

CADENTIAL AND MODAL TREATMENT IN PALESTRINA'S DELLE MADRIGALI SPIRITUALI A CINQUE VOCI LIBRO SECONDO (1594) AND LASSO'S LAGRIME DI SAN PIETRO (1595)

Anne-Emmanuelle Ceulemans

ESKA | « Musurgia »

2019/2 Volume XXVI | pages 71 à 94

ISSN 1257-7537 ISBN 9782747229272

Article disponible en ligne à l'adresse :
https://www.cairn.inforevue-musurgia-2019-2-page-71.htm

Distribution électronique Cairn.info pour ESKA. © ESKA. Tous droits réservés pour tous pays.

La reproduction ou représentation de cet article, notamment par photocopie, n'est autorisée que dans les limites des conditions générales d'utilisation du site ou, le cas échéant, des conditions générales de la licence souscrite par votre établissement. Toute autre reproduction ou représentation, en tout ou partie, sous quelque forme et de quelque manière que ce soit, est interdite sauf accord préalable et écrit de l'éditeur, en dehors des cas prévus par la législation en vigueur en France. Il est précisé que son stockage dans une base de données est également interdit.

Cadential and Modal Treatment in Palestrina's *Delle Madrigali Spirituali a Cinque Voci Libro Secondo* (1594) and Lasso's *Lagrime di San Pietro* (1595)

Anne-Emmanuelle Ceulemans*

In 1594, one month before his death, Giovanni Pierluigi da Palestrina published his *Delle madrigali spirituali a cinque voci libro secondo*¹. The publication consists of thirty five-voice madrigals organised as a modal cycle, i.e. arranged in modal order. They are set to a Marian poem by an unknown author in *ottave rime*, a traditional verse form composed of eight-line stanzas. The purpose of this article is to analyse the cadential treatment of these madrigals in relation to sixteenth-century modal theory, and to compare them with a similar cycle composed by Orlando di Lasso, the *Lagrime di San Pietro*, published posthumously in 1595². The results of this comparative analysis will be tested against the theories of polyphonic modes developed by Bernhard Meier and Harold Powers.

The Collections

Palestrina's spiritual madrigals were published in Rome by Francesco Coattino with the title *Delle madrigali spirituali a cinque voci libro secondo* (1594). The collection

- *Université catholique de Louvain, Louvain-la-Neuve Musical Instruments Museum, Brussels. I am grateful to the following colleagues who offered their assistance in the preparation of this article: Thomas Christensen, Christophe Guillotel-Nothmann, Marco Mangani, Nicolas Meeùs, and Daniele Sabaino.
- ¹ Giovanni Pierluigi da Palestrina, *Delli madrigali spirituali a cinque voci libro secondo*, Roma, Presso a Francesco Coattino, 1594.
- ² Orlando di Lasso, *Psalmi Davidis poenitentiales*, München, Adam Berg, 1584. Lasso's *Lagrime di San Pietro*, along with his *Penitential Psalms*, are analysed in detail in Anne-Emmanuelle Ceulemans, "Lassus, Meier, Powers: la réalité des modes sous la loupe", *Revue belge de musicologie*, 72 (2018), p. 85-110. [Special issue "Le plus que divin Orlande", Henri Vanhulst (ed.), published after an international conference in Mons, 10 July 2015.] The analytical data on Lasso and theoretical arguments developed below are in part adapted from this article. To avoid unnecessary overlapping, music examples in the present article are drawn only from Palestrina's *Madrigali spirituali*.

is dedicated to Christina of Lorraine, Grand Duchess of Tuscany. Its text is an anonymous Marian prayer that displays similarities to the Litany of Loreto. It consists of *ottave rime* on hendecasyllabic verses, each strophe following the rhyme scheme ABABABCC³. In most of these madrigals, the quinto shares the alto clef; sometimes it acts as a tenor (see table 1). During the publication process, inversions between the tenor and quinto parts seem to have occurred, since in several madrigals the alto and tenor parts are written in the same clef, while the quinto has a lower one⁴.

Lasso's *Lagrime di San Pietro* is a collection of twenty spiritual madrigals for seven voices (canto I–II, alto I–II, tenor I–II, basso). They are set to selected stanzas from Luigi Tansillo's homonymous collection, also in *ottave rime*⁵. To this setting, Lasso added a single Latin motet as a unicum, *Vide homo*. The collection was published by Adam Berg in Munich (1595). As in Palestrina's madrigals, the *ottave rime* consist of hendecasyllabic verses according to the rhyme scheme ABABABCC⁶.

Palestrina's collection forms a complete modal cycle (table 1). Each mode is represented through a specific tonal type, the authentic and plagal modes being moreover

³ According to Giuseppe Baini, the prayer was recited at the Oratorio of San Filippo de Neri, see Giuseppe Baini, *Memorie storico-critiche della vita e delle opere di Giovanni Pierluigi da Palestrina*, Roma, Società tipografica, 1828, p. 247. Palestrina's collection is discussed in Alberto Cametti, *Palestrina*, Milano, Bottega di poesia, 1925, pp. 331-338 [reprint Roma, Edizioni Torre d'Orfeo, 1994]; Harold S. Powers, "Tonal Types and Modal Categories in Renaissance Polyphony", *Journal of the American Musicological Society*, 34 (1981), pp. 428-470, especially pp. 450-451; Biancamaria Brumana, "Les musiques pour la naissance d'un grand-duc et le début du mécénat musical de Christine de Lorraine", *Symphonies lorraines: compositeurs, exécutants, destinataires*, Yves Ferraton (ed.), Paris, Klincksieck, 1998, pp. 281-293, especially pp. 287-289.

⁴ See madrigals nos. 4-5 and 27-30. The following edition has been used for the analyses below: Giovanni Pierluigi da Palestrina, *Il libro secondo dei madrigali spirituali a 5 voci. Priego alla B. Vergine*, Lino Bianchi (ed.), Roma, Istituto italiano per la storia della musica, 1957. Questionable passages and music examples have been checked against Coattino's print. Besides the mingling of tenor and quinto parts, Coattino's edition poses other problems. To cite one striking example, madrigal 29 (*Al fin*) includes a cadence in measure 43 preceded by consecutive fifths and octaves. Correcting the final A of the quinto in measure 42 to F solves the problem, and this is possibly what Palestrina intended.

⁵ Luigi Tansillo, *Le lagrime di San Pietro*, Vico Equense, appresso Gioseppe Cacchij & Gio. Battista Cappello, 1585.

