

MUSICA FICTA IN 16th- CENTURY VOCAL WORKS

1.Describing the Problem

Throughout much of the Renaissance period, most of the *musica ficta* issue occur mainly in cadential (and similar) passages, both ascending and descending. As we have stated, those **leading tones** were not written neither in the manuscripts nor in the editions during the century. A practice dating back several centuries established that these were deliberately omitted, since the composer presupposed that the performer of the time, trained in music reading, performed them on his own according to a set of rules transmitted by oral tradition. The current transcription of a Renaissance polyphonic work must reconstruct and provide a proposal for the necessary unwritten notes, to enable the our days performers to come as close as possible to the sound and harmony reality of that period. We will try here that approach.

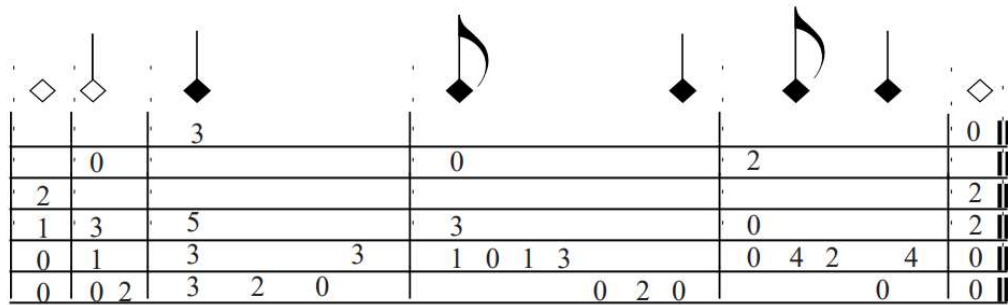
The theories of the time have not directly addressed this very important aspect of the interpretation of Renaissance works, taking it for granted. Faced with this situation, modern musicology has had to resort to "indirect" sources that allowed it to solve in a more or less systematic way the problematic issue raised here.

Although the most punctilious theories of the 16th century, such as *Arte de tañer Fantasia*, by Fray Thomas de Sancta María (published in Valladolid in 1565), differentiate between *cadencias sostenidas* (sustained, with their leading tone, where its fundamental is resolved by ascending semitone) and *cadencias remisas* (frequent in the Phrygian tone (E) and without leading tone to the fundamental, resolved by tone). Unfortunately, these leading tones are not written in Sancta Maria's own musical examples. By contrast, towards the end of the 16th and the beginning of the 17th century, in the editions of Claudio Monteverdi's *madrigals* and John Dowland's *ayres* -to cite just a couple of examples- we can observe a greater care to make explicit in the score the alterations that correspond to each particular sound.

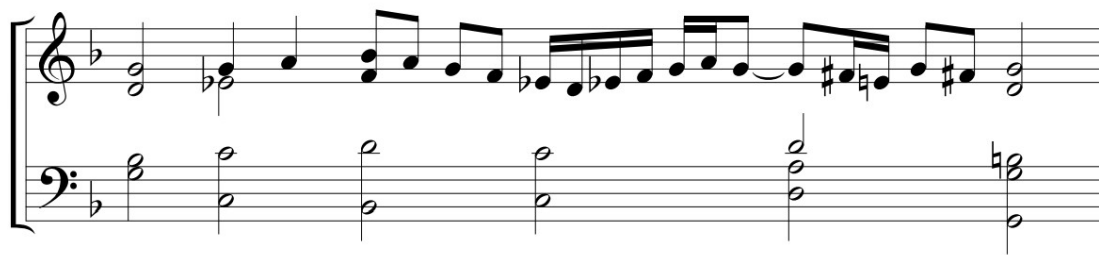
At the end of 1500 the harmonic language had undergone an important evolution; in addition, the experiences in the chromatic genre led by the Italian theorist and composer Nicoló Vicentino (1511?-72) and his followers, whose arc of influence also included Flemish (Lassus, Rore) and French (Costeley, Le Jeune), made indispensable a musical writing that did not bring any doubt as far as the alterations to be applied in certain sounds.

