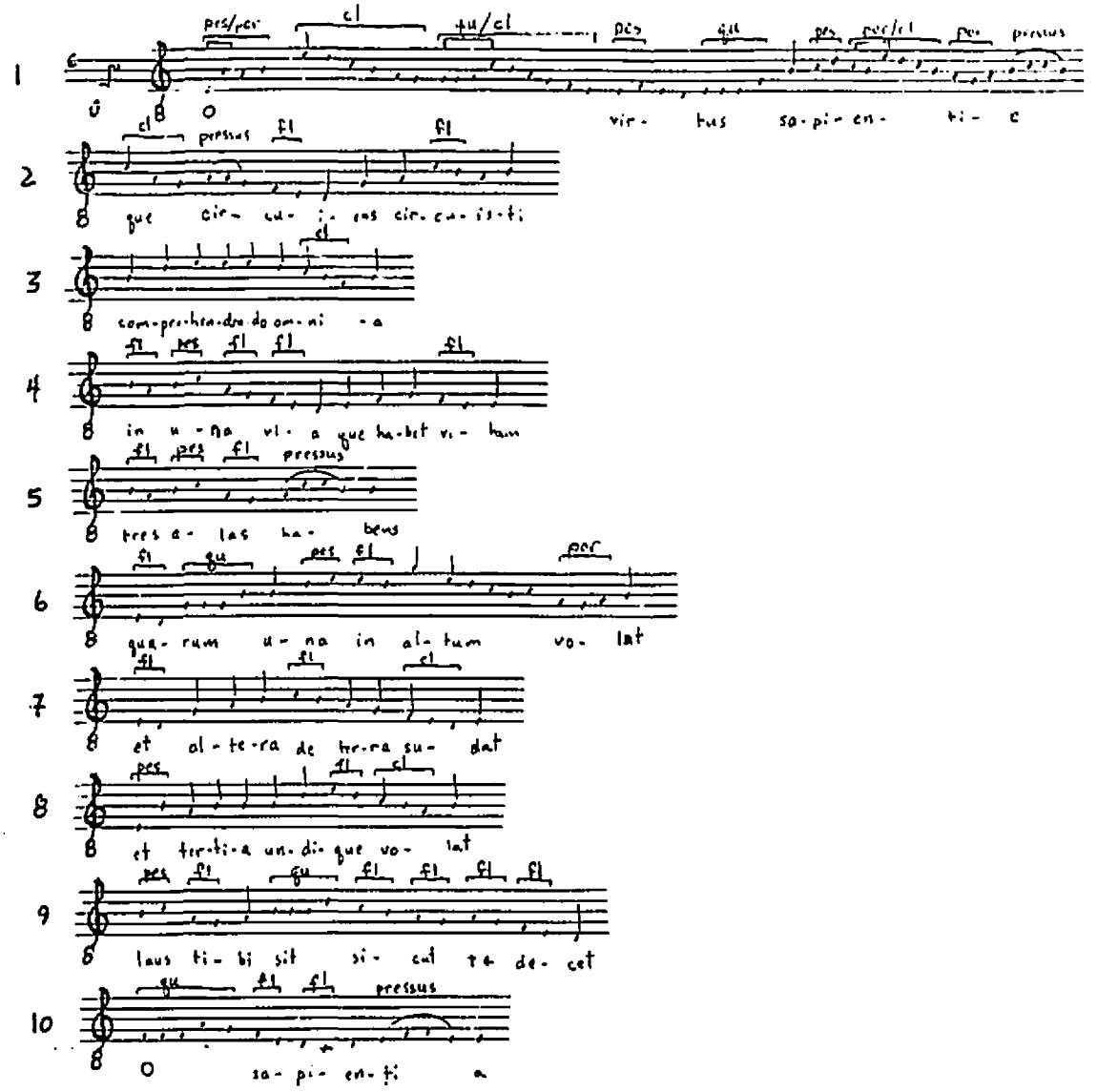
"O virtus Sapientie"



