

# ‘THESE ARE THE TONES COMMONLY USED’:<sup>1</sup> THE TONOS DE CANTO DE ÓRGANO IN SPANISH BAROQUE MUSIC THEORY

CRISTÓBAL L. GARCÍA GALLARDO AND PAUL MURPHY



*In the course of the seventeenth and eighteenth centuries, composers and music theorists moved away from the system of the eight ecclesiastical modes that had been elaborated by medieval theorists and was later applied to polyphonic music (including the varied system extended to twelve modes in the sixteenth century) towards modern bimodal tonality. Although several modal systems coexisted within this time period, a distinct variant of the eight modes, often known in modern scholarship as the church keys, developed as a practical solution to problems associated with the performance of psalms and other recited formulas (especially the Magnificat) in alternatim practice between the choir in plainchant and the organ. A scarcity of research on this topic within investigations of Spanish music prompts us to outline an introduction to a matter so crucial to music theory of the baroque period in Spain. Thus we present an overview of the treatment of the church keys or tones in Spanish treatises over a long period of two centuries, and focus briefly on particular contributions made by individual authors.*

An essential component of Spanish musical thought in the baroque period is the treatment of the modes as interpreted not only by theorists, but by composers as well. In the course of the seventeenth and eighteenth centuries these writers moved away from the system of the eight ecclesiastical modes that had been elaborated by medieval theorists and was later applied to polyphonic music (including the varied system extended to twelve modes in the sixteenth century) towards an eventual adoption of modern bimodal tonality. The scarcity of research on this point within investigations on Spanish music prompts us to outline an introduction to a matter so crucial to music theory of the baroque period in Spain.

Several modal systems did coexist in this period: the traditional eight-mode system; its extension to twelve; the first presentations of the bimodal system; the new system of eight *tonos de canto de órgano*, often known in modern scholarship as the church keys, which we address here; and certain idiosyncratic systems devised by individual authors. Such variety is not just a consequence of geographic and chronological diversity; indeed, at times it can be encountered within the same treatise. Despite this apparent confusion, certain common criteria of musical organization do rise to the surface when one carefully examines baroque treatises. Of course, these criteria are subject to changes relating to time and place within European baroque musical theory as a whole. But, as we will explain, Spanish authors from the second half of the seventeenth century and a large part of the eighteenth often apply the eight church keys to the polyphonic music of their time. Although Johann Mattheson refers to the church keys as an Italian phenomenon,<sup>2</sup> they were also used extensively in other European Catholic countries such as Spain, France, Austria and south Germany. They were used less frequently in Protestant Germanic countries, where the system of twelve

---

<crystal15@gmail.com>, <pmurphy@muhlenberg.edu>

1 ‘Estos son los tonos que comúnmente se usan’. Andrés Lorente, *El Por qué de la Música* (Alcalá de Henares: Nicolás de Xamares, 1672; facsimile edition, ed. José Vicente González Valle, Barcelona: Institución Milá y Fontanals, 2002), 565 and 615 respectively. All translations are ours.

2 Johann Mattheson, *Das neu-eröffnete Orchestre* (Hamburg: Benjamin Schillers Witwe, 1773), 60.



modes for polyphony was preferred, and least frequently in England, which quite early adopted the bimodal system.

This characteristically baroque system was known among Spanish theorists as the ‘tonos de canto de órgano’ (tones of polyphony), or, simply, the ‘tonos’, if in context reference was clearly being made to polyphony rather than to plainchant. Despite its prevalence and undeniable importance to an immense body of music, this system had received little attention until just a few decades ago. Recent studies include those of Gregory Barnett, Harold S. Powers and Michael R. Dodds, and among the more pioneering works, those of Almonte C. Howell, Walter Atcherson and Joel Lester.<sup>3</sup> In Spain particularly, the issue of the *tonos de canto de órgano* remains neglected in most musicological works, where they are often merely identified with the medieval modes, assimilated into modern tonality or simply omitted altogether. For instance, Thomas Schmitt examines the modes used in works by Gaspar Sanz, Francisco Guerau and Santiago de Murcia but places the eight traditional modes only in opposition to the major–minor system, thus treating these composers’ modal system essentially as transitional.<sup>4</sup> Likewise, the encyclopedic book of León Tello on Spanish music theory of the seventeenth and eighteenth centuries fails to acknowledge the uniqueness of this pitch system, often relegating it to the status of an intermediary stage in the evolution toward the modern bimodal system.<sup>5</sup> We have found the most complete and accurate investigation of the matter in two works by Bernardo Illari,<sup>6</sup> and would also mention our own recent work in this regard.<sup>7</sup>

Today, various terms are applied to this system of eight tones: Lester prefers ‘church keys’ (a term adopted later by other musicologists such as Barnett and, sometimes, Dodds), Powers uses ‘psalm tone keys’ and ‘psalm tone tonalities’, Atcherson coined the expression ‘pitch-key modes’, and Dodds adopts ‘church tones’. Here, we opt for using ‘church keys’, or, where appropriate, simply ‘tones’ (or *tonos*) in order to employ the English cognate most widely used during the baroque period by Spanish authors. In this article we give an

- 
- 3 Gregory Barnett, ‘Modal Theory, Church Keys, and the Sonata at the End of the Seventeenth Century’, *Journal of the American Musicological Society* 51/2 (1998), 245–281; Gregory Barnett, ‘Tonal Organization in Seventeenth-Century Music Theory’, in *The Cambridge History of Western Music Theory*, ed. Thomas Christensen (Cambridge: Cambridge University Press, 2002), 407–455; Harold S. Powers, ‘From Psalmody to Tonality’, in *Tonal Structures in Early Music*, ed. Cristle Collins Judd (New York: Garland, 1998), 275–340; Michael R. Dodds, ‘The Baroque Church Tones in Theory and Practice’ (PhD dissertation, University of Rochester, 1999); Michael R. Dodds, ‘Tonal Types and Modal Equivalence in Two Keyboard Cycles by Murschhauser’, in *Tonal Structures in Early Music*, 341–372; Almonte C. Howell, ‘French Baroque Organ Music and the Eight Church Tones’, *Journal of the American Musicological Society* 11–2/3 (1958), 106–118; Walter Atcherson, ‘Key and Mode in Seventeenth-Century Music Theory Books’, *Journal of Music Theory* 17/2 (1973), 204–232; Joel Lester, *Between Modes and Keys: German Theory 1592–1802* (Stuyvesant: Pendragon, 1989).
- 4 Thomas Schmitt, Introductory study to Francisco Guerau, *Poema harmónico: compuesto de varias cifras por el temple de la guitarra española (Madrid, 1694)* (Madrid: Alpuerto, 2000), 11–66.
- 5 Francisco José León Tello, *Historia de la teoría española de la música en los siglos XVII y XVIII* (Madrid: Consejo Superior de Investigaciones Científicas, 1974).
- 6 Bernardo Illari, ‘¿Son Modos? Tonos y salmodia en Andrés Lorente’, in *Analizar, interpretar, hacer música: de las Cantigas de Santa María a la organología. Escritos in memoriam Gerardo V. Huseby*, ed. Melanie Plesch (Buenos Aires: Gourmet Musical Ediciones, 2013), 289–326, and ‘Los modos en la teoría de barroco y su posible aplicación al análisis’, unpublished paper delivered at the VII Jornadas Argentinas de Musicología y VI Conferencia Anual de la Asociación Argentina de Musicología, Córdoba (Argentina), 1992. We express our sincere gratitude to Bernardo Illari for providing us with the unabridged text of his paper.
- 7 Cristóbal L. García Gallardo, ‘Bases para una teoría armónica: los modos en los tratados españoles de los siglos XVII y XVIII’, in ‘El tratamiento de la sintaxis armónica en los principales tratados españoles sobre teoría musical (hasta la primera mitad del siglo XX)’ (PhD dissertation, Universidad de Granada, 2012), 127–162, and ‘La teoría modal polifónica en el Barroco español y su aplicación en los pasacalles de Gaspar Sanz’, *Revista de Musicología* 32–1/2 (2010), 83–100.



Table 1 Finals, key signatures and clefs of the church keys or tones

Tone	1st	2nd	3rd	4th	5th	6th	7th ( <i>por la mediación</i> )	8th <i>por la mediación</i>	8th <i>por el final</i>
<b>Final, signature and clefs</b> (written pitches)	D– $\natural$ low G– $\flat$ high	G– $\flat$ low	A– $\natural$ high	E– $\natural$ low	C– $\natural$ low F– $\flat$ high	F– $\flat$ low	D– $\natural$ high	C– $\natural$ high	G– $\natural$ high
<b>Final and signature</b> (actual pitches)	D– $\natural$	G– $\flat$	E– $\sharp$	E– $\natural$	C– $\natural$	F– $\flat$	A– $\sharp$	G– $\sharp$	D– $\sharp$

overview of the treatment of the church keys or tones in Spanish treatises over a long period of two centuries, and focus briefly on particular contributions made by individual authors.

#### THE CHURCH KEYS OR TONES

These church keys or tones are usually defined by the final note together with the key signature and clef in which they are presented, which determines their scale (or diapason). In Table 1 we summarize their most common Spanish presentation, both in treatises and in corresponding collections of compositions, and later provide in the Appendix a comprehensive listing by numerous authors.

