

Beginnings and Endings: Defining the Mode in a Medieval Chant

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Abstract: The creation and transmission of the earliest Gregorian chant did not happen within the framework of the eight Gregorian modes. The earliest written sources (ninth century) do not assign modes to the chants. Notated antiphonaries from the end of the tenth century begin to contain marginal indications of mode. The question is not why Gregorian chant adopted the octoechos: it is about why it accepted a sense of finality in chant, a sense of a resting-place, which is withheld. It is significant both that Gregorian chant alone of the Latin repertories came under the influence of the octoechos, and that body of Gregorian chant contains much more differentiation of the final by leap than other Latin repertories.

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It is probably universally accepted that the creation and transmission of the earliest Gregorian chant did not happen within the framework of the eight Gregorian modes. The earliest written sources of chant date from the ninth century and do not assign modes to the chants they contain. Early graduals without notation do not contain modal assignments.¹ Starting in the late ninth or early tenth century non-notated graduals like the Corbie gradual (K) or notated antiphonaries like Hartker's from the end of the tenth century begin to contain marginal – but contemporary – indications of mode.² It is the exceptional early notated gradual that from the end of the ninth or beginning of the tenth century, like the now-destroyed Chartres gradual, that uses a system of Roman numerals to indicate psalm-tone, so with it mode.³ In a parallel but, it would appear, separate development, theorists from the ninth century on attempt to sort the

¹ Michel Huglo: *Les tonaires: Inventaire, analyse, comparaison* (Paris, 1971) gives a list of 10 pre-950 graduals without tonal indications on 102.

² The indications of mode in K take the AP (etc.) form, for *Authenticus Protus* (etc.) and are for the introits and communions only except for a single antiphon. See René Hesbert: *Antiphonale Missarum Sextuplex*. Brussels, 1935, cxxiii–cxxvi.

³ Peter Jeffery: 'The earliest oktoechoi: the role of Jerusalem and Palestine in the beginnings of modal ordering' *The study of medieval chant: paths and bridges, east and west*, ed. Peter Jeffery. Cambridge, 2001, 9.

chants they know according to a foreign system of eight categories. There has been an increasing amount of interest in recent years in what chant may have looked like before the modal “system” was adopted, “the modes before the modes” as Keith Falconer has put it.⁴ Because the Gregorian modes are organised round a given final, finals too have come in for their share of disavowal: merely the ‘pitch on which a given melody happens to end’⁵ or a ‘simplistic’ and ‘hardly an analytical classification’.⁶ Only recently David Hughes wrote, “The most that can be said is that more often than not a chant will show evidence that the final was felt to be a tone of some importance” yet add in a footnote a disclaimer that “not everyone will agree with even this much.”⁷

We have perhaps been cavalier in dismissing modes because they were an imported system. A better approach might be to ask what use were they? Why would they have been adopted? If there is anything we can say about the intellectual jackdaws of the Carolingian renaissance, it is that they did not take anything which was of no use to them. We can say the octoechos was a useful method of sorting antiphons the better to remember them; we could say that it provided tonal coherence in a world where performances of most things consisted of two parts, one from one pile of framing music (such as antiphons) and one from a different pile of core music (such as psalm verses). What we do have to acknowledge though is that since there has been anything that one could call music analysis, the modes have been there.⁸

Aurelian (fl. circa 850), whom we might describe as the first analyst in western musical history, does not define mode. Aurelian, with his ludicrous perception of the scale, is incapable of defining mode. Like the roughly contemporary early tonaries, he sorts chants into eight groups according to their finals. Within each group he describes the various differentiae. Because he is trying to describe differentiae, he has an enormous interest in the beginnings of chants. If one is talking about differentiae beginnings matter – but that is not the same as talking about mode. There are a few hard cases where the antiphon appears to end in a different mode to the one it began in, and these hard cases he tends to put with the mode of their beginning, because beginnings are what

⁴ Keith Falconer, ‘The modes before the modes: antiphon and differentia in Western chant’, *The study of medieval chant: paths and bridges, east and west*, ed. Peter Jeffery (Cambridge, 2001), 131–145.

⁵ David G. Hughes, ‘Guido’s Tritus: an aspect of chant style’, *The study of medieval chant: paths and bridges, east and west*, ed. Peter Jeffery, Cambridge, 2001, 221.