from f.466r of the Riesenkodex

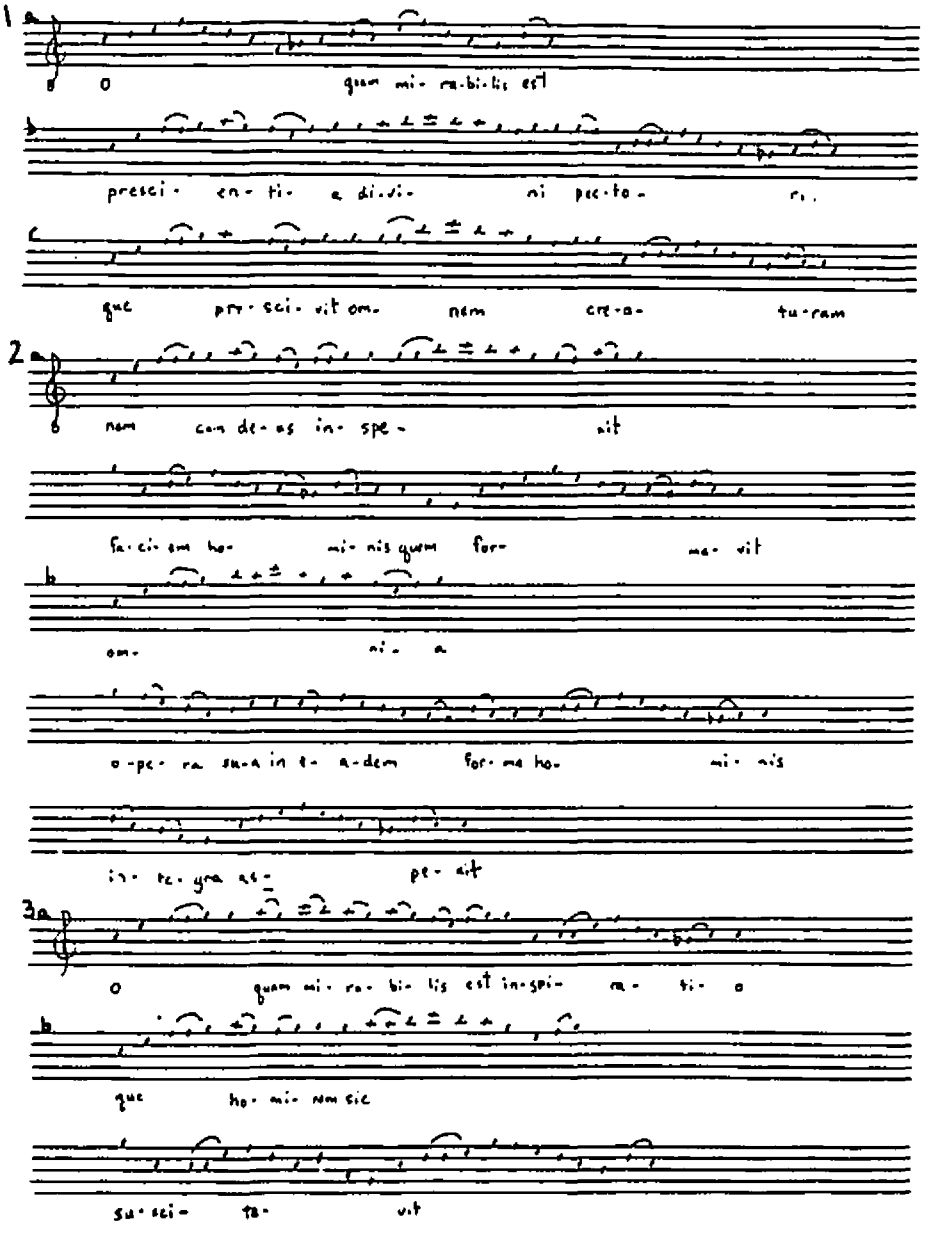
Appendix 2 cont.