⁶ Historical information and analyses of this collection are to be found in Harold S. Powers, "Tonal Types", pp. 448-449; Fritz Jensch, "Orlando di Lassos *Lagrime di San Pietro* und ihr Text", *Musik in Bayern*, 32 (1986), pp. 43-62; Robert G. Luoma, *Music, Mode, and Words in Orlando di Lasso's Last Works*, Lewiston (N.Y.), Edwin Mellen Press, 1989; Siegfried Gissel, "Die Tonarten der *Lagrime di San Pietro* von Orlando di Lasso", *Musica disciplina*, 47 (1993), pp. 5-33; Carmela Bongiovanni, "Tansillo in musica: il caso delle *Lagrime di san Pietro*", *Fonti musicali italiane*, 11 (2006), pp. 7-65; Alexander J. Fisher, "'Per mia Particolare Devotione': Orlando di Lasso's *Lagrime di San Pietro* and Catholic Spirituality in Counter-Reformation Munich", *Journal of the Royal Musical Association*, 132 (2007), pp. 167-220; Anne-Emmanuelle Ceulemans, "Lassus, Meier, Powers", pp. 85-110. For the analyses below the following edition has been used: Orlando di Lasso, *Lagrime di San Pietro*, Fritz Jensch (ed.), Kassel, Bärenreiter, 1989.

differentiated by the octave of their final. The vocal ranges remain close to the traditional octave species, except for sporadic range extensions. Despite his strong insistence in differentiating authentic and plagal modes, Meier stresses that even sixteenth-century musicians often fail to make a clear distinction between modes 3 and 4⁷. This is true in this collection too: six pieces ending on E share the same tonal type. The vocal ranges of the canto and the tenor tend to be authentic rather than plagal, but not quite as high as in other authentic modes.

Madrigals nos.	Mode	Tonal type			Clefs		
		• •	В	T	Q	A	S
1-3	1	b - g ₂ - g	f_3	c_3	c_2	c_2	g_2
4-5	1	b - g ₂ - g	f_3	c_2	c_3	c_2	g_2
6-10	2	$b - c_1 - G$	f_4	C4	C4	c_3	c_1
11	3(-4)	4 - c ₁ - e	f_4	C4	C4	c_3	c_1
12-16	3(-4)	4 - c ₁ - e	f_4	C4	c_3	c_3	c_1
17-20	5	b - g ₂ - f	f_3	c_3	c_2	c_2	\mathbf{g}_2
21-23	6	b - c1 - F	f_4	C4	c_3	c_3	c_1
24	7	4 - g ₂ - g	C4	c_3	c_2	c_2	g_2
25-26	7	4 - g ₂ - g	C4	c_3	c_3	c_2	\mathbf{g}_2
27	7	4 - g ₂ - g	C4	c_2	c_3	c_2	g_2
28-30	8	4 - c ₁ - G	f_4	\mathbf{c}_3	C4	c_3	c_1

Table 1: Giovanni Pierluigi da Palestrina, *Delle madrigali spirituali a cinque voci libro secondo* (1594), modal organisation and clefs⁸

Lasso's collection is an incomplete modal cycle (table 2). Mode 8 is lacking altogether. Similar to Palestrina's madrigals ending on E, madrigals 9-12 display ranges that are more authentic than plagal and thus would be linked to mode 3, although no modal ascription by the composer is documented. Compared to Palestrina's collection, a peculiarity of the *Lagrime* lies in the fact that each mode is associated with two tonal types. Seven madrigals out of the twenty end on an irregular final, which corresponds with the upper fifth of the regular final, except in modes 3(-4), where it is the upper fourth. The motet *Vide homo* cannot be assigned to any mode, either on the basis of its voice ranges or cadential patterns.

⁷ Bernhard Meier, *The Modes of Classical Vocal Polyphony, Described According to the Sources*, English translation by Ellen S. Beebe, New York, Broude, 1988, pp. 165-169 and pp. 226-232.

⁸ Tonal types are described according to Harold S. Powers, "Tonal Types" pp. 428-470: \(\daggera \) and \(\beta \) designate *cantus durus* and *cantus mollis* respectively; \(\mathbf{c}_1\) and \(\mathbf{g}_2\) refer to *chiavi naturali* and *chiavette*. Finals are indicated according to their exact pitch in the bass, which in the sixteenth century is often one octave lower in plagal than in authentic modes (Frans Wiering, *The Language of the Modes: Studies in the History of Polyphonic Music*, New York, London, Routledge, 2001, p. 94).

⁹ For a detailed comment, see Anne-Emmanuelle Ceulemans, "Lassus, Meier, Powers", pp. 106-107.

Madrigals nos.	Mode	Tonal type	Clefs			
C		71	В	TI - TII	AI - AII	SI-SII
1-2	1	$ abla - c_1 - d$	f_4	C4	c_3	c_1
3	1	4 - c ₁ - A	f_4	C4	\mathbf{c}_3	c_1
4	1	$a - c_1 - d$	f_4	C4	c_3	c_1
5-6	2	b - c ₁ - G	f_4	C4	c_3	c_1
7	2	$b - c_1 - d$	f_4	C4	c_3	c_1
8	2	b - c ₁ - G	f_4	C4	c_3	c_1
9	3(-4)	$a - c_1 - A$	f_4	C4	c_3	c_1
10	3(-4)	4 - c ₁ - E	f_4	C4	c_3	\mathbf{c}_1
11	3(-4)	4 - c ₁ - A	f_4	C4	c_3	c_1
12	3(-4)	4 - c ₁ - E	f_4	C4	c_3	c_1
13	5	b - g ₂ - f	f_3	\mathbf{c}_3	c_2	g_2
14	5	$b - g_2 - c$	f_3	\mathbf{c}_3	\mathbf{c}_2	\mathbf{g}_2
15	5	b - g ₂ - f	f_3	c_3	c_2	g_2
16	6	$b - c_1 - F$	f_4	C4	c_3	c_1
17	6	$b - c_1 - c$	f_4	C4	\mathbf{c}_3	\mathbf{c}_1
18	6	b - c ₁ - F	f_4	C4	c_3	\mathbf{c}_1
19	7	4 - g ₂ - d	f_3	\mathbf{c}_3	c_2	g_2
20	7	4 - g ₂ - g	f_3	c_3	c_2	g_2
21	?	4 - g ₂ - A	f_3	c_3	c_2	g_2

Table 2: Orlando di Lasso, Lagrime di San Pietro (1595), modal organisation and clefs

Theoretical Framework¹⁰

Modes and Cadences

The status of the traditional ecclesiastical system of eight modes in Renaissance polyphony has been extensively debated by scholars for several decades now. Modes have been treated with respect to music theory and compositional practice in two opposing ways. According to Meier, modes constitute an *a priori* compositional system comparable to harmonic tonality in later centuries¹¹. Powers in contrast points out their multifaceted and often inconsistent explanations by music theorists of the sixteenth century. In his opinion, "[s]uch a fluid state of affairs in musical doctrine does not inspire much confidence in the theoretical status of 'modality' as a precompositional universal for sixteenth-century polyphony" Modes, he argues, should rather be

¹⁰ For a more detailed analysis of the theoretical premises that have guided modal analyses of Renaissance polyphony since the 1970s, see Anne-Emmanuelle Ceulemans, "Lassus, Meier, Powers", pp. 85-110.