⁶ Terence Bailey, ‘Modes and Myth’, *Studies in Music from the University of Western Ontario* 1 (1976), 48.

⁷ Hughes, *op. cit.*, 221.

⁸ A welcome exception to the downgrading of modes is found in László Dobszay: ‘The system of the eight modes could function as well as it did during many centuries just because it was basically a true reflection of the nature of the music material and, during adaptation it was relatively rare that either the system or the melodies had to be forced.’ László Dobszay, ‘Some remarks on Jean Claire’s Octoechos’, *Cantus Planus: Papers Read at the 7th meeting, Sopron 1995*. Budapest, 1998, 188.

he is describing. We need to remember that there is a difference between classification and analysis, and that sorting can be carried out according to all sorts of criteria. It is not of itself an analytical task. There is a difference between *defining* a mode by its beginning, and sorting chants by their beginnings. Chant *sorting* has nothing to do intrinsically with modality – and yet implicit in Aurelian's arrangement is the notion that the beginning of a chant ought in some way to foretell the final pitch. Like Aurelian and other early commentators, we have a clear perception that certain types of beginnings are likely to lead to certain types of endings. In other words, we too are able to assign them to a mode. Aurelian's introit openings, shown in *Example 1* with a skeletal framework of the whole antiphon below them, provide a good example. In this example thin lines are used to connect the noteheads rather than slurs, because in the reductions below each incipit slurs are used to show analytical pitch connections.

As easily as Aurelian we assign *Suscepimus* to the first mode, *Circumderunt* me to the fifth mode, and *Puer natus est* to the seventh mode. What all of these introit antiphons have in common is that they begin with a leap from the final, which is shown as an unfilled stemmed note in *Example 1*. The final is thus signalled right from the start. As easily too we assign *Dominus illuminatio mea* to the second mode, *Omnes gentes* to the sixth mode and *Ad te levavi* to the eighth mode. What all these introits have in common is that they have a prefacing gesture which consists of the same intervallic package of a perfect fourth divided into a whole tone and a minor third in different permutations which I will stack in a neutral intervallic prime form and measure in semitones so I can refer to it as 0,2,5. 0,2,5 is, of course, the kernel of a pentatonic mode. (Numbering in semitones has the advantage that the numbers remain the same whatever their re-ordering and irrespective of melodic direction, so that one can instantly see that one is dealing with the same intervallic package, whereas a more intuitive description by interval will always omit one of the intervals. It is not immediately apparent that “minor third followed by a tone” (*Dominus illuminatio mea*) is playing with the same intervals as “perfect fourth followed by a minor third” (*Ad te levavi*). Nor is it clear that the boundary interval is always a perfect fourth.) Only after that 0,2,5 preface do the three plagal-mode introits have a leap from the final. The 0,2,5 preface in itself is a sign of one of the plagal modes, a sign that we are below the final and a sign that the leap which will flag the final is yet to come. Elsewhere I have referred to it as a gapped subfinal fourth,⁹ but this is an incomplete description of all its functions,

⁹ The “tierce vide de quarte grave ornementale” of Marie-Noël Colette is of course the same thing. ‘Des modes archaïques dans les musiques de tradition orale’, *Études Grégoriennes* 27 (1999), 165–184, particularly 167.

1:
Suscep - i - mus De - us miseri - cor di - am ...

5:
Circumdede - runt me ge - mi - tus ...

7:
Pu - er natus est no - bis ...

2: 5 2 0
Do - mi - nus il - lu - mi - na - ti - o ...

6: 5 2 0
Om - nes gentes plaudite ma - ni - bus: ju - bi - la - te ...

8: 0 5 2
Ad te ve - vi a ni - mam me - am deus me - us ...

3:
Confessi - o et pulchri - tu - do in conspec - tu sanctifi - ca - ti - o - ne e - ius

4:
Resurrex - i et adhaec ac - cum sum al - le - lu - ia

Example 1: Aurelian's introit openings

as we shall see. Incidentally, all these leaps from the final have been to the tenor of the mode, whether directly or indirectly. Final and tenor are polarised, set apart from one another. This polarisation is a central part of what we feel to be modal colour.