Two systems of clefs were commonly used in this period: the ordinary, 'natural' clefs (also called 'claves bajas' (low clefs)) and the so-called 'claves altas' (high clefs), now best known as the *chiavette*, which, during the baroque period in Spain, were normally approached by transposing the written pitches down a perfect fourth.<sup>8</sup> Such practice is deduced from almost all theorists of the period, including Gaspar Sanz, Lucas Ruiz de Ribayaz, José de Torres, Diego Fernández de Huete, Santiago de Murcia, Pablo Nassarre, Francesc Valls, Antonio Ventura Roel del Río and Pedro Rabassa.<sup>9</sup> This practice was less standardized during the sixteenth century and the first half of the seventeenth, when other transpositions were also possible. As can be seen in Table 1, certain tones were almost always written in high clefs, while others were notated in both high and low clefs. We also present the actual pitches for the sake of clarity.

8 As is well known, the high clefs were usually positioned as follows: G on the second line for the soprano, C on the second line for the contralto, C on the third line for the tenor and C on the fourth line (or F on the third line) for the bass, while the low clefs were C on the first line, C on the third line, C on the fourth line and F on the fourth line respectively.

9 See, for example, Luis Robledo, *Juan de Castro (ca. 1561–1631): vida y obra musical* (Zaragoza: Institución Fernando el Católico, 1989), 87–94; Rosa Isusi Fagoaga, 'Pedro Rabassa en la teoría del siglo XVIII: algunos aspectos sobre instrumentos y voces según su *Guía de principiantes*', *Revista de Musicología* 20/1 (1997), 401–416; and Luis A. González Marín, 'Notas sobre la transposición en voces e instrumentos en la segunda mitad del siglo XVIII: el repertorio de la Seo y el Pilar de Zaragoza', *Recerca Musicològica* 9–10 (1989–1990), 303–325. More information about the Italian practice can be found in Patrizio Barbieri, 'Chiavette and Modal Transposition in Italian Practice (c. 1500–1837)', *Recercare* 3 (1991), 3–5; Jeffrey Kurtzman, 'Tones, Modes, Clefs and Pitch in Roman Cyclic Magnificats of the 16th Century', *Early Music* 22/4 (1994), 641–664; and Stephen Bonta, 'The Use of Instruments in the Ensemble Canzona and Sonata in Italy, 1580–1650', *Recercare* 4 (1992), 23–43.



We list two usual presentations of the 8th tone. The one known as 8th *por el final* is formed from its final note (which comes, as we will see, from the final pitch of the corresponding psalm tone or, in some cases, from the modal final); it was often called simply ‘the 8th’, since it was considered to be the original 8th tone. However, the 8th *por la mediación*, which concludes on the mediation G (or C in high clefs) instead of on its final D (or G in high clefs), was more frequently used in practice. The term *mediación* (mediation), common at this time in Spain, refers to the note second in importance after the final in every tone, indicated as the main arrival point in internal cadences. Usually, it matches the reciting note – and, except in the 7th, the note concluding the medial cadence – in the corresponding psalm tone. As for the 7th tone, authors such as Lorente and Nassarre label the 7th tone in our list in Table 1 – with a final of D in high clefs and key signature without alterations (A and one sharp in actual pitches) – as 7th *por la mediación*, using then as the original 7th the tone with a final of A in high clefs without alterations (E and one sharp in actual pitches); nevertheless, later sources (mainly in the second half of the eighteenth century) will favour the 7th tone with a final of A in non-transposing clefs without alterations (see Appendix).

Theoretical expositions of the system of tones can indicate other important contextual features apart from finals, key signatures and clefs, such as the mediation, the principal and secondary ‘cláusulas’ (cadences) – whether indicating only the final note, several of them, or a complete series of cadential chords – and the entrance notes for the voices in imitation, as shown by Nassarre, for example, in *Fragmentos músicos*. We summarize Nassarre’s presentation in Table 2, reflecting in this case only written pitches. Note a new tone, the *segundillo*, which we will comment upon below.

In contrast, a practical guitar handbook such as the *Instrucción de música sobre la guitarra española* by Gaspar Sanz indicates only a single harmony for the final note of each tone, without dwelling on an explanation of either key signatures or clefs (see Appendix). As we have seen, certain versions of the system can change the final of the tone and its key signature as well. In fact, in other countries, the most frequent usages differ markedly from the Spanish ones, as we shall see.

Furthermore, the total number of tones is regularly increased with the frequent inclusion of variants – we have already mentioned the case of the 7th and 8th *por la mediación* and *por el final*. Likewise the 4th *por la mediación* (accordingly with a final of A), which was rare and is therefore omitted here for clarity. Many authors also add the above-mentioned tone called ‘segundillo’ (with a final of B $\flat$  in natural clefs and one flat in the key signature), interpreted sometimes as ‘2 $^{\circ}$  por la mediación’ and at others as the 5th or 6th tone transposed a second lower (‘punto bajo’, as we can see in Table 2 from Nassarre). Some make reference to the 8th with a final of G (in natural clefs) and without alterations (sometimes called ‘octavillo’ (little eighth)) from ‘the ancients’, although, as Nassarre states in *Escuela música*, ‘modern practitioners do not recall such configuration of the eighth’ (‘los prácticos modernos no hacen memoria de semejante figuración del octavo’).<sup>10</sup>

Finally, sometimes authors explain further variants only for pieces created for psalmody (that is the case of the ‘natural 5th’, with a final of A in high clefs without alterations) and present the most common transpositions of the tones; others give some new options for such non-liturgical works as villancicos. Clearly, if one combines all of this with the complicated explanation that some theorists used to justify these tones, the final panorama is so intricate that it is easy to understand why this matter is often oversimplified or avoided today. In order to provide the clearest understanding of the *tonos*, we have opted to present their simplest and most common listing in Table 1, and later to summarize their relationships to the medieval modes (previously investigated in other works) and to apply them to Spanish practice of the time.

---

10 Pablo Nassarre, *Escuela música según la práctica moderna* (Zaragoza: Herederos de Manuel Román / Herederos de Diego de Larumbe, 1723–1724), volume 1, 310–311.



Table 2 Description of the *tonos* by Pablo Nassarre

Tone	Final, signature and clefs	Mediation	Other cadences	Entrance notes
1st	G–b high	D	C, A, F, Bb	G, D
	D–c̣ low	A	G, E, C, F	D, A
2nd	G–b low	Bb	C, A, F, D	G, D
	A–c̣ high	C	G, F, E, D	A, E
4th	E–c̣ low	A	G, F, D, C	E, A/B
	5th	F–b high	C	D, Bb, G, A
C–c̣ low		G	A, F, D, E	C, G
5th <i>punto bajo</i> (or <i>segundillo</i> )		B–b low	F	G, Eb, C, D
6th	F–b low	A	D, Bb, G, C	F, C
	7th <i>por la mediación</i>	D–c̣ high	A (final) <sup>a</sup>	G, F, E, C
8th <i>por el final</i>	G–c̣ high	C	A, F, E, D	G, C/D
	8th <i>por la mediación</i>	C–c̣ high	G (final) <sup>a</sup>	-

Source: Pablo Nassarre, *Fragmentos músicos*, second edition (Madrid: Imprenta de Música, 1700), 60–63, 107–116. Nassarre offers a much longer explanation of the tones in his *Escuela música según la práctica moderna* (Zaragoza: Herederos de Manuel Román / Herederos de Diego de Larumbe, 1723–1724).

<sup>a</sup>Since these tones end on their mediation (which acts as an actual final here), the 'natural' final would be used as actual mediation.

## THE CHURCH KEYS COMPARED TO THE MEDIEVAL MODES

When the eight church keys and the eight medieval modes are placed next to each other, distinctions between the two systems become evident, though at first one might be tempted to look for similarities. For example, one could, in principle, recognize the 1st and 4th tones as similar to the corresponding medieval modes, and could thus include the 6th if one considers that this mode was often used with the Bb. Likewise, one could understand the 2nd, 5th and 8th tones as transpositions of their respective modes, which were certainly frequent already before the seventeenth century. But this same process of presenting as natural modes those that were transposed or presented with alterations in the key signatures subverts the very essence of modal theory, allowing that a single intervallic structure of the scale may be presented over different finals and even modifying the very intervallic structure from its theoretical presentation, as in the case of the 5th and 6th tones. As for the 3rd and 7th tones, they are obviously dissimilar to the corresponding medieval modes. Finally, the decisive difference according to the ambitus between authentic modes (with the final as the lowest note) and the plagal modes (with their final somewhere in the middle) now vanishes, since baroque theorists



almost always explain and write their scale from the final, giving no indication whatsoever with respect to ambitus.<sup>11</sup>

In reality, many of these discrepancies between the two systems have precedents in certain applications of modal theory to polyphony that had already been appearing since the Renaissance in a variety of European music centres. Thus in his presentation of the modes, Gallus Dressler explains that the 2nd mode ‘generally is transposed by a fourth in polyphony’ (‘plerumque, transponitur ad quartam in figurali cantu’).<sup>12</sup> He presents the most important notes of the same mode starting from the final G and seems to suggest the key signature with one flat for the 5th and 6th modes. On the other hand, modes with finals on A and C had been incorporated into the system of twelve proposed by Glareanus – assumed later by many theorists – as added to the eight traditional ones.

Nevertheless, the presentation of the eight church keys or tones in the form given in Table 1 (or one of its variants) as its own standardized system (including the remarkable substitution of the 3rd and 7th modes by their respective tones) seems to have been in effect since roughly 1600, reaching its maximum diffusion in Europe during the second half of the seventeenth century. In Spain, the tones remained relevant throughout the eighteenth century and were even discussed in treatises well into the nineteenth century, as shown in the Appendix.