¹¹ See especially Bernhard Meier, "Alte und neue Tonarten: Wesen und Bedeutung", *Renaissance-muziek 1400-1600: Donum natalicium René Bernard Lenaerts*, Jozef Robins (ed.), Leuven, Katholieke Universiteit, Seminarie voor muziekwetenschap, 1969, pp. 157-168; *idem*, *The Modes*.

¹² Harold S. Powers, "Tonal Types", p. 434. See also *idem*, "Is Mode Real? Pietro Aron, the Octenary System, and Polyphony", *Basler Jahrbuch für historische Musikpraxis*, 16 (1992), pp. 9-52 and *idem*, "Anomalous Modalities", *Orlando di Lasso in der Musikgeschichte*, München, Bayerische Akademie der Wissenschaften, 1996, pp. 221-242.

regarded as an *a posteriori* classification system of polyphonic works. Powers' radical questioning of Meier's ideas however has caused some push back¹³. Is it really tenable to claim that all polyphonic works from the sixteenth century were composed irrespective of any modal considerations whatsoever?

To answer this question, an inductive approach to the repertoire by way of serial quantification of musical patterns recognised as modal markers in sixteenth century theory may offer interesting insights. Seriation is defined by Jean-Jacques Nattiez as the integration of (artistic or linguistic) phenomena within a series of comparable phenomena, in order to assign them a plausible meaning¹⁴. I will attempt to apply this method here, not to reconstruct a theory of the modes, which is an unfeasible goal, but rather to assess how closely compositional practices reflect contemporary theoretical models¹⁵.

The analyses below concentrate on one specific parameter, the cadence, which most Renaissance theorists consider to be an important modal indicator, notwithstanding possible disagreement about its application¹⁶. However, as the function of the cadence in sixteenth century polyphony is not confined to modal expression, it may be worthwhile to outline its manifold purposes:

- 1. Closure. A primary function of the cadence is to punctuate the contrapuntal flow by means of regular harmonic and rhythmic closures or caesuras;
- 2. Modal identification. As each mode favours specific cadential degrees, cadences create *de facto* modal hierarchies;
- 3. Reflecting the text's syntax. Cadences translate syntactic articulations into music and therefore can be compared to punctuation¹⁷;
- 4. Emphasising the text's meaning. Cadences enhance word painting and, in this way, play a semantic role.
- ¹³ See Marco Mangani and Daniele Sabaino, "Tonal Types and Modal Attributions in Late Renaissance Polyphony: New Observations", *Acta musicologica*, 80 (2008), pp. 231-250, especially p. 232; Kyle Adams, "Mode is Real: A Re-examination of Polyphonic Modality", *Theoria*, 19 (2012), pp. 32-64; Gregory Barnett, "Sixteenth-Century Modal Theory and Renaissance Ideologies: A Response to Kyle Adams", *Theoria*, 20 (2013), pp. 165-183; Kyle Adams, "Music Theory and its Purposes: A Response to Gregory Barnett", *Theoria*, 20 (2013), pp. 185-194.
- ¹⁴ Jean-Jacques Nattiez, *Music and Discourse: Toward a Semiology of Music*, English translation by Carolyn Abbate, Princeton (N.J.), Princeton University Press, 1990, p. 230.
- ¹⁵ On inductive analysis and its inability to lead to a general theory, see for example Nicolas Ruwer, "Théorie et méthodes dans les études musicales: quelques remarques rétrospectives et préliminaires", *Musique en jeu*, 17 (1975), pp. 11-36, especially p. 14.
- ¹⁶ A summary of cadential structures in sixteenth century (modal) polyphony is available in Bernhard Meier, *The Modes*, pp. 89-101. For a detailed study of the cadence in Renaissance music theory, see Elisabeth Schwind, *Kadenz und Kontrapunkt: Zur Kompositionslehre der klassischen Vokalpolyphonie*, Hildesheim, Georg Olms, 2009.
- ¹⁷ For example, see Gallus Dressler, *Praecepta musicae poëticae*, ms. 1563-1564, Olivier Trachier and Simonne Chevalier (eds.), Paris, Tours, Minerve, CESR, 2001, chap. IX, p. 154; Gioseffo Zarlino, *Le istitutioni harmoniche*, Venice, The Author, 1558, p. 221. The historical differences between the cadence seen as a stereotyped contrapuntal succession, i.e. as a technical configuration, and as a progression whose function is to mark a conclusion, i.e. as a syntactical device, are analysed in Caleb Mutch, *Studies in the History of the Cadence*, PhD dissertation, New York, Columbia University, 2015.

Cadential analysis of sixteenth century repertoire is challenging, as not all four functions need to be fulfilled at the same time. In some instances, they are uncoupled and even contradict each other, or to use Leonard B. Meyer's wording, are "noncongruent". Therefore, establishing a strict definition for distinguishing progressions that should be viewed as cadences is risky. On the other hand, a fascinating aspect of Renaissance counterpoint lies in the myriad ways cadences may be interrupted or altered, alternately fulfilling a contrapuntal, modal, syntactic or expressive role. This variety, however, makes any systematic cadential analysis of large collections according to objective criteria difficult, as a feeling for closure may vary among singers or listeners. A few examples will illustrate the variety of cadential progressions encountered in Palestrina's *Madrigali spirituali* and may serve to clarify the criteria upon which my analyses are based.

In example 1, we can see an interrupted cadence (mm. 16-17) underlying the close of the canto. This cadence is immediately followed by what technically resembles a *clausula formalis* on D between the lower voices¹⁹. The rearticulated minim on D in the tenor (m. 17) acts as a suspension introducing a *clausula cantizans*, while the Eb in the bass, surely meant to express the word *morto*, can be analysed as an upper leading note within a *clausula tenorizans*. The resolution at the beginning of measure 18 however is dissonant with the alto and falls in the middle of a word in the quinto and the tenor. This progression is used for word painting and its relation to the text's syntax is restricted to the lowest voice. From a modal viewpoint, however, it is noteworthy, because it alters the mode's scalar organisation²⁰.

¹⁸ When the parameters that generate closure, defined as "the arrival at relative stability", act together in the articulation of the musical flow, Leonard B. Meyer says that they move congruently. When they counter each other, they are said to be noncongruent (Leonard B. Meyer, *Explaining Music*, Berkeley, University of California Press, 1973, p. 81). While Meyer's argument concerns tonal harmony, his typology is also applicable to Renaissance polyphony.

¹⁹ I.e. preceded by a suspension. In the following pages, Bernhard Meier's cadential terminology will be used as explained in *The Modes*, pp. 89-101.

²⁰ On the links between the Phrygian cadence and the mode's scalar organisation, see Christophe Guillotel-Nothmann, "Diatonic and Tonal Functions", section 4, in this volume.