The main "*indirect*" source, undoubtedly effective, that has allowed musicologists to reconstruct the rules governing *musica ficta* that were in fact realized in that period are the transcriptions for lute of polyphonic works. Since the beginning of the century, it had been common practice for works for 4 and 5 voices to be reduced in tablature for a polyphonic instrument such as lute, vihuela or keyboards. These tablatures for lute or vihuela were not scores where the notes to be played were written, but consisted of a graphic representation of the strings of the instrument, by means of six parallel lines, which correspond to the six strings (or orders) of the lute. On them, the exact place where each finger should rest is indicated by letters or numbers (depending on whether they are tablatures made by Flemish, French, Spanish or German), as well as a precise indication of the time during which that string should sound.

In this way, contemporary musicologists have been able to reconstruct which exact sounds make up each tablature. By comparing these lute versions with the original vocal works, it has been possible to evaluate an infinite number of cases in which the leading tones not written in the original vocal work were undoubtedly realized in practice. Let's see an example taken from one of the most important Spanish collections for the vihuela (Spanish correlate to the lute): *Los 6 libros del Delfín de música* by Luis de Narváez, Philip II's¹ vihuela master, published in Valladolid in 1538. In the 6 volumes of this collection² we find both original works for the instrument and a large number of transcriptions –*reducciones*– for vihuela of vocal works by Spanish and Flemish composers.



Transcription of the tablature (rhythms values has been reduced 1/2)³



In this case we can clearly observe the great importance of this indirect source of Musicology. This example is written in the 2nd transposed tone (*hypodoric* over G). This led to the inclusion of the B flat in key in the transcription. The remaining alterations (Eb, F#, B natural) were not usually written on the original vocal *particelle*. Each one of them has its justification according to the stylistic characteristics of the harmony of that period:

- 1- The Eb of the 2nd chord is a leading tone of the B chord in which it resolves.
- 2- Next Eb should be performed to avoid the melodic *tritone* in the same voice (Bb-E).
- 3- The two F# are usual in cadential resolutions.
- 4- The natural B of the final chord is the "major" ending (*3rd of Picardy*), usually used in works that are in one of the "minor" tones (Dorian, Phrygian and Aeolian).

¹ Spanish king between 1556-98

² *Los 6 Libros del Delfín* contain: "Books I and II": 14 Fantasies; "Book III": Reductions for vihuela of religious works by Josquin, Richafort and Gombert; "Book IV": Transcribed religious hymns for vihuela; and "Books V and VI": Reductions of villancicos and romances from the Cancionero de Palacio Songbook and variations of popular melodies of the time.

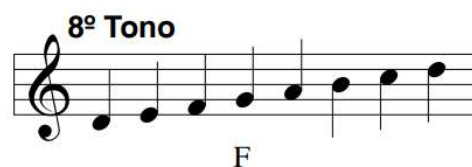
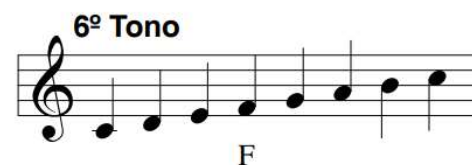
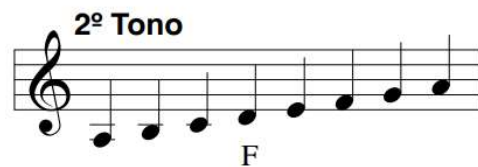
³ Extracted from the prologue of the book

2- Brief review of the Tone (Mode) Theory

The theory of music throughout the 16th century was that of tones (or modes). This theory, enriched and updated over the decades, was initially based on 4 one-octave scales with different intervallic distribution. These four scales or tones begin at the D-E-F-G sounds respectively, culminate at their octave and were called “master or principal” tones⁴.

In turn, the *master tones* give rise to four other tones derived from them, called *disciples*. The *disciples* take their initial *diapente* (5th) from the *masters* and complete their octave towards the bass from their fundamental sound (*finalis*).