The system of the eight church keys is essentially a later, practical phenomenon of the period, which writers regularly cultivated to reflect prevailing general acceptance among ‘los prácticos’ (performing musicians) and ‘los modernos’ (modern musicians), although not without reticence on specific occasions. Thus, as early as 1626, Francisco Correa de Araujo expounds upon the twelve modes and follows them with a series of short explanatory fantasias (*tientos*) in his *Facultad orgánica*. However, later in the treatise he appends another series of *tientos* ‘following the eight common tones’ (‘por los ocho tonos vulgares’),<sup>13</sup> though in fact he only uses five of them (see Appendix).

Additionally, Lorente, Torres, Rabassa, Roel del Río and Vargas y Guzmán (who borrows a great deal from Torres) demonstrate knowledge of the system of twelve modes, but likewise corroborate the system of eight tones as the most widely disseminated and practised system, being able to supply, by means of transposition, any of the earlier modes.<sup>14</sup> Valls, who cites Zarlino, Cerone and Kircher, adopts a radical defence of the twelve modes despite the fact that ‘modern practitioners count only eight tones’ (‘los

11 There are other less obvious differences between the nature of traditional modes and church keys, which we cannot address here (on this matter see especially Illari, ‘¿Son Modos?’). They mainly concern the conflict between a vocal conceptual model of tonal space (the ‘Guidonian diatonic’) and an instrumental one (keyboard-based), mentioned by Powers, ‘From Psalmody’, 275–277.

12 Gallus Dressler, *Praecepta musicae poeticae*, manuscript (1563), online as *Traité français sur la musique*, Indiana University, <[www.chmtl.indiana.edu/tml/16th/DREPREA\\_TEXT.html](http://www.chmtl.indiana.edu/tml/16th/DREPREA_TEXT.html)> (1 February 2015), 239.

13 Francisco Correa de Araujo, *Libro de tientos y discursos de música práctica y teórica de órgano* [intitulado *Facultad orgánica*] (Alcalá: Antonio Arnao, 1626), 39v.

14 Lorente, *El Por qué de la Música*, 565 and 621–622 (615 and 671–672 facsimile edition); José de Torres y Martínez Bravo, *Reglas generales de acompañar, en órgano, clavicordio, y harpa, con solo saber cantar la parte o un baxo en canto figurado* (Madrid: Imprenta de Música, 1702), 8–9; Pedro Rabassa, *Guía Para los Principiantes: que dessean Perfeccionarse en la Composicion de la Mussica*, manuscript (1767) in Real Colegio del Corpus Christi de Valencia, 449; Antonio Ventura Roel del Río, *Institución harmonica o Doctrina música theórica y práctica, que trata del canto llano, y de órgano, exactamente, y según el moderno estilo explicada, de suerte que escusa casi de maestro* (Madrid: Herederos de la viuda de Juan García infanzón, 1748), 235; Juan Antonio de Vargas y Guzmán, *Explicación de la guitarra*, edition of the manuscript (Cádiz, 1773) from the Biblioteca Medina, Oviedo, ed. Ángel Medina Álvarez (Granada: Centro de Documentación Musical de Andalucía, 1994), 76–77.



prácticos modernos solo cuentan ocho tonos’), which, in his judgment, causes numerous irregularities and confusion.<sup>15</sup>

Much to the contrary, the eight medieval modes are presented in Spanish baroque treatises as an elaborate theoretical system based on the revered teachings of the ancients that have been carried over since antiquity. Theorists of the period explain these modes when referring to plainchant, but, significantly, do not use them when dealing with polyphonic music. One must remember that, in treatises of the period, Spanish writers regularly include a preliminary section dedicated to Gregorian chant, which served not only to teach practical applications to the daily liturgy, but also as a way of initiating musical instruction and singing before attempting measured music (or ‘canto figurado’, using their terminology) and polyphony. In addition, the system of twelve modes, which was indeed applied to polyphony, enjoyed an elevated prestige within much European music theory of the period, above that granted to the eight tones. In Spain, though, it was clearly not embraced by most theorists or practising musicians.

### PSALM TONES AND THE EVOLUTION OF THE CHURCH KEYS IN SPAIN

The origin of the church keys has been clearly explained in some recent publications.<sup>16</sup> Here we will give an account of the matter based on Spanish sources. This origin is situated as much in traditional modal theory as in certain daily musical practices which by the beginning of the seventeenth century had become particularly important in the liturgy of Counter-Reformation Catholicism, specifically the performance of psalms and other recited formulas (especially the Magnificat) in *alternatim* practice between the choir in plainchant and the organ, which embellished those formulas within a polyphonic fabric, creating pieces – almost always improvised – known as verses. The connections between the church keys and the psalm tones were often noted by theorists; Torres even completed his description of each church key with endings from both halves of the psalm tone.<sup>17</sup>

As is well known, the formulas of the psalm tones were presented essentially in eight distinct types (though, at times, an additional tone called ‘peregrinus’ was included), whose structure was related to that of the eight ecclesiastic modes, but always presented significant differences with respect to them. Specifically, the *repercussa* of the mode always coincides with the reciting note of the psalm tone, although their finals diverge in the 3rd, 5th and 7th modes. There could be variant terminations – or *differentiae* – for every psalm tone in the attempt to provide the most proper connection with the antiphon which was usually sung after (and before) the psalm; however, when polyphony was involved (as in *alternatim* with the organ), these *differentiae* were usually standardized, with only one for each psalm tone.<sup>18</sup>

The recitation formulas for the psalms were quite similar to those for the Magnificat (and other canticles), differing essentially in the addition of an initial intonation for all of the versicles of the latter. Frequently music treatises of the period dispensed with this initial intonation, since, in this regard, the matter that most interested the organist was the final of each half of the versicle, so that he would know how to cadence properly. Thus authors gave the same formula for psalms and canticles, grouping them under some generic term such as ‘psalmody’ or *Seculorum* (since the minor doxology or the Gloria Patri, which concludes with the words ‘saeculorum amen’, was recited after both chants with the same formula). Unless indicated otherwise,

15 Francesc Valls, *Mapa Armónico Práctico*, manuscript (1742) in Biblioteca de la Universidad de Barcelona, Ms. 783, 15r.

16 See especially Powers, ‘From Psalmody’. With regard to Spain, there is some interesting information in Bernadette Nelson, ‘Alternatim Practice in 17th-Century Spain: The Integration of Organ Versets and Plainchant in Psalms and Canticles’, *Early Music* 22/2 (1994), 239–259.

17 Torres, *Reglas generales de acompañar*, 10–16.

18 See Powers, ‘From Psalmody’, 282, and Dodds, ‘The Baroque Church Tones’, 6.



The image displays two columns of musical notation for eight different tones. The left column shows historical notation with lyrics, and the right column shows modern transcription in bass clef.

Historical Notation (Left Column)	Modern Transcription (Right Column)
<b>Primer Tono</b> Final. Entonacion. Mediacion. Gloria Patri & Fi li o, & Spi ri tu i Sanc to.	<b>First Tone</b> Final Intonation Mediation
<b>Segundo Tono</b> Final. Entonacion. Mediacion. Gloria Patri & Fi li o, & Spi ri tu i Sancto.	<b>Second Tone</b> Final Intonation Mediation
<b>Tercero Tono</b> Gloria Patri & Filio, & Spi ri tu i Sancto.	<b>Third Tone</b> Final Intonation Mediation
<b>Quarto Tono</b> Final. Entonacion. Mediacion. Gloria Patri & Fi li o, & Spi ri tu i Sancto.	<b>Fourth Tone</b> Final Intonation Mediation
<b>Quinto Tono</b> Final. Entonacion. Mediacion. Gloria Patri & Filio, & Spi ri tu i Sancto.	<b>Fifth Tone</b> Final Intonation Mediation
<b>Sexto Tono</b> Final. Entonacion. Mediacion. Gloria Patri & Fi li o, & Spi ri tu i Sancto.	<b>Sixth Tone</b> Final Intonation Mediation
<b>Septimo Tono</b> Final. Entonacion. Mediacion. Gloria Patri & Fi li o, & Spi ri tu i Sancto. OCTA.	<b>Seventh Tone</b> Final Intonation Mediation
<b>Octavo Tono</b> Final. Entonacion. Mediacion. Gloria Patri & Fi li o, & Spi ri tu i Sancto.	<b>Eighth Tone</b> Final Intonation Mediation

Example 1 The *Entonaciones de los Salmos*, as demonstrated by Martín y Coll

hereafter, whenever we refer to the psalm tones, we will understand the Magnificat and similar canticles to be included.

Example 1 illustrates the ‘entonaciones de los salmos’ as explained in Antonio Martín y Coll’s *Breve summa*<sup>19</sup> alongside a modern transcription. Martín y Coll’s presentation is similar to that of other theorists such as Lorente, Torres and Rabassa, although he includes an eighth ‘irregular’ tone, with a final of G and one flat that we omit. Moreover, in the earlier editions of his *Arte de canto llano* (see below), from which the *Breve summa* originates, Martín y Coll not only included an irregular eighth tone but also additional variants of all the tones. Table 3 summarizes the obvious differences between the structures of modes and psalm tones – differences which, as we shall see, explain some of the most striking dissimilarities between modes and church keys mentioned above.