Example 1: Figlio immortal (madrigal 1, mode 1), mm. 16-20²¹

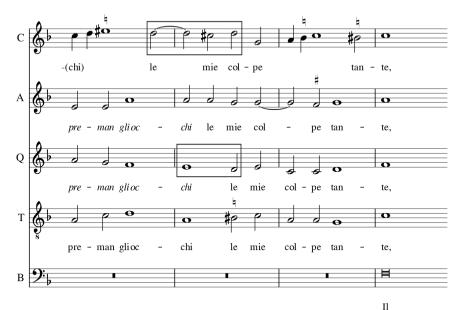
Example 2 shows a progression that might be understood as a *clausula simplex* between the upper voice (*clausula tenorizans*) and the tenor (*clausula cantizans*), to which Palestrina or his editor added a leading note. Through regular voice leading, three voices resolve on the final G. But in the absence of any rhythmic slowdown or syntactic articulation, this progression generates little sense of closure.

²¹ Following usual conventions, editorial additions are in italics.



Example 2: Dammi scala del ciel (madrigal 4, mode 1), mm. 25-28

In example 3, we see what looks like a *clausula formalis* whose *clausula bassizans* in the tenor part does not resolve on the expected note. It is similar to example 2 in that it falls within a verse (*Mi preman gli occhi le mie colpe tante*), independently of any syntactic articulation. Yet it is still quite perceptible. Possibly Palestrina meant to highlight the word *colpe*, as D is a somewhat unusual cadential degree in mode 5.



Example 3: Vello di Gedeon (madrigal 19, mode 5), mm. 19-22

A cadential figure that occurs quite often in Renaissance polyphony consists of what we today would call two triads, the first root being a fourth above or a fifth below the second. In tonal harmony, this progression corresponds with the half cadence (I-V) or the plagal cadence (IV-I), but it is hardly commented upon in sixteenth-century treatises and has led to various terminological suggestions by modern scholars²². Meier acknowledged this cadence without defining it, except for the *clausula* in mi on E harmonised with an A in the bass (example 4)²³.

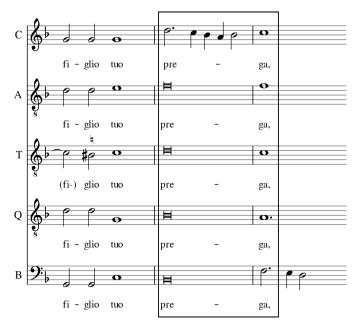
²² For example, Meier calls them half cadences, regardless of the degree on which they occur (Bernhard Meier, *The Modes*, see e.g. p. 131, 141, 143, etc.). Stefano La Via, however, draws a difference between plagal cadences and half cadences (Stefano La Via, "'Natura delle cadenze' e 'natura contraria delli modi': punti di convergenza fra teoria e prassi nel madrigale cinquecentesco", *Il saggiatore musicale*, 4 (1997), pp. 5-51, especially p. 24); Seth J. Colluzzi coined the term "Phrygian quasi cadence" to designate the IV-I progression on E typically used in the second half of the sixteenth century (Seth J. Colluzzi, "Black Sheep: The Phrygian Mode and a Misplaced Madrigal in Marenzio's Seventh Book (1595)", *The Journal of Musicology*, 30/2 (2013), pp. 129-179, especially p.136).

²³ Bernhard Meier, *The Modes*, p. 96-97.



Example 4: Clausula in mi on E harmonised in the bass on A

As in other late sixteenth-century music, this figure is absent in the Palestrina and Lasso cycles, at least on A in *cantus durus* (or on D in *cantus mollis*). On the other hand, many cadences implying a descending fourth are to be found on other pitches. Some of them coincide with a sixth-octave (6-8) progression between the upper voices and cast doubt on the actual cadential degree. In example 5, for instance, the bass jumps from B_b to F, while the cantus and the tenor display a 6-8 progression on C. This progression certainly entails some sense of closure, but is the cadential note F or C?



Example 5: E se'l pensier (madrigal 7, mode 2), mm. 33-35

Before the middle of the sixteenth century a straightforward answer to this question might not exist. In the works analysed in this article however, the intended cadential degree definitely corresponds to the root of the last sonority. This can be deduced from several madrigals closing on a IV-I cadence, as illustrated in example 6, which shows the last measures of a first mode piece (6-8 progression on D between cantus and tenor; C-G leap in the bass). G is the final of mode 1 in *cantus mollis*. It clearly

operates as the goal of the cadence at the end of this madrigal, regardless of the suspension due to the *supplementum* in the quinto voice (measure 45)²⁴.



Example 6: Dammi scala del ciel (madrigal 4, mode 1), mm. 43-46

Since these cadences appear on various scale degrees, it does not seem appropriate to draw distinctions between half cadences, plagal cadences and other cadence types based on a descending fourth, as they would bring about anachronistic connotations related to tonal harmony. By convention, then, I will call all of these cadences "plagal" in my subsequent analyses²⁵.

Table 3 below includes a wide array of progressions, in keeping with the scope of this article that focuses on modal treatment. Except for cadential-like constructions that fall in the middle of a word and do not introduce any rhythmic, harmonic or syntactic articulation, all 6-8 and plagal progressions are taken into account, even when the resolution is deceptive or when the cadential degree does not correspond to the root of a chord. Under this criterion, the cadence of example 1 above is incorporated into the data because of the rhythmic slowdown on *morto* in the bass, but not the progressions of examples 2 and 3.

²⁴ See also *E se nel foco* (madrigal 13), mm. 47-48; *Vincitrice* (madrigal 14), mm. 44-45; *Città di Dio* (madrigal 15), mm. 50-51 and *Santo Altare* (madrigal 16), mm. 53-54, which all have a 6-8 progression on B in the upper voices and a root on E in the bass. *Specchio che fosti* (madrigal 18), mm. 49-50, has a 6-8 progression on C in the upper voices and a root on F in the bass.

²⁵ On the historical origin of the name "plagal cadence", which is much later than the sixteenth century, see Caleb Mutch, "Blainville's New Mode, or, How the Plagal Cadence Came to be 'Plagal'", *Eighteenth-Century Music*, 12/1 (2015), pp. 69-90.

In this context, the concept of cadence is understood in a very flexible sense, synonymous with caesura, however strong or slight it may be. This methodological choice is motivated by the desire to gain a detailed insight into the overall treatment of the contrapuntal microstructure, and by the belief that cadential-like progressions that are not supported by strong textual articulations might nevertheless contribute to the affirmation of a mode²⁶.

Cadences and Versification

In addition to the fourfold function of the cadence described above, a further question should be considered in regard to versification. Do cadences highlight or hide the verses and overall poetic form? The answer to this may in theory depend on the poetry itself. If the verse structure strictly follows the syntactic organisation of the sentences, the placement of cadences should be unambiguous. Conversely, poetic enjambments may lead to what might be called musical enjambments, i.e. the lack of a cadence at the end of a verse. Of course, the relation of verse and musical structure is rarely so regular; a composer is free to use cadences in order to emphasise or to conceal the verse structure, as he wishes.