The 8 tones are ordered numerically, the *masters* being 1st, 3rd, 5th and 7th, and the *disciples* 2nd, 4th, 6th and 8th. Despite their different tessitura, each master tone and its disciple have in common their *finalis* (final note), which serves as the tonic. The *finalis* is the fundamental sound or its chord, depending on whether it is a plainchant or a polyphonic work, and it is the one in which the work must end. Let's see then the scales corresponding to the eight tones:



Various theoretical treatises published throughout the 16th century also gave the eight tones the names that the ancient Greeks had used. After some differences between the treatises, the names were generalized as follows:

⁴ Throughout this chapter we shall base ourselves on the book called *Arte de tañer Fantasia*, by Fray Thomas de Sancta Maria, chap. XXIII, “*De los ocho tonos generales*”, fo 60 and ff., edited in Valladolid in 1565 (although, as explained in its prologue, the theory had been concluded since 1557), facsimile edition published by Gregg International, 1972.

1°: Doric 3°: Phrygian 5°: Lidium 7°: Mixolydian
 2°: Hypodoric 4°: Hypophrygian 6°: Hypolidium 8°: Hypomixolidium

The eight "*natural*" tones (name given by Sancta Maria) have in common their key signature without alterations. From this point, we can begin to understand how far the real practice of music at that time was from the theory that supported it.

Now, Sancta Maria himself admits that works written in the key of F must have Bb in their key. There is no theoretical explanation for this situation which, in fact, was put into practice almost without exception since the beginning of the century. The inclusion of the Bb obeys to common sense reasons: in the works in Lydian B should be constantly "flatted" due to the need to "perfect" the melodic leap of the 4th F-B, basic rule of *musica ficta*, as we will see. This practice also extended from the middle of the century, although not constantly, to many works written in the 2nd tone (Hypodoric), transforming it in fact into the future scale of D minor.

Returning to the theory of Sancta Maria, he maintains that the 8 "natural" tones can be transposed. Despite his advanced proposals the actual practice showed that only some tones admit transpositions. Let's see:

The 1st and 2nd tones (Doric and hypodoric) can be transposed a 4th higher tone (or a 5th lower tone), by adding the Bb to their key



The 3rd and 4th tones (Phrygian and Hypo-Phrygian) can also be transposed with Bb in their key



As mentioned above, the F tones already have the Bb in their key, so the methodology applied to the previous cases is no longer valid. In the "inverse" sense, by eliminating the Bb, the 5th and 6th tones can be transposed to C. Finally, the 7th and 8th can be transposed by means of the Bb in the key.



Sancta Maria clearly explains the method to be followed in order to recognize the tone in which a work is written a polyphonic wok. It is distinguished by three qualities:

- 1- its key signature
- 2- the tessitura of the upper voice
- 3- its final chord

By the key signature we will know if it is either a natural tone, transposed or F tone. The upper voice's tessitura will indicate whether it is a master or disciple tone. Its final chord will mark the tone of the work. Thus, for example, it is possible to differentiate between the natural 1° and 8° tones, which have the same tessitura and key signature, but different "*finalis*" note.

With regard to the leading tones to be applied in the cadential passages (*clausulas*), Sancta Maria tells us:

"...la clausula sostenida puede fenescer en cualquiera de (las siguientes) bozes (sonidos) naturales ut, re, fa, sol, la...(y) el punto (sonido) que inmediatamente se baxa...necesariamente ha de ser sostenido ..."

"...a strong cadence may end in any of the following natural sounds C-D-F-G-A and the sound immediately preceding must necessarily be *chromatical*..."

The author thus warns of the need to use leading tones in the cadences on C (transposed myxolydian), D (Dorian), F (Lydian, innate of its scale), G (transposed Dorian or myxolydian) and A (Aeolian). This is one of the clearest references to apply *musica ficta* that we have received from a theory of that period.

Sancta Maria alludes tangentially to the existence of the missing tones in his work: Aeolian (on A) and Ionian (C). Other theories of the time (such as Glareanus' *Dodecachordon*, published in 1545) incorporate these tones, which, despite not being "accepted" in some 16th century music theories, were used in many polyphonic works from the beginning of the century.

3.Causes of Alterations (applying *musica ficta*)

There were basically two types of situations to which *musica ficta* should be applied. These could be due to causes of necessity (*causa Necessitatis*) or of good taste (*causa Pulchritudinis*).