Theorists often pointed out the necessity of transposing these recitation formulas on the organ in order to accommodate the most appropriate range of the chorus, a practice that remained unnecessary in *a cappella*

19 Antonio Martín y Coll, *Breve summa de todas las reglas del canto llano y su explicación* (La Antigua, Guatemala: La Imprenta de Sebastián de Arevalo, 1750).





Table 3 Differences between the modes and the psalm tones

Mode / psalm tone	1st	2nd	3rd	4th	5th	6th	7th	8th
<b>Final of mode</b>	D	D	E	E	F	F	G	G
<b>Final of psalm tone</b>	D	D	A	E	A	F	A	G
<b>Repercussa of mode / reciting note of psalm tone</b>	A	F	C	A	C	A	D	C

singing, where performers might tune to virtually any pitch without relying on notation to reflect this flexibility. In a section entitled ‘Entonaciones de los salmos y cánticos, y transportación de ellos en el órgano para conveniencia del coro’ (Intonations of the psalms and canticles, and transposition of them on the organ to suit the chorus) Valls was especially explicit regarding this point:

Habiéndose introducido en la iglesia el órgano, fue necesaria la transportación de los tonos, para que el coro, sin fatigarse, pudiese cantar el canto llano, pues sin ella algunos tonos por bajos, y los más por muy altos, no eran practicables.<sup>20</sup>

With the organ having been introduced into the church, transposition of the tones was necessary so that, without tiring itself, the choir could sing plainchant, since without this, some tones, being low, and most being quite high, were not practical.

The clearest explanations of this matter appear in Martín y Coll’s *Arte de canto llano*, which remained relevant for generations of musicians, having been issued in Spain three times during the first third of the eighteenth century, then shortly thereafter in abbreviated form in both Spain and Guatemala as the *Breve summa de canto llano*. Martín y Coll explains that the transpositions that must occur ‘when psalms are sung with the organ’ (‘cuando se cantan los salmos con el órgano’) are those that affect the 2nd, 3rd, 5th, 7th and 8th psalm tones.<sup>21</sup> This standardized system of transpositions was followed in numerous collections of organ verses for psalmody in the seventeenth century. We summarize their finals in Table 4, which is based on that of Bernadette Nelson, who presents a similar summary of finals used in numerous organ verses for psalmody compiled from Spanish manuscripts at the end of the seventeenth century and the first decade of the eighteenth, including many works by Juan Bautista José Cabanilles and other composers.<sup>22</sup> In Table 4 we compare these finals to the indications given by Martín y Coll, which largely agree with Valls’s presentation (in the section cited above), as well as those of Nassarre<sup>23</sup> in his explanation of the variations of the tones for psalmody in *alternatim* practice. One can also see in the table that these transpositions of the psalm tones allow for reciting notes (the pitch over which one recites the majority of the text) that are much more comfortable for the male choir than the original, untransposed ones; indeed, they alternate only between G and A (or in one case, B♭). At the same time they require very few alterations, thus avoiding an awkward progression from one tone to another.

In the 5th psalm tone, the two options given (E and C) do not correspond to different transpositions; rather, they reflect the possibility of harmonizing the final E – resulting from the transposition a fourth lower – either as the fundamental or the third of the final harmony. Valls suggests that the second alternative is the more modern since, when discussing the transposition of the 5th psalm tone on the organ, he indicates

20 Valls, *Mapa Armónico Práctico*, 19r.

21 Antonio Martín y Coll, *Arte de canto llano* (Madrid: Viuda de Juan García Infançon, 1714), 68–71.

22 Nelson, ‘Alternatim Practice’, 245.

23 Nassarre, *Escuela música*, volume 1, 313–314.



Table 4 Common transpositions of the psalm tones

Psalm tone	1st	2nd	3rd	4th	5th	6th	7th	8th
<b>Original final</b>	D	D	A	E	A	F	A	G
<b>Original reciting note</b>	A	F	C	A	C	A	D	C
<b>Transposition according to Martín y Coll (with final and key signature)</b>	—	E– $\sharp$ (2nd up) G– $\flat$ (4th up)	E– $\sharp$ (4th down)	—	E– $\sharp$ (or C) (4th down)	—	E– $\sharp$ (4th down) D– $\flat$ (5th down)	D– $\sharp$ (4th down)
<b>Finals in organ verses</b>	D	E G	E	E	E (C)	F	E D (A) (F)	D (G)
<b>Resulting reciting note</b>	A	G B $\flat$	G	A	G	A	A G	G

‘In psalms, [the transposition is] to E-*la-mi* [E], or according to modern musicians to C-*sol-fa-ut* [C]’ (‘En salmos, por Elami, o según los modernos en Csolfaut’).<sup>24</sup> Significantly, the alternative, with a final of C, does not appear in the above-cited first edition of Martín y Coll’s treatise of 1714 (and is consequently listed in parentheses in our table), but was added in the following edition five years later and in all succeeding editions.<sup>25</sup>

It is easy to note the relationship between the finals and the key signatures in these transpositions of psalm tones and in church keys and, proceeding from the custom of accompanying (or substituting) reciting formulas with the organ, using the final note somewhat like a ‘root’ of the final harmony, and therefore as the final of the polyphonic tone. On the one hand, they correspond exactly with the 1st, 3rd, 4th, 6th and 8th *por el final* church keys. On the other hand, we must remember the differences indicated in the 3rd and 7th tones when compared to the medieval modes. One will see that the 3rd tone corresponds to the transposition that regularly is performed a perfect fourth below from the A of the psalm tone, and the same can be said about Lorente’s and Nassarre’s original 7th mentioned above.

The other church keys could probably have adopted their habitual form (presented in Table 1) in order to be applied to other music outside of psalmody. The 2nd and 5th church keys took the second transposition options in the psalms, which match the most common transpositions (reaching back to the Renaissance) of the corresponding modes in polyphonic works. In any case, numerous theorists still mention the first option too (E with one sharp in actual pitches) in their descriptions of the eight polyphonic tones, using it especially for psalmody (see Appendix). In fact, several of them refer to this as the ‘5th natural tone’,<sup>26</sup> whereas concluding on C would be the ‘5th accidental tone’. These terms reveal, once more, the influence of

24 Valls, *Mapa Armónico Práctico*, 19v. However, C was the common final from the beginning in the corresponding church key (see Appendix and also Adriano Banchieri, *Cartella musicale* (Venice: G. Vicentini, 1614), 71–88); the final on E would be mentioned in Spanish sources, but only as a possibility for psalmody.

25 Antonio Martín y Coll, *Arte de canto llano* (Madrid: Bernardo Peralta, 1719). Compare the chapter in this edition (93–96) to the corresponding one appearing in the 1714 edition (67–74).

26 See, for example, Lorente, *El Por qué de la Música*, 564 (614 facsimile edition).



psalmody on the church keys; in contrast, modal theory would have been inclined to view the second option as primary.

As for the 7th tone, the predominance of the tone *por la mediación*, with a final on D without alterations (A and one sharp in actual pitches) – which, of course, is not adjusted to the traditional 7th mode – was indeed striking. In fact, A without alterations prevailed in the second half of the eighteenth century. Nassarre suggests a possible explanation by affirming that the use of the final on D (in high clefs, A in actual pitch) in place of its ‘proper final’ on A (actual E) derives from the need to ‘differentiate it from the third’ (‘diferenciarse del tercero’).<sup>27</sup> Again, this demonstrates the author’s assumption that the origin of the church keys lies in the habitual practice of psalmody with all of its necessary transpositions. Nassarre later presents a third variant for the 7th tone, which follows directly from the traditional modes since it is written over G in high clefs without alterations (consequently, D with one sharp).<sup>28</sup>

Besides the practice of accompanying the psalm tones, and the role of traditional modal theory, a third influence in the evolution of the system of church keys bears some consideration. This involves the rapprochement between the church keys and modern major and minor tonalities, which, in practice, was taking root gradually. Thus the Mixolydian scale of the 8th tone *por el final* fell into disuse in favour of the major scale of the 8th tone *por la mediación*, just as the typical Phrygian scale of the 4th tone over E was equally converted into minor, finishing on the mediation A. Surely it is not accidental that Lorente refers to these two variants (using the mediation) as habitual and specific to villancicos,<sup>29</sup> which were composed in a more modern style than that of traditional religious music in Latin. Moreover, the same reasoning might explain the gradual preference in the late eighteenth century for a final of A in the 7th tone.

#### FROM PSALM TONE TO CHURCH KEY

Although earlier respected modal theory did not cease to exercise a notable influence over the church keys, psalmody played a large role in the origin of this new system, just as new compositional styles tended toward new variants. What is so fascinating is that a system conceived in principle for performance of psalmody in *alternatim* practice with the organ would extend – although not without changes – to other liturgical works, and even to secular ones, and that it would develop into a general system of tonal organization for polyphonic music of the time. As Rabassa said, ‘it will be enough for the composer to know these eight [tones] in order to compose all types of works’ (‘le bastará al compositor saber estos ocho [tonos] para componer todo género de obras’).<sup>30</sup>

This system was accepted by practically all Spanish theorists of the time, and is reflected in the titles of many religious works (including masses, toccatas and *tientos*) as well as secular ones (frequently in *passacalles*, but sometimes also in songs and dances). For example, in the *Compendio numeroso* for harp and organ, Diego Fernández de Huete includes whole sets of songs and *pasacalles* ordered according to the eight church keys, and also a few dances,<sup>31</sup> and José Marín indicated the corresponding church key for each of his *tonos humanos* (accompanied secular songs),<sup>32</sup> as did such remarkable authors as Sanz, Guerau and Murcia in

27 Pablo Nassarre, *Fragmentos musicales*, second edition (Madrid: Imprenta de Música, 1700), 115.

28 Nassarre, *Escuela música*, volume 1, 310.

29 Lorente, *El Por qué de la Música*, 621 (671 facsimile edition).

30 Rabassa, *Guía Para los Principiantes*, 449.

31 Fernández de Huete, *Compendio numeroso de zifras armónicas, con theórica, y práctica, para harpa de una orden, de dos órdenes y de órgano*, two volumes (Madrid: Imprenta de Música, 1702–1704).