I have left the two deuterus modes till last because of the well-known way in which they so often seem to operate differently to the other modes in the system. Aurelian's mode 3 example, *Confessio*, opens with a 0,2,5 preface followed by a leap from *a* that, by the same logic as my previous examples from modes two, six and eight, would seem to promise *a* as final. But we notice that, unlike the three plagal mode examples, *a* is not part of the 0,2,5 preface. We equally notice that there is not a single leap from E in the whole antiphon. Not until the music leaps from the last E to begin the introit verse could we say there has been a declaration of the final by leap, and there have been many leaps from G in particular in between. Nonetheless, with Aurelian we happily classify this introit as phrygian or mode 3, notwithstanding certain resemblances to certain chants of another mode.¹⁰ Finally, Aurelian's *Resurrexi*, representing mode 4, opens with a leap from D. But it is a different kind of leap from the leap of a fifth which opened *Suscepimus*: it is only to F. Leaps from D to F, in themselves, do not impart enough information. The coy hypophrygian mode introduces to us a different kind of leap, one from the subfinal that encloses the final, like a wedge zeroing in on the missing note. Almost from its absence we anticipate its presence, which is indeed confirmed at the cadence after the first alleluia, and, like Aurelian, we assign it to mode four. When we compare the two E-mode introits, we see that in fact they both have their first leap from the subfinal.

Now it might look as if I am lining up chants by melody-type, but I am not. I am performing an act of analysis which goes beyond typology, a kind of meta-analysis that extrapolates from things which are different and known to be different what they have in common, because it is what they have in common that makes modality operable as a system. Let me be a pragmatic Caro-

¹⁰ The ED–G opening is strikingly similar in fact to the DC–F opening of mode 1 office antiphons. The continuation however gives it away: the typical dorian office antiphon follows with a stepwise ascent to *a*, and confirms the final by a return to D and subsequent leap from it. Here the giveaway is the minor third *pes a–c*: to continue by step would be to land on the pien-tone *b*. Equally, if the dorian mode paradigm continued by minor third, the pien-tone *bb* would be involved. The message of the 2,0,5 ordering of the basic intervallic package, in other words down a tone then up a perfect fourth, is that this is an authentic mode with a medium-range subfinal to final move; the continuation reveals whether this final should be named D or E. The difference between dorian and phrygian is that the former will confirm D as final by a subsequent leap. Non-confirmation of the final in this way actually says that E is the final. Genre also clarifies: as an opening of an introit this gesture is phrygian only. In dorian introit antiphons, as opposed to office antiphons, it is an internal gesture following a more leisurely descent to the subfinal. This descent often includes a first leap from D.

lingian here: there is no point in having a system built around four finals if you have no way of telling what those finals are. There needs to be some final-establishing gesture, which is able to operate in every mode, and I believe that the gesture is a leap upwards from the final near the beginning of the piece. In itself such a leap does not have to lock performer or composer into any scalar system of tones and semitones: it simply says “watch this space”. At the beginning of the chant the final acts as a springboard into musical space, and if I may continue my image, musical gravity will bring the melody eddying back down to it again in order to round off the gesture at the last cadence. The leap makes one note different to all the others, and in a system in which every mode consists of the same pitch classes this is clearly important, particularly in a monophonic musical world.¹¹ Aurelian shares that sense that the final means something, and that it must mean more than just where one happens to stop. A final should imbue a work as the point to which a return needs to be made.

So it is not that pieces can be characterised by their beginnings. It is that the last notes of pieces can be foreknown by the beginnings of those pieces. This helps us better to understand Aurelian when he writes that in introits, antiphons and communions we should seek the mode at the beginning:

Notandum sane quia in offertoriis et responsoriis atque invitatoriis non aliubi requirendi sunt toni nisi ubi fines versuum intromittuntur, maximeque servandus est sensus litterature quam modulationis. In introitis vero, antiphonis necne communionibus semper in capite requirantur.¹²

This remark is obscure – there is widespread disagreement as to whether “tonus” here means psalm tone, tenor, differentia or mode – and it is often taken out of context. It occurs in Aurelian’s discussion of mode 1, thus at the point where he begins what one might call his analytical discussion proper, the point where he has to start talking about named pieces because he cannot define a mode, only exemplify it. I think it would be fair to say that Aurelian’s chief concern overall is connection, tonal coherence at the joins, and his context here is the criteria for effecting a partial return to the respond in responsories and offertories. The first of his criteria is that the return has to make grammatical sense, and the second is tonal coherence: “you find the mode at the ends of the offertory verses”. If I may venture to paraphrase what he says here, I would say “don’t worry about the melody – *maxime servandus est sensus litterature quam modulationis* – but do look for a strong modal indi-

¹¹ Anecdotal support for the importance of leaps can be found in all sorts of places. Among recent studies see, for example, Barbara Haggh: fourths and fifths ‘appear in most of the chants of the office of St Germain, often at structurally or syntactically strategic places’. ‘The office of St Germain, Bishop of Auxerre (d. 448, feast 31 July).’ *Études Grégoriennes* 26 (1998), 111–134, particularly 117.