The *causa Necessitatis* is generally invoked when it's absolutely necessary to perfect harmonic *octaves* or *fifths*, to avoid melodic *tritones* (as we shall see at length below), and, as its name indicates, the need of a specific alteration (either ascending or descending, as the case may be) is indispensable.

The *causa Pulchritudinis*, on the other hand, is invoked in passages when we decide to perform that alteration without there being a harmonic or melodic reason to do so. Therefore, we can say in a general way that, for reasons of good taste or beauty, most of the cadential passages in the vocal works of the 16th century must be altered.

The *causa Pulchritudinis* does not imply that today's performer may or may not wish to apply *musica ficta* for his personal taste; it only clarifies that Renaissance musicians did

so in those passages, since that was the custom and the musical taste of the time⁵. The growing process of the use of unwritten alterations in vocal works, that began to take shape from the end of the 15th century, meant that the theory of tones was very "delayed" from the real and everyday musical practice in the second half of the 16th century. Gradually, this process led to the arrival of the bi-modal tonal system in the first half of the 17th century. It is within this framework that we must understand the enormous importance that the application of unwritten alterations had in the evolution of harmony throughout the 1500s.

4.Previous technical aspects

Before giving way to the exemplifications, we must clarify some elements that will allow us to understand the essence of what was the use of *musica ficta* in the period.

Several distinctive elements are found in cadential passages, and each of them plays a role in the natural game of harmonic tension and relaxation. Initially, it's clear that the greatest tension in a cadential passage is in the chord before the final resolution or, in simple terms, in the V degree of that dominant-tonic relationship. A double melodic movement is produced very frequently in that moment of highest harmonic tension (on which V, as we will see later, sometimes can be replaced by IV or VII). Usually that is represented by a 4-3 retard, mainly in the upper voice, something that gradually foretells the end of the phrase. This retard represents the moment of greatest tension in the passage; its resolution implies the beginning of relaxation, which is accentuated when it culminates in the I.

Let's see it in a practical example: the following is a passage from the 4 voice chanson *Je ne fus jamais si aise* by Clement Janequin (1529)⁶. This work is written in the 2nd tone, hypodoric transposed on G.

In this passage corresponding to the end of the first section of the work, conclusive, we can see clearly those elements mentioned above:

1.Retard 7-6 (4-3 seen from the B part), between S-T over the V degree

⁵ We must emphasize that if the interpreter of our days decides not to apply *musica ficta* by understanding that ancient music was "modal and must sound archaic", he or she is not only mistaken about the sound reality of that period, but also ignores one of the main contributions that modern musicology has made towards the most reliable reconstruction of the polyphonic works of the 16th century.

⁶ The date indicated below for each musical example corresponds to that of its first edition, that is, the date closest to its composition.

2. Its resolution, still on the V
3. Harmonic resolution to I

As we have anticipated, the resolution of the retard on V (2) must be altered (not written by the composer) and must be placed on the note in question and *outside the corresponding staff*. In this way, the modern reviewer indicates that this alteration is suggested by him; so, the performer is able to make the best possible use of the stave.

In this way, the modern reviewer indicates that this alteration is suggested by him; the performer is then in a position to accept or not this musicological proposal.

As in the chapter on text underlay, we will systematize here the **constants** that reflect the musical practice of that period.

5. Cadential leading tones

CONSTANT 1

In cadences at the end of phrases or musical sections, the resolution of the 4-3 retard on V degree must be altered, specially in dorian, mixolydium and aeolian tones (*Causa Pulchritudinis*)

Usually, the end of phrase coincide with the rhyme (end of verse). Nevertheless, in some cases -especially after 1550- there are poetic-musical overlaps that can generate cadences during the course of the next verse, obviously not coinciding with the rhyme.

Example 1A

Au joli bois, 4, Dorian, Claudin de Sermisy(1529)

It is possible that in the selected examples several unwritten alterations are proposed. One of them is the one that corresponds to the constant mentioned; the others will be understood later on.

Example 1B

Serrana del bel mirar, mixolydian, Millan, *Cancionero de Palacio* (1480-1520)

E - na - mo - ro - me - su can - tar

Example 1C

Amor, por quien yo padesco, aeolian, Femoselle, *Canc. de Palacio*

do - - - lo - ri - da

Since cadences with a 4-3 retard over the V are extremely frequent in polyphonic works of the Renaissance period, we assume their constant alteration "*de facto*" by singers and instrumentalists of the time.