In the collections considered in this study, Palestrina's and Lasso's usages are quite different. Generally speaking, Palestrina's treatment of the *ottave rime* is more flexible than Lasso's. The Italian composer is not afraid of altering verse structure and syllabic organisation. A typical case is given above in example 2, where the word "frale" is changed into "fragile" in the canto voice, adding a syllable to the original endecasillabo ("A questo legno mio frale e ripieno"). Such an irregularity might be an editorial mistake, but this hypothesis does not seem probable from a musical viewpoint. At any rate, the examples below cannot be explained away in this way. Their polyphonic setting reveals noticeable independence from the metrical organisation of the poems.

Under normal circumstances, every verse in the music of both Palestrina and Lasso is subjected to its own contrapuntal treatment and closes with a cadence. Textual repetitions occur only within a single verse. Palestrina, however, departs from this norm more often than Lasso. In his *Madrigali spirituali*, thirty musical enjambments have been identified in over 240 verses, as against three occurrences in the 160 verses of Lasso's *Lagrime*²⁷. Even in case of poetic enjambment, Lasso mostly highlights the end of the verse by means of a cadence. This trend is evident from the outset of the

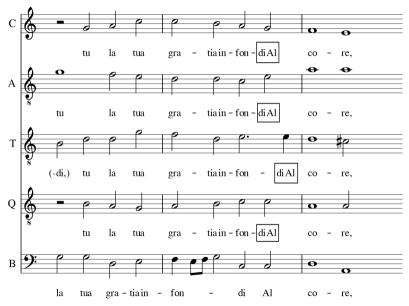
²⁶ In other contexts, a stricter definition of the cadence, that implies both a textual and musical caesura, might be preferable. See for example Marco Mangani, "Proposta di un metodo analitico per l'analisi delle forme minori tra Cinque e Seicento", *Analitica*, 2/1 (2001), http://www.gatm.it/analitica/numeri/volume2/n1/index.htm, accessed 20 June 2019; *idem*, "Segmenti polifonici e frasi musicali nel *Primo libro delle villanelle* di Luca Marenzio", *Miscellanea Marenziana*, Maria Teresa Rosa Barezzani and Antonio Delfino (eds.), Pisa, ETS, 2007, pp. 497-532.

²⁷ Lagrime di San Pietro, Ogn'occhio (madrigal 7), m. 3; Chi ad una ad una (madrigal 9), mm. 13 and 20.

first madrigal. In the verses "Il magnifico Pietro, che giurato | Havea tra mille lance, e mille spade", both the words "giurato" and "Havea" bear a cadential progression.

Palestrina furthermore tends to blur the verse structure by means of textual repetitions across two verses. In *Al fin* (madrigal 29), he includes the first word of the second verse in the repetition of the first verse ("*Al fin, Madre di Dio che né più bella* | Cosa")²⁸. In the first two madrigals of his collection, he even repeats the last two verses as a whole, a practice not found in Lasso's music.

Sometimes, Palestrina counteracts the metrical organisation of the poems by merging the last syllable of one verse with the first syllable of the next one. In example 7, all voices except the bass do this on "di_Al" ("E tu Signor, tu la tua gratia infondi | Al core, e com'al messaggier superno")²⁹.



Example 7: E tu Signor (madrigal 30, mode 8), mm. 6-8

Even when a cadence marks the end of a verse, Palestrina sometimes obscures the poetic articulation. In example 8a, a *clausula* in *mi* has its *clausula tenorizans* in one verse, and its *clausula cantizans* in the next one ("*Desio de' colli eterni, ed immortale* | *Arca di pace lieta et pretiosa*"). It is preceded by a plagal cadence on A that coincides with the verse end in three voices. In example 8b, the verse end is announced

²⁸ See also Giovanni Pierluigi da Palestrina, *Delli madrigali spirituali*, *Dammi vermiglia Rosa* (madrigal 6), verse 1-2 ("*Dammi, vermiglia Rosa e bianco e puro* | *Giglio*").

²⁹ Coattino's edition clearly suggests a dieresis in the bass. However, this might be due to difficult text placement in case of syneresis. Similar examples of syneresis across two verses are to be found in *Novella Aurora* (madrigal 20), m. 4; *E dal letto* (madrigal 22), mm. 24-25; *E tu Signor* (madrigal 30), m. 7.

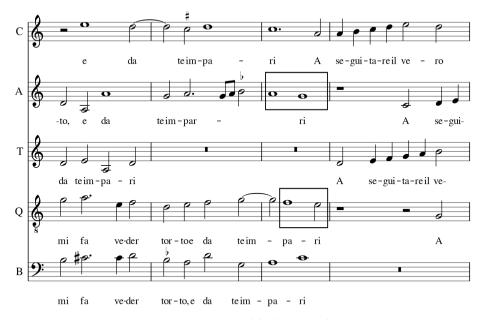
by an "evaporated" *clausula formalis* tending towards F, a resolution that fails altogether ("Che mi fa veder torto e da te impari | A seguitare il vero et fuggir l'ombra"). Compared to Palestrina's Madrigali spirituali, Lasso's Lagrime di San Pietro show a much simpler treatment of verse structure. The metrical organisation of the verses is never altered and complex verse overlapping as in example 8 is used sparingly³¹.



Example 8a: Vincitrice (madrigal 14, mode 3-4), mm. 24-27

³⁰ Anthony Newcomb defines the evaporated cadence as a "cadential gesture in which some of the voices taking part in a phrase drop out before the tonal goal of the cadence in reached". (Anthony Newcomb, *The Madrigal in Ferrara: 1579-1597*, Princeton (N.J.), Princeton University Press, 1980, p. 120.)

³¹ An excellent example of this is in *Qual a l'incontro* (madrigal 4), mm. 16-17, where a *clausula cantizans* in canto I is set to words of another verse than the *clausula tenorizans* in tenor I. It goes without saying that the divergent metrical treatment by Palestrina and Lasso explained above is not specific to the collections studied in this article. Anyone familiar with these composers will recognise characteristics to be found in numerous other works.



Example 8b: E con i raggi (madrigal 27, mode 7), mm. 15-18

Overview of Cadential Usage in Palestrina's *Delle Madrigali Spirituali* a Cinque Voci Libro Secondo and Lasso's Lagrime di San Pietro

Table 3 offers a systematic overview of cadential usage in Palestrina and Lasso's cycles³². For each mode, histograms are presented according to two criteria: the position and the form of the cadences. In view of the ambiguous situations described above, the following typologies have been used:

Positions:

- End of a strophe: the very last cadence of each madrigal;
- End of a verse: the very last cadence whose resolution falls within the verse; when the cadential voices belong to two different verses, the position of the *clausula* cantizans is decisive³³;
- Internal cadences.

³² In total, 455 cadential progressions have been identified in Palestrina's cycle and 306 in Lasso's, not including the motet *Vide homo* whose mode is undetermined.