¹² *Musica Disciplina*, ed. Lawrence Gushee, *Corpus Scriptorum de Musica* 21 (Rome, 1975), 89.

cator – *requirendi sunt toni ubi fines versuum intromittuntur*. In fact, when one looks at early mode 1 offertories, one almost always finds that D is emphasised by a leap at the very point where the verse end connects to the repetendum. In other words, leaps are how we discern the modes, and offertories get a second chance to let us know. But in an introit performance one cannot go back to the middle of the antiphon so the beginning must indicate what the end is to be.

However, we all also know, just as Aurelian did, that there are chants that do not reveal the final so readily. Having just assigned the antiphon *Gaude Maria Virgo* to the seventh mode without comment, he ends his discussion of mode 7 with the remark that in the case of antiphons like *Gaude Maria Virgo* which begin in mode 7 and end in mode 4 the psalm verse should be sung straight (*in directum*) and not raised in the middle. Clearly then he envisages psalm tone 4 rather than psalm tone 7. *Example 2* shows *Gaude Maria Virgo* and four other antiphons with which I would like to compare it. The reduction simplifies the chant by taking all notes which are singled out by leap, and some important neighbour notes.

If we examine *Gaude Maria Virgo*, which is found mainly in mode 4 and occasionally in mode 7, we find that its ending is characteristic of a huge number of mode 4 antiphons but that its opening is not decisive for the very good reason that it consists of that ubiquitous 0,2,5 package – a package that in itself cannot present decisive tonal information because of its very ubiquity. Some of the twelve possible permutations of this intervallic group have strong associations with one mode or another, but these associations are not definitive. *Example 3* shows all the possible permutations of this opening, along with the mode or modes that they signify. The ones completely in hollow noteheads are those that are rare if not non-existent: I have yet to come across any examples of them. In the other examples a hollow notehead shows the final. In openings, which do not contain the final it is shown as a hollow notehead in square brackets. It is noteworthy that in all four of these cases the final is E. Where there is a sample incipit in italics this is because the permutation shown is so uncommon that I feel I need to reassure the reader that it does in fact exist.

The tonal information given by a 0,2,5 intonation will always have to be confirmed later. This is particularly the case for those intonations which show a simple rising form. So far today we have seen 0,2,5 as preparatory in the case of modes 2, 6 and 8, an indicator of a plagal mode leading up to its final. Elsewhere I have discussed another preparatory function that it has as an introduction to the tenor in the case of two modes that share the tenor *c*, modes 3 and 8.¹³

¹³ Fiona McAlpine, *Modal ambiguity and the phrygian mode: the witness of Regino of Prüm*. Paper read at the Medieval and Renaissance Music Conference, University of Oxford, 2000.

3. *Mour antiphonal: 55'*

1. *Goude Mana vir-go cunctas hereses sola intermi-ssi in universo mundo EUOUAE*
Bourgeois Struere?

2. *LEUAE antiphonal: 8'*
Ex Aggusto vocat N-llum meum veniet ut sal-uet pop-ulum suum.
Ex-emptio 111. 5
Ex de-gre-to ...

3. *LU JOIE*
Si puis si-ty, veniat et bibat: et de ventre e-lus fluat aquee vive.
Lucas 549

4. *EU OUAE* *Benedic- ta glo-ri-a do- mini de lecto suo AEUA*

5. *ANNA FIS*
EU OUAE *(qui pascit ante illum in spitu et vita- te Eli- ae para re do-mino ple-dem perfectum*

Example 2: *Nothae* and associates

The image displays a musical score with eight staves. Above the staves are three boxes containing the following labels: $[T + P4]$, $[m3 + P4]$, and $[T + m3]$. The staves contain musical notation with various mode labels: mode 1, mode 2, mode 3, mode 4, mode 5, mode 6, mode 7, and mode 8. Specific pitch sequences are indicated: "2, 0, 5", "2, 5, 0", and "0, 2, 5". Latin text fragments are interspersed: "Accipite", "De profundis", "Lactare", "Diffusa", and "Exultet".