The composers had a simple resource by which they could "indicate" to the interpreter that in a certain passage they did not wish the application of *musica ficta*. This consisted in the duplication in another voice of the 3rd of the chord of the V over the resolution of the 4-3 delay, with a clear descending melodic directionality. In the following example, we can see that, in the case of alter the upper voice, an interval of augmented 8th (which did not exist at that time) would be formed between it and its duplication in the tenor.

Example 1D

Par fin despit, Claudin de Sermisy(?) (1534)

d'ung - buis - - - son

a l'om - bre d'ung buis - son

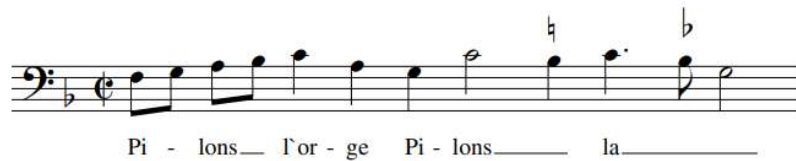
This resource, although not much used, reveals the composer's interest in indicating to the singer his desire that this passage must not be altered, and clearly shows how widespread *musica ficta* practice was in the 16th century.

SPECIAL CASE AFTER APPLICATION OF CONSTANT 1

In some cases, a musical phrase ends after a few notes added after the cadence resolution; if the leading note that has been altered does not resolve into its tonic, it should not be altered.

Example 1E

Pilons l'orge, Claudin de Sermisy (1538)



Example 1F

Quedate Carillo adios, Juan del Encina (1498)



CONSTANT 2

Half cadences must be altered (*Causa Pulchritudinis*)

The half cadence resolves on the V and in it, its usual harmonic path is IV (or VI) -V regarding to the tonic. Although this *suspensive* cadence implies a harmonic rest, it is *not conclusive* and is characterized by the melodic movement by descending semitone in the upper voice.

Example 2A

Llamo a la muerte, Gines de Morata, *Canc. de Medinaceli* (1540-70)

Example 2B

Se la dura durezza, Jacques Arcadelt, (1539)

as - sai lie - ta mia sor - - - te

VI IV V

CONSTANT 3

The final chord on works on the 3rd and 4th tones (Phrygian and Hipophrygian), after the Phrygian cadence, must use the picardy 3rd.

The application of this constant in similar cadences during the course of the work is less frequent.

In the next 2 examples we'll observe the great similarity between the half (or suspensive) and the *remisa* cadence VII-I, characteristic of the works in Phrygian. The Phrygian has a weak tonic because it is the only mode that lacks V with leading note. In both examples the upper voice proceeds by tone, and the 3rd of the tonic is sung by an internal voice. This trace differentiates these VII-I *remisas* cadences from the half ones, where almost always the 3rd is sung by the upper voice.

Example 3A

Donna quando pietosa, Jacques Arcadelt (ca 1540), cadential over the course of the work

stru - ger - si

VII I

Example 3B

Todo mi bien e perdido, Juan Ponce, *Canc. de Palacio*, end of the work

The image shows a musical score for a four-part setting. The lyrics are 'A - yu - dad - me - lo a bus - - - car'. The score consists of four staves: Soprano, Alto, Tenor, and Bass. The Soprano and Alto parts end with a half note G. The Tenor part ends with a half note G, which is marked with a sharp sign (#) in the original. The Bass part ends with a half note G. Below the Bass staff, the figured bass notation is given as VII, I, IV, I, corresponding to the final chords of the four parts.

In this example you can notice the weakness of the Phrygian tonic. The upper voice proceeds by tone, as a resolution of the retard 7-6 that is performed on the VII (*remisa*). Since this is the end of the work, the composer "needed" to add a coda IV-I to give a somewhat firmer concluding feeling. The leading tones in the Phrygian works represent another stage in the evolution of harmony. To our ears, these "sound" like works in A minor that would end on his V. This process of "*loss of own entity*" of the Phrygian was happening throughout the second half of the 16th century and first decades of the 17th, time in which the election of that tone was rare in vocal or instrumental works. In this case, we propose to alter the tenor's G (as it is the one in which he solved the *remisa* cadence VII-I), and which is at the same time an anticipation of the final chord of the work, where the # is written in the original.