32 José Marín, *Cancionero de Marín*, manuscript (c1699) in Fitzwilliam Museum, Cambridge, Mu.Ms.727.



certain collections of *pasacalles* for Spanish guitar.<sup>33</sup> Finally, we recall Lorente, who applied church keys to villancicos, explaining the more frequent variants for them.<sup>34</sup>

Nevertheless, the degree to which these practical works follow the features of specific church keys as indicated by theorists is not clear beyond the possible indication of the corresponding tone in the title of the piece. These characteristics are often easy to find in liturgical works, but can be quite vague in certain secular genres.<sup>35</sup> The approach of the eighteenth century and the move to modern tonality would eventually convert the name of the church key into a simple equivalent of the corresponding tonality.

Still, scholars of baroque musical thought have yet to explain the full process by which practising musicians and theorists transferred the system of church keys from the organ accompaniment of psalmody to other genres. Certain factors need to be borne in mind. On one hand, *alternatim* practice with the organ was regularly applied as well to hymns and works belonging to the mass, whose musical structures were adjusted to the modes rather than to the psalm tones. However, it would not have been uncommon for organists to apply certain principles of their daily psalm performance to these other pieces, a practice that Valls denounces in his criticism of the system of eight polyphonic tones (or church keys):

Entre otros inconvenientes que se siguen, es pedir a un organista toque unos *Kyries*, *Gloria* (u otro que no sea salmo) de 3<sup>er</sup> tono, y como ignora el diapason que le pertenece, lo que toca es un 3<sup>er</sup> tono de salmodia. En los tonos 7<sup>o</sup> y 8<sup>o</sup> sucederá la misma equivocación en misas e himnos.<sup>36</sup>

Among other inconveniences that persist is to ask an organist to play *Kyries*, the *Gloria* or another work that is not a psalm in the 3rd tone; since he ignores the diapason that belongs to it, what he plays is the 3rd psalm tone. In the 7th and 8th tones the same mistake will be made in masses and hymns.

On the other hand, one must remember that centres of professional musical teaching during this period were found principally in ecclesiastical (as opposed to court) music chapels, and that consequently the majority of treatises on music theory were written by prestigious organists (Correa de Araujo, Lorente, Nassarre, Torres, Martín y Coll) or distinguished chapel masters (Valls, Roel del Río, Rodríguez de Hita, Rabassa). With this in mind, it is not difficult to understand that the daily use of the church keys by church musicians might have motivated them to view all polyphonic music through this lens, and that their pedagogical writings and interactions would help quickly to spread this way of thinking through an entire musical world.

## SPANISH PECULIARITIES

It seems that church keys originated in Italy, and later spread elsewhere. Although some aspects can be traced back to the sixteenth century, we find their first standard presentation in the work of Adriano

33 Gaspar Sanz, *Institución de música sobre la guitarra española* (Zaragoza: Herederos de Diego Dormer, 1697), *pasacalles* of the third book; Francisco Guerau, *Poema harmónico: compuesto de varias cifras por el temple de la guitarra española* (Madrid: Imprenta de Manuel Ruiz de Murga, 1694); Santiago de Murcia, 'Códice Saldívar No. 4', manuscript (c1732), private library of the Saldívar family, Mexico City.

34 Lorente, *El Por qué de la Música*, 620–621 (670–671 facsimile edition).

35 With respect to guitar *pasacalles* see García Gallardo, 'La teoría modal polifónica.'

36 Valls, *Mapa Armónico Práctico*, 17r.



Banchieri at the beginning of the seventeenth century;<sup>37</sup> in Spain, Lorente expounded them for the first time in 1672, though Correa de Araujo seems to use them in a set of *tientos* in 1626, as we have seen.

It follows that many of the points treated here with respect to the Spanish system can be found in earlier Italian sources. These include the differences between the traditional modes and the church keys, their origin in *alternatim* psalmody and the use of transposition to narrow the overall range of the eight psalm tones, the occurrence of variants in Tone 7, and the use of a modal final in place of a psalm ending in the 5th tone. However, the Spanish tradition diverges from the Italian one in some significant ways. First, some tones have a different presentation. The 8th tone *por el final* and the 3rd tone only match their Italian counterpart when written in high clefs, but the actual pitches of their finals are always a fourth below (E and D respectively in Spain, for A and G in Italy). We have already mentioned the ‘5th natural tone’, absent in Banchieri and other Italian sources.

The case of the 7th tone is more complex. This tone can be presented in different versions by various Italian theorists, and there are even more differences apparent in other countries.<sup>38</sup> Banchieri gives D with one flat, which results from transposing a 5th below the original psalm tone. Later theorists would consider E with one sharp (from the transposition a fourth below), which matches the above-mentioned natural 7th tone of Lorente and Nassarre (written as A in high clefs without alterations). Still, some prefer the modal scale – used in the antiphon – transposed a fourth below, probably because ‘the seventh makes five or six sorts of *differentia*’,<sup>39</sup> presenting then D with one sharp; finally, others use D with two sharps. However, as we explained above, in Spain it was most commonly A with one sharp (D in high clefs), the so-called 7th *por la mediación*.

Secondly, the association of each tone with a specific set of clefs seems to be a Spanish peculiarity. We must remember the obligatory transposition down a fourth of music written in high clefs at that time. The result of this practice avoids the sharp in the key signature, so that the only alteration necessary would be the B $\flat$ . It is worth citing the explanation Torres offers regarding this practice: ‘que sin duda el tañerlas en España transportadas es porque las voces canten siempre por claves que no necesiten de añadirles sostenidos en su principio’ (without doubt, [the high clefs] are played in transposed fashion in Spain because voices always sing using keys that do not need added sharps at the beginning).<sup>40</sup>

By giving a particular set of clefs (high or low) and the corresponding key signature, Spanish theorists emphasize precise pitches for every tone. According to Illari, ‘la conjunción de claves y propiedad los ubica en el teclado con mayor fijeza que a los *tuoni* de Italia’ (the connection of clefs and key signatures places [the Spanish *tonos*] with greater consistency on the keyboard than the Italian *tuoni*). The use of clefs in Italy would have a different function: ‘En otras tradiciones teóricas, como la italiana, los tonos no se corresponden con un juego de claves determinado. Se utiliza un juego principal (que coincide con las claves bajas españolas), y se lo cambia para indicar transporte del tono a una final que no es la propia’ (In other theoretical traditions, such as the Italian one, tones do not correspond to a specific set of clefs. A principal set is used (which corresponds to the Spanish low clefs), and is changed to indicate transposition of the tone to a different

37 Adriano Banchieri, *L'organo suonarino* (Venice: R. Amadino, 1605), and *Cartella musicale*. According to Dodds, ‘although sixteenth-century theorists such as Aron, Zarlino, Pontio, and Zacconi address the tonal characteristics of polyphonic psalmody, the earliest description of the church keys in their standard seventeenth-century form is to be found in Banchieri’s *L'organo suonarino*’: ‘Tonal Types’, 342.

38 See some interesting explanations of the diversity in the 7th tone in Johann Baptist Samber, *Manuductio ad organum* (Salzburg: J. B. Maysrs, 1704), quoted in Dodds, ‘The Baroque Church Tones’, 162–165, and Dodds, ‘Tonal Types’, 364–367.

39 Jean Titelouze, *Le Magnificat* (Paris: Pierre Ballard, 1626), quoted in Powers, ‘From Psalmody’, 306.

40 Torres, *Reglas generales*, 11.



final).<sup>41</sup> Thirdly, Spanish *tonos* lose some of the modal properties that their Italian counterparts had obtained. Thus we do not find here the differentiation between authentic and plagal, usually associated with specific ambitus and species.<sup>42</sup> Interestingly, this continued to be an essential matter in explanations of modal theory for Gregorian chant offered by the same theorists, even though they did not deem it necessary to apply this to the church keys.

Finally, the great significance granted by Spanish theorists to explanations of the church-keys system is truly remarkable. Not only did they consider it to be applicable to every musical genre throughout much of the eighteenth century, but there are even some explanations of the system well into the nineteenth century (even if restricted now to church music). This does not prevent them, however, from acknowledging the origin of the system in the accompanying of psalm-tone formulae, which can be used (as in Torres) in order to complete descriptions of the tones.