³³ According to this criterion, in example 8a, the last cadence on "*Desio de' colli eterni, ed immortale*" corresponds with the plagal progression of mm. 25-26.

Forms:

• Clausula formalis: 6-8 progression with suspension, possibly with a deceptive resolution:

- Clausula simplex: 6-8 progression without suspension, possibly with a deceptive resolution:
- Plagal cadence: all triadic progressions falling by a fourth;
- Irregular cadences.

To allow serial treatment and comparative analysis, these typologies inevitably obscure the formal diversity of the cadences and their possible semantic role. For example, among the contrapuntal types, *cadenze fuggite* are put on the same level as regular cadences, under the assumption that their irregular resolution does not prevent them from acting as effective modal markers. The overall presentation of all cadences within one piece also hides the temporal unfolding of polyphony and its modal expression. For this reason, table 3 offers only a partial view of cadential treatment, but nevertheless displays interesting tendencies.

All the madrigals by Palestrina and Lasso show a clear hierarchy of cadential scale degrees. It is noteworthy that both collections share several tendencies. In general, authentic and plagal modes follow similar patterns. Modes 1-2 and 5-6 stand out by a strong polarisation on the final and its upper fifth or lower fourth. In modes 7-8, both Palestrina and Lasso emphasise the upper fourth (or lower fifth) instead of the upper fifth of the final. Mode 3(-4) stands apart. In Palestrina's collection, both the final and its upper fourth are important, but in Lasso's collection, the final plays a weaker role³⁴. In line with Christophe Guillotel-Nothmann's distinction between diatonic and modal hierarchies, it could be argued that in mode 3(-4), Palestrina favors the mode and Lasso the diatonic scale³⁵.

Regarding the musical form of the cadences, both in Palestrina's and Lasso's collections, the main type is the *clausula formalis* (70.3% in Palestrina; 54.2% in Lasso). Some stylistic differences are noteworthy. For example, compared to Palestrina, Lasso more often chooses the *clausula simplex* (18.4% in Palestrina; 27.8% in Lasso) and the plagal cadence (10.3% in Palestrina; 14.4% in Lasso), whereas his use of the *clausula formalis* with upper leading note, either on E or on A, is scarce, even in mode 3(-4) (6.4% in Palestrina; 1.6% in Lasso). These numbers might not be relevant for these composers' late style in a general way, but the overall tendency is that Palestrina favours the strongest cadential type – the *clausula formalis* – more than Lasso.

³⁴ This tendency is also to be observed in Lasso's *Penitential Psalms* (1584). See Anne-Emmanuelle Ceulemans, "Lassus, Meier, Powers", p. 98.

³⁵ See Christophe Guillotel-Nothmann, "Diatonic and Tonal Functions", in this volume.

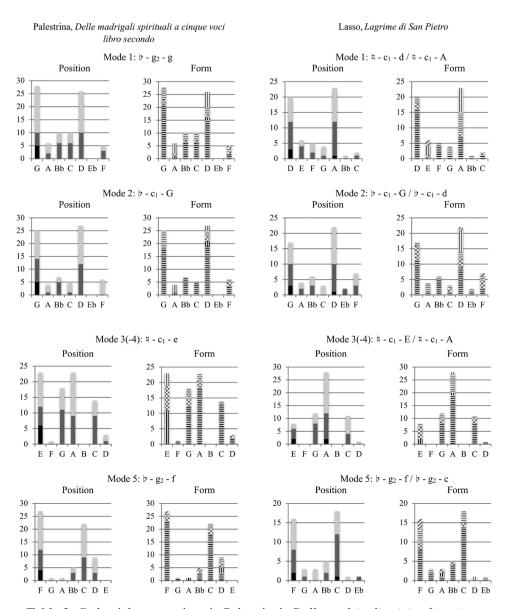


Table 3: Cadential progressions in Palestrina's *Delle madrigali spirituali a cinque voci libro secondo* (1594) and in Lasso's *Lagrime di San Pietro* (1595)

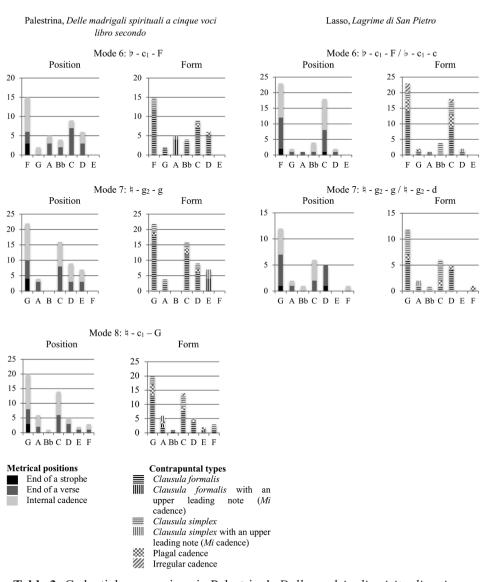


Table 3: Cadential progressions in Palestrina's *Delle madrigali spirituali a cinque voci libro secondo* (1594) and in Lasso's *Lagrime di San Pietro* (1595) (continued)

Stefano La Via suggests that different cadential types may serve to underline the opposition between authentic and plagal modes³⁶. Within the works analysed here, however, and according to the musical categories described above, no strong difference emerges except perhaps for a more intensive use of the plagal cadence in the plagal modes of Lasso's cycle (table 4). Nevertheless, this observation might be a matter of coincidence and thus cannot be presumed to be a significant stylistic trait on the sole basis of this analysis.

	Palestrina		La	SSO
Modes	1-5-7	2-6-8	1-5-7	2-6
clausula formalis, ascending leading note	65.4%	66.3%	51.9%	49.5%
clausula simplex, ascending leading note	13.9%	14.5%	23.7%	18.0%
plagal cadence	8.7%	8.4%	10.4%	18.9%
cl. formalis, descending leading note	4.3%	5.4%	0.7%	0.9%
cl. simplex, descending leading note	6.3%	4.8%	9.6%	7.2%
irregular types	1.4%	0.6%	3.7%	5.4%

Table 4: Distribution of cadential types among the authentic and plagal modes

Comparison with Meier's and Powers' Modal Views

There have been lively debates over the past few decades by scholars concerning the relation of the modes as described in sixteenth-century theory to coterminous polyphonic practices of composers. To what extend can we rely on sixteenth-century treatises to analyse polyphonic compositions? This question lies at the core of the much-discussed controversy between Meier and Powers.

In fact, both musicologists take a somewhat one-sided and dogmatic position regarding sixteenth-century modes. Meier overplays the universality of modes for composers, while Powers underplays their potential structuring role in practice. Even if Powers is right to denounce Meier's view of the modes as all-embracing categories in musical composition of the sixteenth century, it still remains possible that the modes served as *a priori* references in specific instances without however constituting a universal, all-embracing system. This is the present author's opinion.