Example 3: Permutations of 0,2,5

Now we know that “the problem” with *Gaude Maria Virgo* and its ilk is that until the concept of co-finals came along to rescue it it could not be fitted into the Greater Perfect System. With the advent of staff notation the problem was able to be reformulated: rather than a modulating antiphon we have an antiphon for which there is a place in the scale. I think we are entitled to ask though whether an Aurelian could ever have perceived this bad scalar fit, so I shall set his observations off against those of a later theorist for whom the scale was no mystery: John.¹⁴ First then I would like to explore the notion that for

¹⁴ John, once known as John Cotton, then John of Afflighem, has been relocated to the area between St Gall and Bamberg, and most recently to the diocese of Passau. See Christopher Hohler’s review of Hucbald, Guido and John on music: three medieval treatises, ed. Palisca, (Yale, 1978) in *Plainsong & Medieval Music* 3 (1980), 56–58.

Aurelian *Gaude Maria Virgo* seemed to begin in mode 7, whereas for John it was not worthy of mention. The beginning commonly found in French and German sources plays with the same pitches as many mode 7 antiphons but not in the same permutation. To get the same permutation I will have recourse to the antiphon most notorious for starting in mode 7 and ending in mode 4: *Ex Aegypto*. (See Example 2, number 2.)¹⁵

Ex Aegypto in most sources begins with a leap of a minor third followed by a whole-tone pes on the third syllable. This opening 0,2,5 group leaping from E or a is typical of a huge group of almost-identical mode 4 antiphons which generally end with a falling minor third in the same configuration as *Gaude Maria Virgo*. These antiphons typically amplify the 0,2,5 group with its lower neighbour note, like John's mode 4 example *Si quis sitit*, which is how *Ex Aegypto*, also a straight mode 4 for John, is sometimes also found. The resulting opening can be close to the mode 7 G–a–c opening which almost always contains a pes *cd*. (See Example 2, number 3.) I have selected a mode 7 control group from John's tonary because, unlike Aurelian, he was able to indicate pitch precisely. Both of John's mode 7 antiphons featuring this common 0,2,5 opening show just how close these two openings could come. The opening of his *Benedicta gloria* is intervallically and gesturally identical to the opening of *Ex Aegypto* in Einsiedeln and other German sources. (See Example 2, number 4.) John's other 0,2,5 antiphon, *Ipse praeibit*, is intervallically and gesturally identical to the opening of *Gaude Maria Virgo* in the Einsiedeln version. (See Example 2, number 5.) This opening is ultra-rare in mode 7. It is the only one of its type in MMMA.¹⁶

Example 4 shows six mode 7 antiphons, all cited by John as exemplars of mode 7. It is fascinating how each of the standardised openings of mode 7 antiphons can be stencilled onto the same basic paradigm, whose four pitches are a minimum sufficient condition to situate that final as G. The most characteristic feature of these antiphons is the decoration of the tenor by a stepwise move down to *b* and back; a second common, but by no means compulsory feature, is the second leap from G to *c* which heralds the beginning of the final descent. This basic paradigm shows up most clearly in John's *Michael praepositus* with its opening leap of a fifth. Mode 7 antiphons that do not open with a leap from G, like *Quo progredieris* or *Homo natus est*, clearly display truncated versions of the paradigm, which shows up very clearly when one

¹⁵ Such antiphons have attracted a good deal of scholarly attention. See especially Charles Atkinson, 'The *Parapteres*: *Nothi* or Not?', *Musical Quarterly* 68 (1982), 32–59.

¹⁶ László Dobszay and Janka Szendrei, 'Die Antiphonen', *Monumenta monodica medii aevi* vol. 5, Kassel, 1999. This publication, with its sorting of its repertory by modal final into the accustomed eight groups, brought issues of modality back to the forefront of musicological inquiry.