CONSTANT 4

The final chord of a written work in the "minor" modes (Doric, Phrygian and Aeolian) may have the 3rd of Picardy (*Causa Pulchritudinis*)

The use of the Picardy 3rd at the final chord of the work, which undoubtedly gives it a stronger conclusion, is a practice that was considerably affirmed in the last quarter of the 16th century. Nevertheless, there are many previous examples that show us that this resource was used much earlier, although it was not indicated by the composer.

It could be generally assumed, then, that the *Picardy* 3rd should safely be used in works written during the 2nd half of the 16th century and, with some reservations, in earlier ones.

As a primary observation on 4-part works written in the first decades of the 16th century, one could say that, in most cases, works end with a chord in which there is a triple fundamental and an open 5th. Curiously enough, the next step in the development of 16th century style was the replacement of the 5th for the 3rd, as exemplified by many Parisian chansons of the 1530s and 1540s, especially those of Sermisy's. Finally, and still in 4-part writing, from 1550 onwards, these two possibilities alternate with the complete form of the chord, showing a duplication of the fundamental, the 3rd, and the 5th. It is for the latter cases, when the chord is complete, that the use of the *Picardy* 3rd is suggested.

Example 4A

Por do començare, Pedro Guerrero, *Canc. de Medinaceli*, end of the *madrigal*

mi des-ven-tu - ra

mi des-ven-tu - ra, mi des-ven-tu - ra

mi des-ven-tu - ra, mi des-ven-tu - ra

mi des-ven-tu - - - ra

Example 4B

Pues que me tiene Miguel, Ortega, *Canc. de Medinaceli*, end of the work

có - mo soy her - mo - sa

A special case is the works for 5 or more voices, in which the composers wrote complete final chords, often with triple fundamental, 5th and 3rd since the beginning of the century. In these works it is possible the use of constant 4 at the final chord, as long as the melodic movement of the voice singing the 3rd is done by a joint degree towards it.

Example 4C

Je ne me puis tenir d'aimer, Josquin des Pres (?) ca. 1500, end of the *chanson*

mort est a de - mi

In the last decades of the 16th century, the final chord of a polyphonic work is generally written with the alterations desired by the author in the originals, and only exceptionally is the application of *ficta* necessary.

CONSTANT 5

Descending chromaticism of the 6th scale degree in Dorian mode when in Plagal cadence function. (*Causa Pulchritudinis*)

Example 5A

Mon Coeur gist, Claudin de Sermisy (1528), end of the *chanson*

The musical score for 'Mon Coeur gist' by Claudin de Sermisy is presented in four staves. The first staff is a vocal line in Dorian mode (one flat). The second and third staves are lute accompaniment. The fourth staff is a basso continuo line. The lyrics are: 'tout son coeur, tout son coeur, de tout son coeur'. The piece ends with a plagal cadence, marked with 'IV' and 'I' below the bass line.

From these examples we will find several of the previous constants combined with others that will be explained later on.

Example 5B

Plusieurs regrets, Josquin des Pres

The musical score for 'Plusieurs regrets' by Josquin des Pres is presented in four staves. The first staff is a vocal line in Dorian mode (one flat). The second and third staves are lute accompaniment. The fourth staff is a basso continuo line. The lyrics are: 'sça - vent plus qu'ilz font'. The piece ends with a plagal cadence, marked with 'IV' and 'I' below the bass line.

CONSTANT 6

The chord preceding a half cadence must be altered (*Causa Pulchritudinis*)

According to the alteration of this chord, it will be (regarding to the tonic) either the minor IV, or II (V of the half cadence without its fundamental). Both possibilities are correct, though the first option is preferred.

Example 6^a (Case 1)

Soy contento i vos servida, Juan del Encina (Hipodorian on G)

Case 1

In this case, the half cadence is preceded by IV (C) in first inversion and with a 7-6 retard that resolves by whole step on the tenor part.