The frequent use of tones *por la mediación* (in the 7th and 8th, and less in the 4th and *segundillo*), built on non-natural finals, is exclusive to the Spanish system. This practice must surely have arisen for the purpose of applying church keys outside psalmody, as Lorente did when describing the use of the 4th, 7th and 8th *por la mediación* in villancicos. In addition, theorists often dealt with ‘accidental’ (transposed) tones used in practice. For example, Nassarre devotes a whole chapter of his *Escuela música* to these ‘tonos accidentales’, explaining (only in low clefs) the ones commonly employed in vocal music: 1st tone ‘punto bajo’ (second lower, on C with two flats), 3rd tone ‘punto alto’ (second higher, on F $\sharp$  with three sharps), 4th tone ‘cuatro puntos alto’ (fourth higher, on A with one flat), 4th tone ‘punto bajo’ (second lower, on D with two flats), 5th tone ‘punto bajo’ or *segundillo* (second lower, on B $\flat$  with two flats), 6th tone ‘punto bajo’ (second lower, on E $\flat$  with three flats), 6th tone ‘medio punto bajo’ (minor second or semitone lower, on E with four sharps), 7th tone *por la mediación* ‘punto alto’ (second higher, on B with three sharps), 8th tone *por el final* ‘punto bajo’ (second lower, on C, with one flat), and 8th tone *por la mediación* and *por el final* ‘punto alto’ (second higher, on A with three sharps and on E with three sharps).<sup>43</sup>

Obviously, the extended life of church keys delayed the adoption of modern bimodality among Spanish theorists in relation to their European counterparts. We will deal with this process in the next section and will then extract some conclusions.

## FROM CHURCH KEYS TO BIMODALITY

The church keys are not a distortion of the ancient modes, nor the result of a period of confusion. Rather, they constitute an autonomous system that had full validity for a considerable period of time, and which was adapted to an extensive musical tradition. Neither were they a simple body of primitive major and minor tonalities; however, as modern bimodality spread in Spain, the distinctions between them fade slowly to the point of simply being equated with major or minor keys.

This process would happen later in Spain than in other European countries. For most of the eighteenth century, mainstream music theory in Spain hung on to the church keys and took a long time to adopt bimodality.<sup>44</sup> Among Spanish writers from the first part of the eighteenth century, we find a few instances

41 Illari, ‘¿Son Modos?’ 304, 306.

42 Illari indicates some other modal features that were dismissed: ‘El paquete completo de rasgos que habían “modalizado” los *tuoni* en Italia desapareció de las reglas de Lorente, incluyendo el ámbito, las especies y la dirección del primer punto de imitación, además de cambios fundamentales en las cadencias’ (The whole pack of features that had ‘modalized’ the *tuoni* in Italy disappeared in Lorente’s rules, including ambitus, species and direction of the first imitation point, as well as fundamental changes in cadences). Illari, ‘¿Son Modos?’ 304.

43 Nassarre, ‘Capítulo XVI. De los tonos accidentales, y los términos por donde van los que se componen para cantados’, *Escuela música*, volume 1, 315–322.

44 Lester states – ignoring the case of Spain – that only in Germanic countries was resistance to the new system maintained until the mid-eighteenth century: ‘It was only in German-speaking areas that vitriolic attacks on the major and minor



recognizing the reduction of the tones to just two types, major and minor. Fernández de Huete, after describing the eight church keys (to which he adds the 8th *por la mediación* and the ‘8th tone a step higher, called *de chirimías*’), affirms: ‘Empero, estos diez se encierran en dos; porque, aunque en la división pueden ser muchos, en la formación no son más de dos: el primero se forma con tercera menor, y el otro con tercera mayor’ (Nevertheless, these ten [tones] can be encapsulated within two; because although they can be divided into many, in their construction they are not more than two: the first is formed with a minor third, and the other with a major third).<sup>45</sup> For his part, although he presents the system of twelve modes and not that of eight church keys, Pedro de Ulloa arrives at the same conclusion:

Y porque la tercera que se forma sobre la final puede ser o mayor o menor, generalmente hablando todos los modos pueden reducirse a sólo dos clases, mayores o menores, y esto, natural o accidentalmente, según fuese la tercera natural o accidentalmente mayor o menor. De donde nace que de las doce cuerdas [notas] que hay en la octava resultan 24 modos: doce mayores y doce menores.<sup>46</sup>

And because the third that is formed over the final can be major or minor, generally speaking, all of the modes can be reduced to just two classes, major and minor, and this [can be] natural or accidental, according to whether the third is natural or, by reason of accidental, major or minor. Thus it follows that from the twelve notes of the octave arise 24 modes: twelve major and twelve minor.

It may be no accident that neither of the publications cited here were traditional treatises: the *Compendio de cifras armónicas* by Fernández de Huete is principally a collection of works (and practical examples for learning the art of accompaniment) for harp, with brief explanations for interpretation, and the *Música Universal*, written by the mathematician Ulloa rather than a musician, develops a peculiar approach to music with reference to mathematics, logic and rhetoric. On the other hand, the list of treatises that do not subscribe to modern bimodal theory is extensive, including those by Torres, Rabassa, Nassarre, Valls, Roel del Río, Rodríguez de Hita (despite its audacious innovations in other respects) and Ferandiere listed in the Appendix, and *Música canónica, motética y sagrada* by Juan Francisco de Sayas.<sup>47</sup>

We could well presume that this largely conservative posture would be related to the connection we have outlined between the most important theorists and religious music, given the considerable weight that the latter carried within Spanish music altogether. This is at least the belief of Francisco de Santa María, who does refer to bimodality but points out, as late as 1778, that the eight modes or tones continue in full use in Spain: ‘en nuestra España, como lo más que se escribe es para la iglesia, y no para el teatro, se usan los ocho modos, o tonos, los que tienen en sus diapasones [escalas] algunas diferencias que les distinguen de los dos modos dichos’ (in our Spain, since the majority of what is written is for the church, and not for the theatre, the eight modes or tones are used, which have in their scales certain differences that distinguish them from the two said modes).<sup>48</sup> Antonio Abreu also links the church keys to music chapels, although his background as a guitarist (as opposed to the religious background of Santa María) probably leads him to consider them more a burden from the past, since he assures the reader that only the major and minor modes

---

keys and only half-hearted acceptance of these keys persisted until the middle of the eighteenth century.’ Lester, *Between Modes and Keys*, 47.

45 Fernández de Huete, *Compendio numeroso*, volume 2, 7.

46 Pedro de Ulloa, *Música Universal, o Principios Universales de la Música* (Madrid: Imprenta de Música de Bernardo Peralta, 1717), 42.

47 Juan Francisco de Sayas, *Música canónica, motética y sagrada* (Pamplona: Martín de Rada, 1761).

48 Francisco de Santa María, *Dialectos músicos* (Madrid: Joachin Ibarra, 1778), 170–171.



exist: 'en todo género de música, sólo hay dos tonos, uno de tercera mayor, y el otro de tercera menor; no obstante, en algunas capillas de música, aún se acostumbra a decir primero, segundo, etc., o punto alto o bajo; pero siempre vendremos a decir que el tal tono es el punto tal en modo mayor o menor' (in every type of music, there are only two tones, one with a major third and the other with a minor third; nevertheless, in certain music chapels it is still customary to say first, second, etc. or *punto alto o bajo* [a step higher or lower]; but we will always come to say that such a tone is that [particular] note in the major or minor mode).<sup>49</sup>

During the second half of the eighteenth century, as the change toward bimodal tonality was being confirmed, many Spanish theorists took one of two different paths in recognizing a new musical reality: some, frequently following the steps of famous foreign authors (especially French ones), conceded the existence of two unique modes and abandoned earlier systems; others, maintaining the status quo, persisted in utilizing the eight church keys, but reducing them to a simple collection of major and minor tonalities, whose practical application was only to classify the twenty-four possible tonalities as seven or eight natural tones and the rest as transpositions of them.

In the former group is Antonio Soler, the famous composer whose keyboard works stand out because of their modernity in the Spanish context, and who may have studied with Domenico Scarlatti. He assumed in his *Llave de la modulación* that there are only two modes, which can be formed over each one of the twelve 'términos' (notes of the chromatic scale), except when one deals with music linked to plainchant.<sup>50</sup> What is curious is that, contradicting the earlier citation of Santa María, Soler affirms that this is the common practice in Spain as in Italy.

As we approach the nineteenth century the bimodal system is being firmly established by Spanish authors: Eximeno in 1774,<sup>51</sup> Bails in 1775,<sup>52</sup> Santa María in 1778, Iriarte in 1779, Ureña in 1785, Cavaza in 1786, López in 1799, Ferandiere and Moretti in 1799<sup>53</sup> and others. Many of them regularly mention earlier systems, although now as related exclusively to liturgical practices, including the works cited above by Palatín and Hernández, well into the nineteenth century.

49 His guitar treatise was apparently published in 1779, but it has come down to us only in the expanded edition by Víctor Prieto: Antonio Abreu and Víctor Prieto, *Escuela para tocar con perfección la guitarra de cinco y seis órdenes* (Salamanca: Imprenta de la calle del Prior, 1799); cited in Alfredo Vicent López, *Fernando Ferandiere (ca. 1740 – ca. 1816); un perfil paradigmático de un músico de su tiempo en España* (Madrid: Universidad Autónoma de Madrid, 2002), 197, note 309.

50 Antonio Soler, *Llave de la modulación y antigüedades de la música* (Madrid: Oficina de Joachin Ibarra, 1762; facsimile edition, New York: Broude, 1967), 72. Soler's bimodality would be criticized by Antonio Ventura Roel del Río in *Reparos músicos precisos a la Llave de la modulación del P. Fr. Antonio Soler* (Madrid: Antonio Muñoz del Valle, 1764), 17, and by Juan Bautista Bruguera y Morreras in *Carta apologetica . . . contra la Llave de la Modulación* (Barcelona: Imprenta de Francisco Suriá, 1766).

51 Antonio Eximeno, *Dell'origine e delle regolle della musica* (Rome: Michel'Angelo Barbiellini, 1774). The Spanish translation appeared later as *Del origen y reglas de la música*, trans. Francisco Antonio Gutiérrez (Madrid: Imprenta Real, 1796).