Transcription of "O virtus Sapientie"



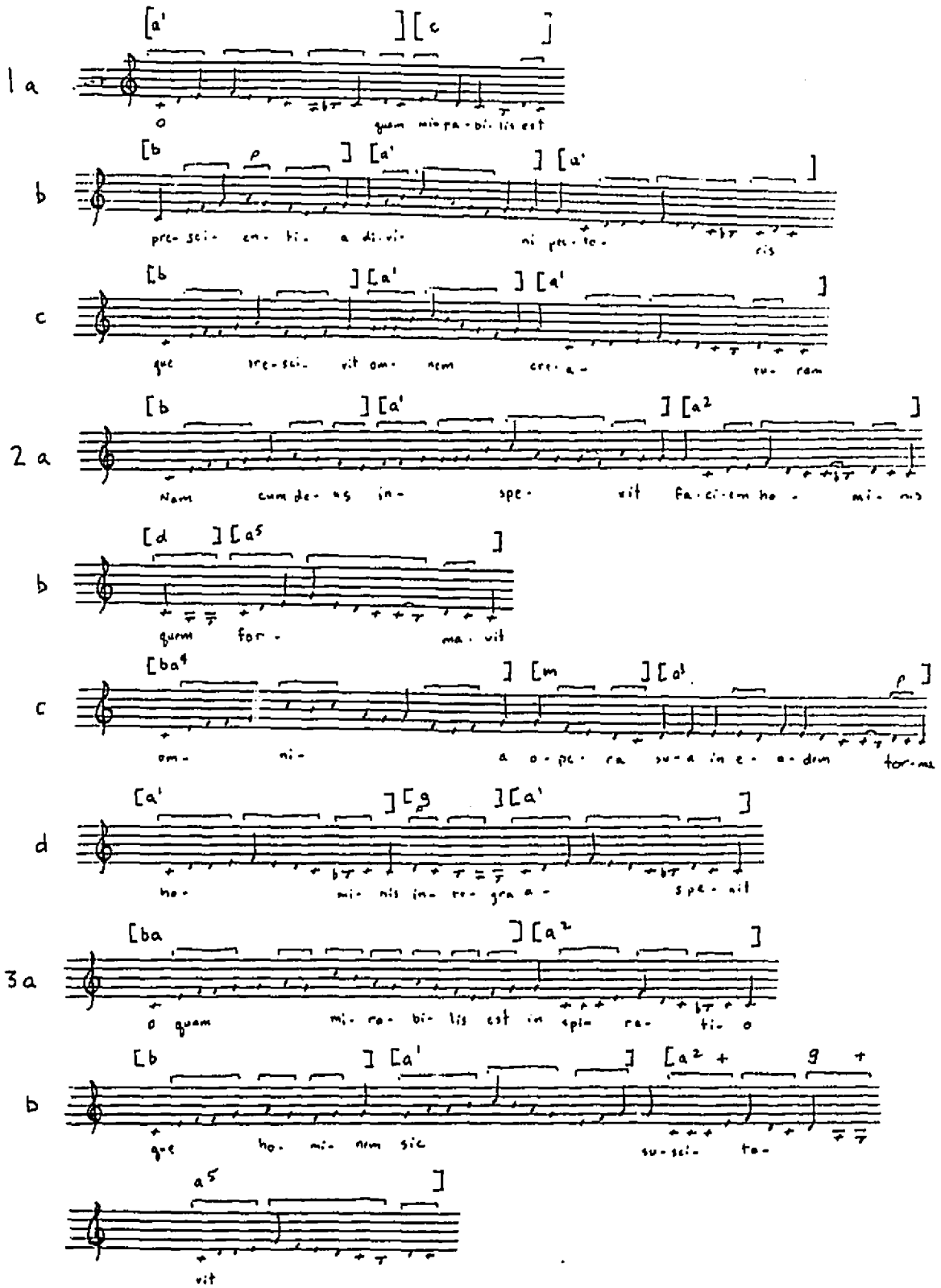
APPENDIX 3

Pfau's Phrasing of "O quam mirabilis est"