Case 2

This possibility, although used at the time, was less used. The tone of the work is G, and as it precedes the V (D) by a sustained cadence, it gives a greater sense of conclusion, which is somehow contradictory to the essence of the half cadence.

Example 6B

Mon coeur gist, Claudin de Sermisy (1528)

During this T-B duet, the other voices are silent. The work is in the 2nd transposed tone (G), therefore the half cadence is performed on D. This first proposal is the most appropriate: the imitation between the two voices forces to apply *ficta* in the four E of the passage; the last E of the bass is the one that is altered following CONSTANT 6. Later on we will explain the reason of the remaining Eb.

The next option for the same passage "cancels out" the inconclusive characteristic of the half cadence, and is less recommended, specially for the close melodic tritone on the T part.

Example 6C

Huyd, o ciegos amadores, Francisco Guerrero (ca 1550), *Canc. de Medinaceli*

Here we see how the minor tonality that will replace the Doric and Phrygian modes during the 17th century is already clearly present in cadential and pre-cadential passages.

6. Alterations in non-cadential passages

CONSTANT 7

It is absolutely necessary to avoid the melodic tritone, particularly when there is a change in the direction of the line. The melodic tritone is only acceptable when the melody moves upward and continues in an ascending fashion.

Vous marchez du bout du pie, Adrian Willaert (1536)



in - ge - ni - i vo - ve - ant et mo - nu - men - ta su - i

Example 7C

que la lu - - - - - ne

Example 7D

[illegible]

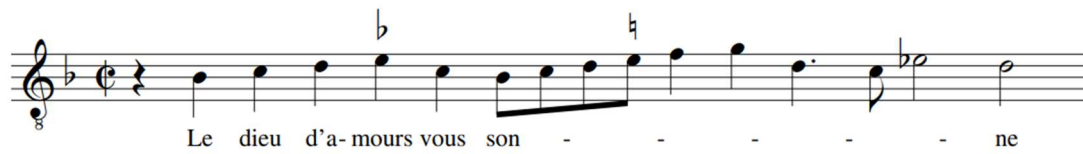
Example 7E

no - bis di - - - gne - ris

16

Example 7F

Le chant des oiseaux, Clement Janequin (2nd version, 1537)



Extension of the Constant 7

It should be avoided the 6th major melodic leap

This melodic leap was deliberately avoided by composers until 1550. From that decade on, it began to be used especially in Italian madrigals to emphasize melancholic passages of the text.

Example 7G

Beatus homo, Orlando de Lassus, 2v (1577)



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CONSTANT 8

The harmonic interval of 8th must always be perfect
(*Causa Necessitatis*)

The interpreters of that time, as it has already been specified, had separate and individual *particelle* for which each voice. If, by superimposing the voices, they "heard" an interval of 8a increased or decreased, they applied *ficta* in the corresponding voice to "perfect" it. In some cases, another constant “forces” them to do the same.

Example 8A

Au joli bois, Claudin de Sermisy, Dorian (ca 1530)



The B of the S, necessary to perfect the 8th with the bass, was not predictable by any *ficta* melodic rule.

On the other hand, the B of the first tenor was already necessary to avoid the melodic tritone in the same voice with its next F.

CONSTANT 9

In imitative passages, identical alterations must be applied.

Example 9A

Quedate Carillo adios, Juan del Encina (1498), *Canc de Palacio*

Musical score for Example 9A, showing a two-part setting of the text "A es - tre - mo quie - ro pa-sar". The score is written for two voices (Soprano and Bass) in a single system. The Soprano part is on a treble clef staff, and the Bass part is on a bass clef staff. The key signature has one flat (B-flat). The Soprano part begins with a whole rest, followed by a half note G4, a quarter note A4, a quarter note B4, a half note G4, a quarter note F4, and a half note E4. The Bass part begins with a whole rest, followed by a half note G3, a quarter note A3, a quarter note B3, a half note G3, a quarter note F3, and a half note E3. The lyrics "A es - tre - mo quie - ro pa-sar" are written below the notes, with hyphens indicating syllable placement.