Example 4: Mode 7 antiphons

looks at how the differentiae proposed by John slot back into the antiphons. Such antiphons often feature a later leap from G, as in *Homo natus est*, but they may simply show the linear descent to G, as in *Quo progredieris*. *Quo progredieris* is interesting because of the role of the subfinal F in situating G as the final. In the absence of a further leap up from G, the a–F leap down draws attention to G by enclosing it. These last three antiphons display one of the possible extensions of the paradigm: a move from the tenor *d* to its neighbour *e*. It is a feature which is shared with antiphons of the 0,2,5 group – *Benedicta gloria* and *Ipse praeibit*. Extension of the paradigm is also seen in the way the antiphons of the 0,2,5 group and antiphons with a rising scale starting on *a*, such as *Cantate Domino* (Example 4, number 6), map themselves onto the paradigm by simply adding a lower neighbour-note, *a*, to the tenor decoration. The 0,2,5 group again has an introductory function and in this case it is an introduction to the tenor as focus of activity. About half of the mode 7 antiphons that open with a 0,2,5 group confirm their mode 7 status by a subsequent leap from G, which is what we would expect. A comparison of sources shows too that the more ambiguous openings are quite interchangeable with more definitive ones.

Quite simply one can see that antiphons like *Qui sitit*, *Ex Aegypto* and Aurelian's *Gaude Maria Virgo* do not map onto the mode 7 paradigm. This should be clear from the bottom of Example 2, where the basic structure of *Gaude Maria Virgo* is reproduced under *Ipse praeibit* and it is clear that it does not fit. The grouping dcbG can only fit G among the four finals. The background structure of the mode 4 antiphons is pentatonic: the opening detail of the 0,2,5 group transports that structure into the realm of the audible. The 0,2,5 opening of mode 7 antiphons does not reflect their background structure. Further, unlike some of the mode 7 antiphons which do not feature a later leap from G within the antiphon, the mode 4 antiphons all confirm *a* or *E* as the final by a later leap from that pitch. We do not necessarily expect that from a phrygian chant. Not only that: the leap upwards that the 0,2,5 group contains is from the same pitch as the final note of the antiphon. We do not expect that from a 0,2,5 opening. The dotted slurs of Example 3 show that in only three cases does the leap upwards from one of the pitches within a 0,2,5 opening reveal the final – and two of those are mode 4 openings. The final *a* or *E* has laid its cards upon the table yet will not be believed.

The big question then is not why Gregorian chant adopted the octoechos: it is about why it accepted a sense of finality in chant, a sense of a resting-place, which is withheld. It is surely significant both that Gregorian chant alone of the Latin repertories came under the influence of the octoechos, and that the body of

Gregorian chant contains much more differentiation of the final by leap than other Latin repertories.¹⁷ If we were to abandon a rigorous definition of modality and instead look at what a modal “system” might have done for the Carolingians, it might have provided a signpost to the final cadential degree.¹⁸ We might too remind ourselves of the philosophical sense of finality or purpose: that the piece seeks its final, that the purpose of the piece is to get to its end.

I would like to let the unknown tenth-century writer of the *Dialogus de Musica* have the last word:

Tonus vel modus est regula, quae de omni cantu in fine diiudicat. Nam nisi scieris finem, non poteris cognoscere ubi incipi.¹⁹

A “mode” was a means to an end, almost literally. For if you do not know where you are going, how can you even set out? But the modes were able to provide the map for the journey, because they were able to sort out pretty well all songs according to their destinations.

¹⁷ See, for example, David Hiley: “The Old Roman version...is less ‘gapped’ than the Gregorian” David Hiley, *Western Plainchant*. Oxford, 1993, 533. This needs to be nuanced by Nowacki’s conclusion that despite the “overwhelming predominance of stepwise motion” in the Old Roman antiphon repertory, large anacrustic leaps from final to reciting pitch form a notable exception. Edward Nowacki, *Studies on the Office Antiphons of the Old Roman Manuscripts*. PhD diss., Brandeis University, 1980, 57–58. Barbara Haagh, in the article cited in footnote 11, adds that intervals of a fourth and fifth are characteristic of Western chant (i.e. Gregorian, Gallican and Hispanic) but not of Roman, Beneventan or Ambrosian chant.

¹⁸ A similar view of modes, though not specifically of finals, has been expressed by László Dobszay: “Analysis demonstrates, however, that the modal system in the sense of tonality can operate as a compass for the singer while he is moving round the notes, even in the absence of modal theory”. László Dobszay, ‘Chant and Analysis’, *Artes Liberales: Karlheinz Schlager zum 60. Geburtstag*, ed. Marcel Dobberstein. Tutzing, 1998, 117.

¹⁹ Martin Gerbert, *Scriptores ecclesiastici de musica sacra potissimum*, vol. I. Sankt-Blasien, 1784, 257.