As a matter of fact, table 3 undeniably shows that Palestrina and Lasso's collections correspond rather well, albeit not completely, to the theoretical prescriptions of Meier's favourite theorists, Pietro Pontio and Gallus Dressler³⁷. Pontio's case is especially interesting, as in 1592, this theorist contributed to an anthology of vesper psalms edited by Giammatteo Asola and dedicated to Palestrina³⁸. How do his theoretical recommendations relate to the practice of a composer he seems to have admired?

³⁶ Stefano La Via, "Natura delle cadenze", p. 17.

³⁷ Gallus Dressler, *Praecepta musicae poëticae*, chap. IX, pp. 154-160; Pietro Pontio, *Ragionamento di musica*, Parma, Erasmo Viotto, 1588, pp. 99-121.

³⁸ Sacra omnium solemnitatum psalmodia vespertina cum cantico B. Virginis, Venice, Amadino, 1592 (RISM15923).

Pontio's description of the cadential degrees to be used in each mode is shown in table 5³⁹. The preferred cadential degrees of each mode recommended by Pontio match Palestrina's usage in the *Madrigali spirituali* quite closely. The most significant difference is Palestrina's preferred use of C over D, not only in mode 8, but also in mode 7. For this reason, it seems reasonable to conclude that Pontio and Palestrina had a similar – albeit not identical – view of cadential hierarchies for each mode.

	Main and final cadences	Other cadences of varying		
		importance		
Modes 1-2	D - A	F - G - C		
Modes 3-4	$\mathbf{E} - \mathbf{A}$	G - B - C		
Modes 5-6	F - C	A - D - G		
Modes 7-8	G - D (or C for mode 8)	C - E - A - F		

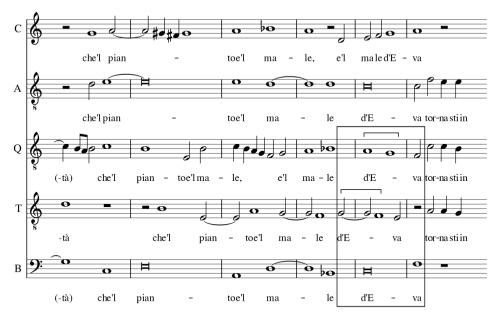
Table 5: Hierarchy of cadential degrees according to Pietro Pontio

Table 3 also shows that Palestrina's and Lasso's practices coincide rather well. Notwithstanding Powers' argument, there does not seem to be a valid reason to deny that their madrigal cycles were composed according to some kind of common, *a priori* modal framework. This does not imply that the same framework is to be found in every polyphonic piece from the sixteenth century. *A priori* is not synonymous with universal.

The *a priori* status of modes in Palestrina's and Lasso's cycles can furthermore be demonstrated in musical rhetoric. Meier devoted many pages to the modal aspects of word painting⁴⁰. What the masses of data he collected show is that modal anomalies used for rhetorical purposes do not destabilise modal identity but emphasise its importance in musical thinking of the sixteenth century. Example 9 may serve to demonstrate this viewpoint. It shows a *clausula formalis* on F, a highly irregular cadential degree in mode 3 and 4, which is undoubtedly meant to reflect the words "*il male d'Eva*". This anomaly is neither a mistake nor a compositional fault, but rather a license used to enhance the semantic power of counterpoint. However, the rhetorical impact is only effective if there is a very explicit modal way of thinking that is shared between the listeners and the composer. The cadence can be understood as abnormal in mode 3-4 only if other cadences are considered regular. Modal rhetoric therefore presupposes an *a priori* modal conception of music.

³⁹ Pietro Pontio, *Ragionamento di musica*, pp. 99-121. Only cadences for madrigals in untransposed modes are mentioned.

⁴⁰ Bernhard Meier, *The Modes*, pp. 235-421.



Example 9: Vincitrice (madrigal 14, mode 3-4), mm. 14-19

Conclusion

As Powers rightly observes, Renaissance modal theory is manifold, and no treatise should be considered as authoritative and complete for the interpretation of all modal patterns observed in this music. This may sound like a gentle if somewhat abstract reminder, but it is not. In Lasso's *Lagrime* cycle, the motet *Vide homo* cannot be easily ascribed to any mode. Various hypotheses have been made to nevertheless attribute a mode to this piece⁴¹, but nothing proves that Lasso intended it to be linked to a theoretically formalised mode. On the contrary, *Vide homo* shows that in sixteenth century polyphony, modes may be a contrapuntal 'by-product' and possess no universal significance⁴².

⁴¹ Bernhard Meier, "Lassus", *Encyclopédie de la musique*, François Michel (ed.), Paris, Fasquelle, 1958-1961, vol. 3, pp. 35-40, especially pp. 37-38; Harold S. Powers, "Tonal Types", p. 448; Siegfried Gissel, "Die Tonarten der *Lagrime*", pp. 31-32; Frans Wiering, *The Language of the Modes*, pp. 281-282; Alexander J. Fisher, "'Per mia Particolare Devotione'", p. 210; Robert G. Luoma, *Music, Mode, and Words*, p. 169.

⁴² For a detailed analysis of *Vide homo*, see Anne-Emmanuelle Ceulemans, "Lassus, Meier, Powers", pp. 106-107. While this motet is quite exceptional within Lasso's output, other composers have written more works that cannot be easily categorised within the modal system. See for example Jessie Ann Owens, "Modes in the Madrigals of Cipriano de Rore", *Altro Polo. Essays on Italian Music in the Cinquecento*, Richard Charteris (ed.), University of Sydney, pp. 1-15.

Nevertheless, when a theoretical text on modes matches compositional practices, there is no reason to negate the existence of similar views between the theorist and the composer. Moreover, when several works by different composers, trained in different environments, share quite explicit modal tendencies, it is reasonable to conclude that they are based on common presumptions.

To overcome the temptation of hasty generalisations, an inductive approach to this music is helpful. According to this working method, the serial analyses offered above suggest interesting correspondences between Palestrina's and Lasso's last modal cycles and their cadential treatments, as well as relevant connections with contemporary theorists such as Gallus Dressler and Pietro Pontio. They confirm the reality of a common, *a priori*, but not universal view of the modes.