52 Benito Bails, *Lecciones de Clave y Principios de Harmonía* (Madrid: Joachin Ibarra, 1775); translation of Anton Bemetzrieder, *Leçons de Clavecin et Principes d'Harmonie* (Paris: Bluet, 1771). See also 'Elementos de Música especulativa', in *Elementos de Matemáticas* (Madrid?: Joaquín Ibarra, 1775), volume 8, 581–662, partial translation of Jean Le Rond d'Alembert, *Elémens de musique théorique et pratique* (Paris: David, 1752).

53 Santa María, *Dialectos músicos*; Tomás de Iriarte, *La Música*, poem (Madrid: Imprenta Real de la Gazeta, 1779); Marqués de Ureña (Gaspar Molina y Saldívar), *Reflexiones sobre la arquitectura, ornato y música del Templo* (Madrid: Joaquín Ibarra, 1785); Manuel Cavaza, *El músico censor del censor no músico* (Madrid: Alfonso López, 1786); Félix Máximo López, *Reglas generales o Escuela de acompañar al órgano o clave*, manuscript (c1780) in Biblioteca Nacional de España, Madrid, M/1188; Fernando Ferandiere, *Arte de tocar la guitarra española por música* (Madrid: Pantaleón Aznar, 1799); Federico Moretti, *Principios para tocar la guitarra de seis órdenes* (Madrid: Librería de I. Sancha, 1799).





Among those who continue using the church keys, one senses a more gradual evolution that suggests a modification of key signatures of the eight tones in a way that would reduce them to just two types of scale, major and minor; in this way the traditional Dorian key signature in the 1st and 2nd tones would be converted to minor with the standardization of the one flat for D and two for G, beginning with Ferandiere in 1771 (see Appendix). Similarly, the Phrygian scale of the 4th tone progressively disappears because of its falling into disuse (as Murcia had pointed out in 1714), the growing preference for the final on A in place of E (the 4th *por la mediación* mentioned from Lorente in 1672 onwards), or even the changing into major in one case (Vargas y Guzmán in 1773). Likewise, there was consolidation of the minor key signatures for the 7th tone and major for the 8th tone, which long before had coexisted with Dorian and Mixolydian key signatures respectively.

On the other hand, the habitual use of transposed tones grew to include an ever greater number of alterations, which resulted in twenty-four tones that spanned the entire chromatic spectrum. In fact, it would become common to use the names of the modern tonalities together with those based on the older tones: G (‘Sol’ or ‘Gsolreut’) major denotes the 8th tone, or C (‘Do’ or ‘Csolfaut’) sharp major denotes the 5th tone a half step higher (as in López).

It would be incorrect and anachronistic to blame a delayed acceptance of the bimodal system in Spain merely on the supposed conservatism of a majority of theorists. Most probably such theorists saw this system as an unnecessary simplification when compared to the eight church keys, each of them with its individual characteristics (which went beyond an intervallic construction indicated by the final and key signature), and which formed an essential part of the training of every educated musician. This sentiment is clear still in 1771 in the mockery that Ferandiere makes of foreign musicians regarding ‘the ridiculousness of their terms, particularly with regard to musical tones’ (‘las ridiculeces de sus términos, particularmente en los tonos musicales’), which is illustrated in the following anecdote: ‘Acuérdome cuando a un célebre virtuoso napolitano le preguntaron que qué tono era el que estaba tocando, a lo que respondió: Nosotros no entendemos de más tono que menor o mayor’ (This reminds me of when a famous Neapolitan violinist was asked which tone it was that he was playing, to which he responded: “We don’t know any tone other than major and minor”).<sup>54</sup>

Nevertheless, the spread of new musical styles that disregarded such nuances, thanks to the wide-ranging diffusion of modern genres completely separated from liturgical practices, made the old theory obsolete. For this reason, even such a staunch opponent as Ferandiere, who had earlier ridiculed bimodal practice, in 1799 had to do away with the eight church keys and explain only the major and minor modes, although he still seems to demonstrate a weak (and ineffectual) resistance by clarifying that this is the ‘way of constructing the tones’ (‘modo de formar los tonos’), ‘supposing that music has no more than two tones, minor and major’ (‘suponiendo que no hay más tonos en la música que dos, mayor y menor’).<sup>55</sup>



The comments of Ferandiere in 1771 closely resemble those of Benedetto Marcello, who in his satirical *Il teatro alla moda* ironically suggests:

Non dovrà il moderno Compositore di Musica possedere notizia veruna delle Regole di ben comporre . . . Non saprà quali, e quanti siano li *Modi* overo *Tuoni*, non come *divisibili*, non le *Proprietà* de medesimi. Anzi sopra di ciò dirà, non darsi che due soli *Tuoni*, *Maggiore*, e *Minore*: cioè, *Maggiore* quello c’hà la *Terza maggiore*, & *Minore* quello, che l’hà *Minore*.<sup>56</sup>

54 Fernando Ferandiere, *Prontuario músico para el instrumentista de violín y cantor* (Málaga: Imprenta de la Catedral de Málaga, 1771), 22.

55 Ferandiere, *Arte de tocar la guitarra*, 7.

56 Benedetto Marcello, *Il teatro alla moda* (Venice: Pinelli, 1720), 15.



The modern music composer must not have any notion of the rules for composing well . . . He will not know which and how many are the modes, or tones, nor how are they divided, or their properties. Rather, he will say on the matter that there are only two tones: major and minor; that is to say, major, which has the major third, and minor, which has the minor third.

It is remarkable that Marcello's *Il teatro alla moda* was published a full half-century before Ferandiere's *Prontuario músico*. It seems that the church keys were abandoned in Spain much later than in Italy. This delay can be explained in part by the leadership exercised in Europe by Italian music of the period, whose innovations were later followed in other countries; yet this phenomenon can be attributed to other, more specific factors. Given the special relationship of this system with ancient religious music in which it had its origin, along with the notorious influence of the Catholic church on Spanish music, which we have noted, it is probable that the continued predominance in Spain of religious music and its institutions (such as its music chapels, the schools associated with them, or the music theory that they continued to teach), in comparison to other European countries, delayed the arrival of new theoretical currents. This can be applied as much to the survival of the eight church keys in opposition to the bimodal system as to the even later acceptance of a harmonic theory, based on the ideas of Rameau, that replaced traditional counterpoint, and even to the abandonment of the traditional hexachordal system of solmization.<sup>57</sup>

The exaggerated influence of the church on music in Spain had a more positive aspect, though, in the eighteenth-century Spanish belief in its own supremacy when it came to religious music. Although enlightened critics of the robust presence that the church maintained in Spanish society during the eighteenth century (whose historical and social causes cannot be fully addressed in this article) were constant, pride in Spanish religious music is not absent from the famous poem *La música* by the enlightened musical aficionado Tomás de Iriarte, who, even recalling the dominance of Germany in instrumental music, of France in music theory, and of Italy in opera, proclaims that 'Spain has produced the wisest and most ingenious masters of religious music' ('España ha producido los más sabios e ingeniosos maestros de música eclesiástica').<sup>58</sup> As we have seen, knowledge of the church keys remained an important practical and conceptual component of these masters' musical lives.

## APPENDICES

### 1. Presentation of the eight church keys by Spanish authors

Tone	1st	2nd	3rd	4th	5th	6th	7th	8th ( <i>por la mediación</i> )	8th ( <i>por el final</i> )
<b>Correa de Araujo</b> 1626	D-♯			E-♯	C-♯	F-♭	A-♯		
<b>Lorente</b> 1672	D-♯	G-♭	E-♯	E-♯ A-♯	C-♯ E-♯	F-♭	E-♯ A-♯	G-♯	D-♯
<b>Sanz<sup>a</sup></b> 1674	D m	G m	E m	E M	C M	F M	A m	G M	
<b>Nassarre</b> 1683	D-♯	G-♭	E-♯	E-♯	C-♯	F-♭	A-♯	G-♯	D-♯
<b>Guerau<sup>b</sup></b> 1684	D m	G m	E m	E M	C M	F M	A m	G M	D M

<sup>57</sup> On the diffusion of Rameau's harmonic theory in Spain see García Gallardo, 'La llegada de las teorías de Rameau a España', in 'El tratamiento de la sintaxis armónica', 271–419. On the abandonment of the hexachordal system see León Tello, *Historia de la teoría española*.

<sup>58</sup> Iriarte, *La Música*, xxi.