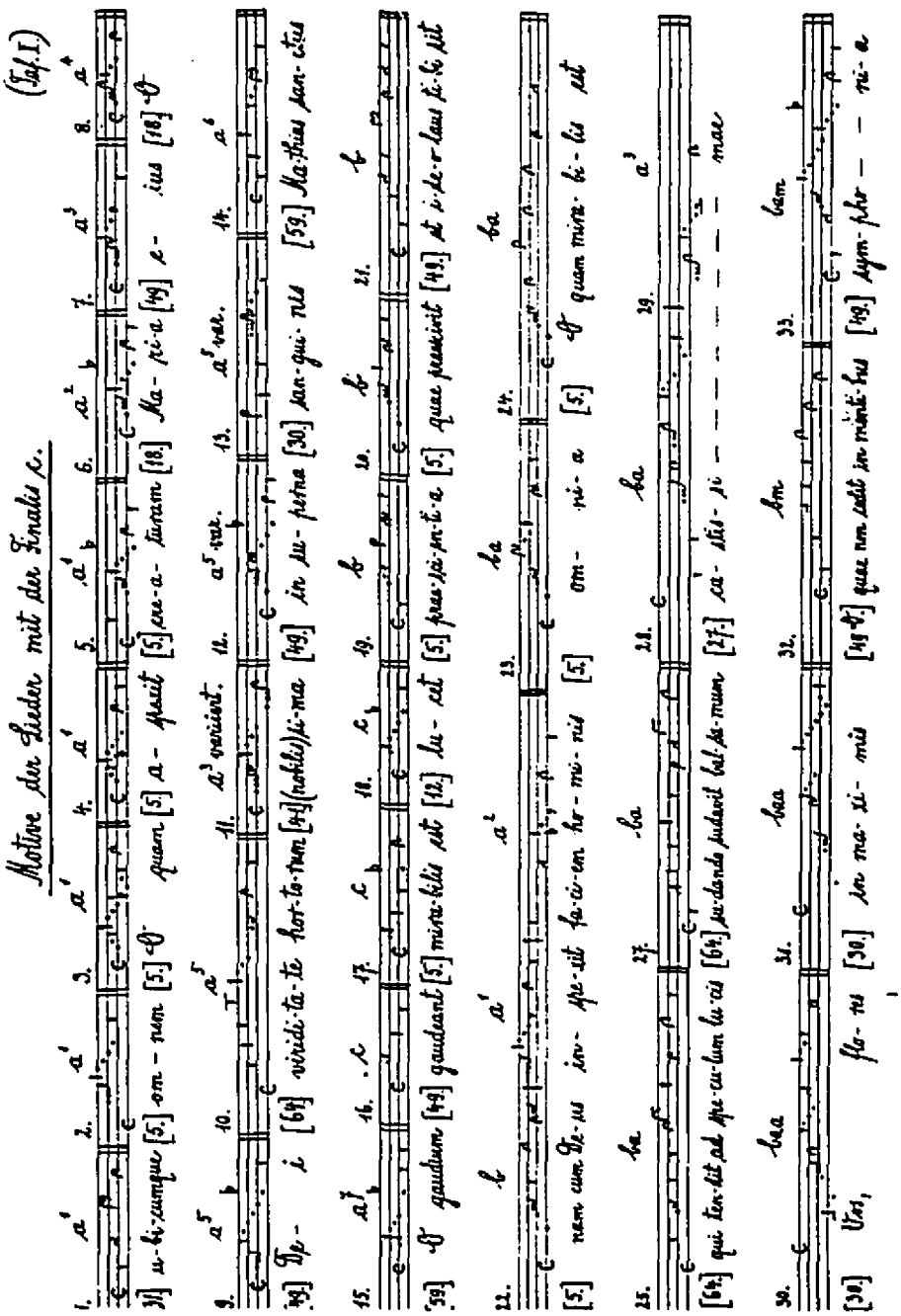
APPENDIX 4

Bronarski's Motivic Analysis Mapped onto my Phrasing

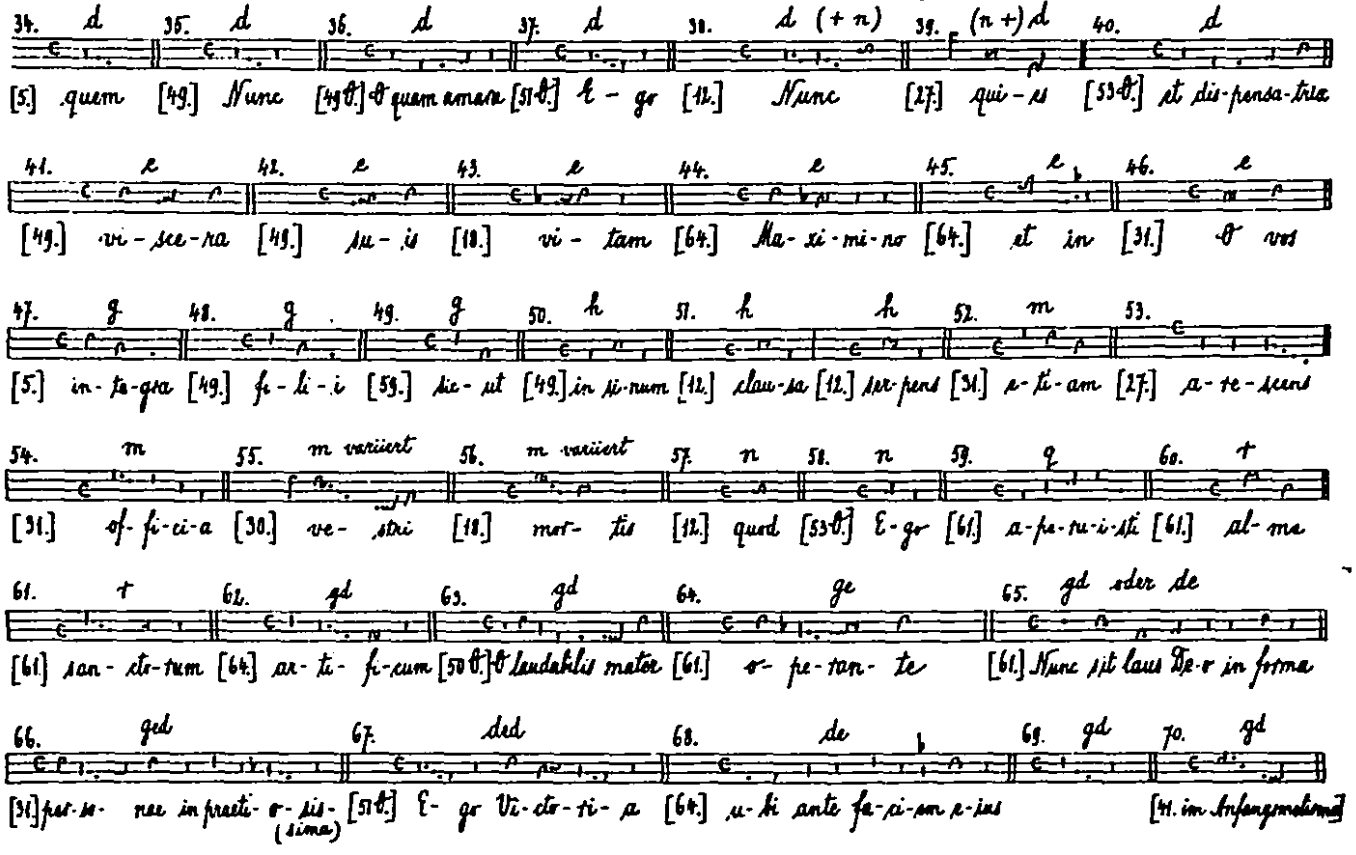


APPENDIX 5

Bronarski's Table of Motives from Songs with the Final C



Motive der Lieder mit der Finalis c. [Fortsetzung.] (Taf. II.)



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