Bibliography

- Adams, Kyle, "Mode is Real: A Re-examination of Polyphonic Modality", *Theoria*, 19 (2012), pp. 32-64.
- Adams, Kyle, "Music Theory and its Purposes: A Response to Gregory Barnett", *Theoria*, 20 (2013), pp. 185-194.
- Baini, Giuseppe, *Memorie storico-critiche della vita e delle opere di Giovanni Pierluigi da Palestrina*, Roma, Società tipografica, 1828.
- Barnett, Gregory, "Sixteenth-Century Modal Theory and Renaissance Ideologies: A Response to Kyle Adams", *Theoria*, 20 (2013), pp. 165-183.
- Bongiovanni, Carmela, "Tansillo in musica: il caso delle *Lagrime di san Pietro*", *Fonti musicali italiane*, 11 (2006), pp. 7-65.
- Brumana, Biancamaria, "Les musiques pour la naissance d'un grand-duc et le début du mécénat musical de Christine de Lorraine", *Symphonies lorraines: compositeurs, exécutants, destinataires*, Yves Ferraton (ed.), Paris, Klincksieck, 1998, pp. 281-293.
- Cametti, Alberto, *Palestrina*, Milano, Bottega di poesia, 1925. [Reprint Roma, Edizioni Torre d'Orfeo, 1994.]
- CEULEMANS, Anne-Emmanuelle, "Lassus, Meier, Powers: la réalité des modes sous la loupe", *Revue belge de musicologie*, 72 (2018), pp. 85-110. [Special issue "Le plus que divin Orlande", Henri Vanhulst (ed.) published after an international conference in Mons, 10 July 2015.]
- Colluzzi, Seth J., "Black Sheep: The Phrygian Mode and a Misplaced Madrigal in Marenzio's Seventh Book (1595)", *The Journal of Musicology*, 30/2 (2013), pp. 129-179.
- Dressler, Gallus, *Praecepta musicae poëticae*, ms. 1563-1564, Olivier Trachier and Simonne Chevalier (eds.), Paris, Tours, Minerve, CESR, 2001.
- Fisher, Alexander J., "'Per mia Particolare Devotione': Orlando di Lasso's *Lagrime di San Pietro* and Catholic Spirituality in Counter-Reformation Munich", *Journal of the Royal Musical Association*, 132 (2007), pp. 167-220.
- Gissel, Siegfried, "Die Tonarten der *Lagrime di San Pietro* von Orlando di Lasso", *Musica disciplina*, 47 (1993), pp. 5-33.

- Guillotel-Nothmann, Christophe, "Diatonic and Tonal Function in the Polyphonic Virelai of the 14th Century", in this volume.
- JENSCH, Fritz, "Orlando di Lassos *Lagrime di San Pietro* und ihr Text", *Musik in Bayern*, 32 (1986), pp. 43-62.
- La Via, Stefano, "'Natura delle cadenze' e 'natura contraria delli modi': punti di convergenza fra teoria e prassi nel madrigale cinquecentesco", *Il saggiatore musicale*, 4 (1997), pp. 5-51.
- Lasso, Orlando di, *Lagrime di San Pietro*, Fritz Jensch (ed.), Kassel, Bärenreiter, 1989. Lasso, Orlando di, *Psalmi Davidis poenitentiales*, München, Adam Berg, 1584.
- Luoma, Robert G., *Music, Mode, and Words in Orlando di Lasso's Last Works*, Lewiston (N.Y.), Edwin Mellen Press, 1989.
- Mangani, Marco, "Proposta di un metodo analitico per l'analisi delle forme minori tra Cinque e Seicento", *Analitica*, 2/1 (2001), http://www.gatm.it/analitica/numeri/volume2/n1/index.htm, accessed, 20 June 2019.
- Mangani, Marco, "Segmenti polifonici e frasi musicali nel *Primo libro delle villanelle* di Luca Marenzio", *Miscellanea Marenziana*, Maria Teresa Rosa Barezzani and Antonio Delfino (eds.), Pisa, ETS, 2007, pp. 497-532.
- Mangani, Marco and Sabaino, Daniele, "Tonal Types and Modal Attributions in Late Renaissance Polyphony: New Observations", *Acta musicologica*, 80 (2008), pp. 231-250.
- MEIER, Bernhard, "Alte und neue Tonarten: Wesen und Bedeutung", *Renaissance-muziek 1400-1600: Donum natalicium René Bernard Lenaerts*, Jozef Robins (ed.), Leuven, Katholieke Universiteit, Seminarie voor muziekwetenschap, 1969, pp. 157-168.
- MEIER, Bernhard, "Lassus", *Encyclopédie de la musique*, François MICHEL (ed.), Paris, Fasquelle, 1958-1961, vol. 3, pp. 35-40.
- Meier, Bernhard, *The Modes of Classical Vocal Polyphony, Described According to the Sources*, English translation by Ellen S. Beebe, New York, Broude, 1988.
- MEYER, Leonard B., Explaining Music, Berkeley, University of California Press, 1973.
- Mutch, Caleb, "Blainville's New Mode, or, How the Plagal Cadence Came to Be 'Plagal'", *Eighteenth-Century Music*, 12/1 (2015), pp. 69-90.
- Mutch, Caleb, *Studies in the History of the Cadence*, PhD dissertation, New York, Columbia University, 2015.
- Nattiez, Jean-Jacques, *Music and Discourse: Toward a Semiology of Music*, English translation by Carolyn Abbate, Princeton (N.J.), Princeton University Press, 1990.
- Newcomb, Anthony, *The Madrigal in Ferrara: 1579-1597*, Princeton (N.J.), Princeton University Press, 1980.
- Owens, Jessie Ann, "Modes in the Madrigals of Cipriano de Rore", *Altro Polo: Essays on Italian Music in the Cinquecento*, Richard Charteris (ed.), University of Sydney, 1990.
- Palestrina, Giovanni Pierluigi da, *Delli madrigali spirituali a cinque voci libro secondo*, Roma, Presso a Francesco Coattino, 1594.
- Palestrina, Giovanni Pierluigi da, *Il libro secondo dei madrigali spirituali a 5 voci. Priego alla B. Vergine*, Lino Bianchi (ed.), Roma, Istituto italiano per la storia della musica, 1957.

- Pontio, Pietro, Ragionamento di musica, Parma, Erasmo Viotto, 1588.
- Powers, Harold S., "Anomalous Modalities", *Orlando di Lasso in der Musikges-chichte*, München, Bayerische Akademie der Wissenschaften, 1996, pp. 221-242.
- Powers, Harold S., "Is Mode Real? Pietro Aron, the Octenary System, and Polyphony", *Basler Jahrbuch für historische Musikpraxis*, 16 (1992), pp. 9-52.
- Powers, Harold S., "Tonal Types and Modal Categories in Renaissance Polyphony", *Journal of the American Musicological Society*, 34 (1981), pp. 428-470.
- Ruwet, Nicolas, "Théorie et méthodes dans les études musicales: quelques remarques rétrospectives et préliminaires", *Musique en jeu*, 17 (1975), pp. 11-36.
- Sacra omnium solemnitatum psalmodia vespertina cum cantico B. Virginis, Venice, Amadino, 1592.
- Schwind, Elisabeth, *Kadenz und Kontrapunkt: Zur Kompositionslehre der klassischen Vokalpolyphonie*, Hildesheim, Georg Olms, 2009.
- Tansillo, Luigi, *Le lagrime di San Pietro*, Vico Equense, appresso Gioseppe Cacchij & Gio. Battista Cappello, 1585.
- Wiering, Frans, *The Language of the Modes: Studies in the History of Polyphonic Music*, New York, London, Routledge, 2001.
- ZARLINO, Gioseffo, Le istitutioni harmoniche, Venice, The Author, 1558.