Appendix 1. *continued*

Tone	1st	2nd	3rd	4th	5th	6th	7th	8th ( <i>por la mediación</i> )	8th ( <i>por el final</i> )
<b>Torres</b> 1702	D–♯	G–♭	E–♯	E–♯ A–♯	C–♯ E–♯	F–♭	A–♯[?] E–♯	G–♯	D–♯
<b>Fernández de Huete</b> 1704	D–♯	G–♭	E–♯	E–♯	C–♯	F–♭	A–♯ A [?]	D–♯ D–♯♯	G–♯ G–♯[?]
<b>Murcia</b> 1714	D–♯	G–♭	E–♯	E–♯	C–♯	F–♭	A–♯	G–♯	D–♯♯
<b>Nassarre</b> 1723–1724	D–♯	G–♭	E–♯	E–♯ A–♯	C–♯ E–♯	F–♭	A–♯ E–♯ D–♯	G–♯	D–♯
<b>Rabassa</b> c1725 <sup>c</sup>	D–♯	G–♭	E–♯	E–♯	C–♯	F–♭	A–♯	G–♯	D–♯
<b>Valls</b> 1742	A–♯	G–♭	E–♯	E–♯	C–♯	F–♭	A–♯	G–♯	D–♯
<b>Roel del Río</b> 1748	D–♯	G–♭	E–♯	E–♯ A–♯	C–♯	F–♭	E–♯ A–♯	G–♯	D–♯
<b>Minguet</b> 1753	D–♯	G–♭	E–♯	E–♯	C–♯	F–♭	A–♯	G–♯	
<b>Herrando</b> 1756	D–♯	G–♭	E–♯	E–♯	C–♯	F–♭	A–♯	G–♯	
<b>Rodríguez de Hita<sup>d</sup></b> 1757	D–♯	E–♯ G–♭	E–♯	E–♯	E–♯ C–♯	F–♭	A–♯ E–♯ D–♯ G–♯	G–♯[?]	D–♯
<b>Ferandiere</b> 1771	D–♭	G–♭♭	E–♯		C–♯	F–♭	A–♯	G–♯	
<b>Vargas y Guzmán</b> 1773	D–♯	G–♭♭	E–♯	E–♯♯♯♯ A–♯	C–♯	F–♭	A–♯ D–♯	G–♯	
<b>Marcos y Navas</b> 1776	D–♯	G–♭	E–♯	E–♯	C–♯	F–♭	A–♯	G–♯	
<b>López</b> c. 1780	D–♭	G–♭♭	E–♯		C–♯	F–♭	A–♯	G–♯	
<b>Manuscrito guitarra</b> c1790?	D–♭	G–♭♭	E–♯	(E–♯)	C–♯	F–♭	A–♯	G–♯	
<b>García Rubio</b> 1799	D–♯	G–♭	E–♯		C–♯	F–♭	A–♯	G–♯	
<b>Palatín</b> 1818	D–♭	G–♭♭	E–♯		C–♯	F–♭	A–♯	G–♯	
<b>Hernández</b> 1837	D–♭	G–♭♭	E–♯	A–♯	C–♯	F–♭	A–♯	G–♯	D–♯

Notes: We reflect here, for the sake of clarity, only actual pitches and key signatures (obtained by the conventional transposition a perfect fourth lower) when theorists write them in high clefs, since this practice disappeared in the second half of the eighteenth century.

<sup>a</sup> Sanz describes the church keys simply by means of a final triad, indicated in the table as either 'M' or 'm'.

<sup>b</sup> Guerau gives no theoretical explanation of the church keys, but offers *pasacalles* for each one of them. Thus for each of his *pasacalles* we indicate the initial triad, which must also end the piece, though Guerau does not deem it necessary to write it.

<sup>c</sup> Although the existing manuscript copy of the *Guía Para los Principiantes* by Rabassa would have to have been written in about 1767, the date of writing suggested by various researchers ranges between 1720 and 1738.

<sup>d</sup> Rodríguez de Hita offers two customary possibilities for the 8th tone, but does not clarify expressly that the first is based on its natural final, though he does suggest that the other one concludes on its mediation.



2. *Chronological list of sources given in Appendix 1*

- Francisco Correa de Araujo, *Libro de tientos y discursos de música práctica y teórica de órgano [intitulado Facultad orgánica]* (Alcalá: Antonio Arnao, 1626; facsimile edition, Geneva: Minkoff, 1981).
- Andrés Lorente, *El Por qué de la Música* (Alcalá de Henares: Nicolás de Xamares, 1672; facsimile edition, ed. José Vicente González Valle, Barcelona: Institución Milá y Fontanals, 2002).
- Gaspar Sanz, *Institución de música sobre la guitarra española*, facsimile of the third edition, books 1 and 2 (Zaragoza: Herederos de Diego Dormer, 1674), and the eighth edition, book 3 (Zaragoza: Herederos de Diego Dormer, 1697), ed. Luis García Abrines and others (Zaragoza: Institución Fernando el Católico, 1979).
- Pablo Nassarre, *Fragmentos musicales*, second edition (Madrid: Imprenta de Música, 1700 (first edition, Zaragoza: Tomás Gaspar Martínez 1683); facsimile edition of volume 1, ed. Álvaro Zaldívar García, Zaragoza: Institución Fernando el Católico, 1988, 60–63, 107–116).
- Francisco Guerau, *Poema harmónico: compuesto de varias cifras por el temple de la guitarra española* (Madrid: Imprenta de Manuel Ruiz de Murga, 1694; facsimile edition, ed. Thomas Schmitt, Madrid: Alpuerto, 2000).
- José de Torres y Martínez Bravo, *Reglas generales de acompañar, en órgano, clavicordio, y harpa, con solo saber cantar la parte o un baxo en canto figurado* (Madrid: Imprenta de Música, 1702, and Madrid: Imprenta de Música, 1736; facsimile edition, ed. with Introduction by Gerardo Arriaga, Madrid: Arte Tripharia, 1983).
- Fernández de Huete, *Compendio numeroso de zifras armónicas, con theórica, y práctica, para harpa de una orden, de dos órdenes y de órgano*, two volumes (Madrid: Imprenta de Música, 1702–1704; facsimile edition, ed. María Rosa Calvo-Manzano, Madrid: Alpuerto, 1992).
- Santiago de Murcia, *Resumen de acompañar la parte con la guitarra* (apparently engraved in Amberes, 1714, and published in Madrid, 1717; facsimile edition, ed. with Introduction by Monica Hall, Monaco: Chanterelle, 1980).
- Pablo Nassarre, *Escuela música según la práctica moderna* (Zaragoza: Herederos de Manuel Román / Herederos de Diego de Larumbe, 1723–1724; facsimile edition, ed. with a preliminary study by Lothar Siemens, two volumes, Zaragoza: Institución Fernando el Católico, 1980).
- Pedro Rabassa, *Guía Para los Principiantes: que dessean Perfeccionarse en la Compossion de la Mussica*, facsimile edition of the manuscript from Real Colegio del Corpus Christi de Valencia, c1767, ed. with Introduction by Francesc Bonastre, Antonio Martín Moreno and Josep Climent (Bellaterra: Institut Universitari de Documentació i d'Investigació Musicològiques 'Josep Ricart i Matas', 1990).
- Francesc Valls, *Mapa Armónico Práctico (1742a)*, facsimile edition of the manuscript from Barcelona, Biblioteca de la Universidad de Barcelona, Ms. 783, ed. Josep Pavia i Simó (Barcelona: Institución Milá y Fontanals, 2002).
- Antonio Ventura Roel del Río, *Institución harmonica o Doctrina música theórica y práctica, que trata del canto llano, y de órgano, exactamente, y según el moderno estilo explicada, de suerte que escusa casi de maestro* (Madrid: Herederos de la viuda de Juan García infanzón, 1748).
- Pablo Minguet e Yrol, *Reglas y advertencias generales para tañer la guitarra, tiple y vandola con variedad de sones, danzas, y otras cosas semejantes, demostradas y figuradas en diferentes láminas finas, por música y cifra al estilo castellano, italiano, catalán y francés, para que cualquier aficionado las pueda comprehender con mucha facilidad y sin maestro* (Madrid: Joachin Ibarra, 1753[?]).
- José Herrando, *Arte y puntual explicación del modo de tocar el violin con perfección y facilidad* (Paris: Joannes a Cruce, 1756).
- Antonio Rodríguez de Hita, *Diapasón instructivo* (Madrid: Imprenta de la viuda de Juan Muñoz, 1757).
- Fernando Ferandiere, *Prontuario músico para el instrumentista de violin y cantor* (Málaga: Imprenta de la Catedral de Málaga, 1771).
- Juan Antonio de Vargas y Guzmán, *Explicación de la guitarra*, edition of the manuscript (Cádiz, 1773) from the Biblioteca Medina, Oviedo, ed. Ángel Medina Álvarez (Granada: Centro de Documentación Musical de Andalucía, 1994).
- Francisco Marcos y Navas, *Arte o compendio del canto llano, figurado y órgano* (Madrid: Imprenta de Joseph Doblado, 1776).



- Félix Máximo López, *Reglas generales o Escuela de acompañar al órgano o clave*, facsimile of the manuscript, c1780, from the Biblioteca Nacional de España, Madrid, M/1188, in Nohema del Carmen Fernández, *A Late Eighteenth[-]Century Spanish Figured-Bass Method: 'Reglas generales o escuela de acompañar al órgano o clave' by Félix Máximo López (1742–1821)* (Ann Arbor: UMI, 2006).
- Manuscript, c1790, Biblioteca Nacional de España, Madrid, Mp/1659, including an 'Explicación y conocimiento de los 24 tonos, escritos por un profesor de mérito' and works by Ferandiere copied in Cádiz, 1790.
- Juan Manuel García Rubio, 'Reglas y Escalas Armónicas para aprehender a Templar y puntear la guitarra española de seis órdenes según el estilo moderno', manuscript (1799), Biblioteca Nacional de España, Madrid, M/1236.
- Fernando Palatín, *Diccionario de música*, ed. Ángel Medina Álvarez from the manuscript (Seville, 1818) from Oviedo, Archivo A. Medina, Ms. Palatín (Oviedo: Universidad de Oviedo, 1990).
- Blas Hernández [Domingo], *Manual armónico o Método teórico elemental de la composición de Música* (Logroño: Imprenta Félix Delgado, 1837).