Example 9B

Mille regrets, Josquin des Pres (ca 1500)

Musical score for Example 9B, showing a four-part setting of the text "Et pai - ne dou-lou-reu - se". The score is written for four voices (Soprano, Alto, Tenor, and Bass) in a single system. The Soprano and Tenor parts are on treble clef staves, and the Alto and Bass parts are on bass clef staves. The key signature has one sharp (F-sharp). The Soprano part begins with a whole rest, followed by a half note G4, a quarter note A4, a quarter note B4, a half note G4, a quarter note F4, and a half note E4. The Alto part begins with a whole rest, followed by a half note G4, a quarter note A4, a quarter note B4, a half note G4, a quarter note F4, and a half note E4. The Tenor part begins with a whole rest, followed by a half note G4, a quarter note A4, a quarter note B4, a half note G4, a quarter note F4, and a half note E4. The Bass part begins with a whole rest, followed by a half note G3, a quarter note A3, a quarter note B3, a half note G3, a quarter note F3, and a half note E3. The lyrics "Et pai - ne dou-lou-reu - se" are written below the notes, with hyphens indicating syllable placement.

7. Inconsistencies

Example 10

Ung gay bergier, Thomas Crecquillon (1543)

This is an excellent example where the author "prevents" some alterations by duplicating the same sound in another voice. But, since the passage is also imitative, and, according to constant 9, the application of *ficta* should be "imitated", inconsistencies appear that are quite difficult to resolve.

As in the text underlay problematic, constants are not infallible. While it is true that they provide solutions for most cases, in some others they are unspecific and even contradictory. Let's analyze this example that is illustrative:

The chanson is written in the 8th tone (hypomixolydian), that is, its tonic is G. The poem is an epigram of seven verses; the phrase chosen sets the second one to music. The cadence where it ends is conclusive, since it is there that the first section of the work closes. It begins with a duet of the higher voices, then imitated by the lower ones (B imitates S, and T imitates A).

From there, an imitative game begins between all 4 voices that includes symmetrical entrances. The S imitates -in its second entry- the 1st phrase of the T; this one, in turn, imitates again S in a textual way. It is between these 2 voices that the contradictions

alluded arise.

1 - The S finishes her initial phrase in a conclusive way, and it would not be wrong to raise her two F (CONSTANT 1). But, the B line prevents her from doing so, as it duplicates both F with a clear downward melodic directionality⁷.

2 - The T imitates A, but ends its sentence with a different and undoubtedly conclusive way, causing the alteration of its F (CONSTANT 1)

3 - The following phrase of the T - extended repetition of the first one - confirms that the alterations in the previous sentence were correct, since here the F# is original in period editions (CONSTANT 9)⁸

4 - We reach the critical point of the passage: the S, when imitating the T, should also imitate the alteration (CONSTANT 9), but... she cannot do so, since again the B duplicates the F.

5 - The final alteration in S is indisputable (end of phrase, CONSTANT 1).

Sometimes these contradictions can be explained with the help of other parameters. CONSTANT 1 states that alterations must be applied in final cadences of the phrase, which also implies that the last syllables of the verse in question must be articulated coinciding with the final cadence.

However, point 4 of the example does not have this characteristic, since the S only finishes her verse at the end of the phrase, on the conclusive cadence. On the other hand, the T did complete the verse with its first phrase. This difference that can be observed in text underlay does separates both phrases and differentiates them. Let's also note that the S imitates that phrase of the T, extending it to give it more development, and, thus conclude the musical section. However, this justification is cancelled out by the second phrase of T, who, like the S, concludes his verse coinciding with the cadence of the end of the section, far beyond the critical F, which in this case carries an original #.

We believe that the solution given in the example is the most appropriate, since it is partially based on CONSTANTS 1 and 9, as well as on the impossibility of ascending some F, because they are duplicated in the B line.

8. Concluding

As we saw in the last example, we will find many other cases like this one, in which the constants will be insufficient to find a unique, adequate and definitive solution.

In spite of these limitations, the scope of the constants presented here is extremely broad, and will allow the modern performer to face the problem of unwritten alterations, in both, vocal and instrumental works of the 16th century, music as complex as it is amazingly beautiful.

⁷ See EXAMPLE 1D above.

⁸ Transcribed to modern notation in *Thomas Crecquillon, 14 Chansons...*, London Pro Musica Edition, London, 1978.