



Marco Pereira Series

Harmony Books

for guitar

Marco Pereira

Book II

1st edition

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Introduction

Harmony is the study of the relationships between two of the most relevant technical aspects of musical practice. The vertical is defined by all types of chords, and the horizontal is always associated with the scales.

From a historical perspective, there is a great period that goes from the homophony of the so-called Gregorian Chant to the beginning of the 20th century. The creation of the dodecaphonic system by Arnold Schoenberg and the development of jazz language were the basis of my research and study to accomplish the work I am now presenting. The focus is not only on the profound understanding of the Tonal System but also on fixing the main concepts that define the use of chords from a purely modal perspective.

The theoretical study of Harmony, being based on acoustic and mathematical principles, had a very diverse and conflicting development. The reason for this lies in the countless possibilities of interpretation of the different scales used and, especially, of a vast number of chords, with the possibilities of interval combinations, their connections, and resolutions. Even so, many divergences were generated by the creation of chord progression rules, not based on acoustic principles but on purely stylistic issues.

This variety of concepts resulted in a true Tower of Babel of symbols and nomenclatures, generating a great discrepancy between important theoretical works written on the subject. What we have today, as an inheritance of this diversity of ideas, is a series of relevant works on Tonal and Modal Harmony that present different interpretations and concepts, making it difficult to understand and associate their contents.

The theoretical elements that govern the relationship between chords must be considered an essential tool for understanding the harmonic process and must always be associated with an obstinate work of ear training and instrumental practice. Thinking, listening, and playing, developed in a balanced way, will be the foundation on which the activity of every musician should be based.

The main objective of the work that I now present is to offer guitarists didactic material on Tonal and Modal Harmony that will help them walk through this complex world of chords and scales. The focus will be on the aesthetics of the jazz language and its consequences, without losing, however, the reference to the harmonic practice enshrined in European music in the 19th and early 20th centuries.

The study of Harmony is a long process and requires a lot of discipline and dedication by the student. However, the harmonic sense, which should guide all musicians in this matter, is a natural faculty that does not depend on any previous theoretical study. Note, for example, that a layperson who has not undergone any type of theoretical training and who is also not familiar with harmonic instruments may perceive chord inconsistencies with the original harmonization of a song or a renowned musical composition. This is because the identity of a song or musical piece has, in addition to its obvious melodic line, an inherent harmonic content, which we keep in our memory, and which makes us notice any discrepancies. So, even before any theoretical study, we can say that we all have in our memory enough information about harmonic relationships that allows us to recognize and judge different chord progressions. The main work that must be carried out by the student will be the decoding and organization of all chord structures, whether through theoretical understanding (thinking), ear training (listening), or instrumental practice (playing). The development of any musician should always be based on two main factors: analysis and repertoire. By analysis, being the ability to understand and assimilate harmonic and melodic content from the widest possible variety of musical themes, from different eras and styles. By repertoire, the intellectual and mechanical memorization of countless musical materials elaborated from scales, chords, arpeggios, melodic phrases, and rhythmic articulations. Mastering different musical styles technically will consistently expand the creative and expressive abilities of each musician.

I hope that these books can become pleasant and stimulating companions for all those who are interested in the fascinating universe of Harmony.

São Paulo, March 20, 2026

Marco Pereira

Other Tonal Scales

Tonal scales are scales whose intervallic structures always feature the perfect fourth, the perfect fifth, and the leading tone. This results in a unique tetrad over the **V**, a chord with a **7** structure and dominant function. This chord, as previously mentioned, is the main reference in the typical cadential movements of the Tonal System. The first four tonal scales, in addition to having fixed intervals of the **IV**, **V**, and **VII**, also present the major second interval between I and II. This interval can be altered without affecting the functional quality of the dominant chord, and for this reason, we can also classify as tonal scales certain scales that have the **II** lowered, forming the minor second interval with the tonic. The alteration of this interval results in a dominant chord with the diminished fifth over the **V**, and in the case of these scales with **bII**, the dominant chord with the altered fifth becomes a chord of the scale. The use of these scales, their resulting chords, and the consequent cadences has limited application. In most cases, the use of their harmonic structures occurs in the process of borrowing chords.

See below the tonal scales with their respective second degrees lowered by a semitone and their main cadences:

Harmonic minor **b2** scale

We will begin with the **b2 harmonic minor scale** due to its prominent role in European musical language as the basis of the **Neapolitan chord**. This scale, partly due to its exotic minor and augmented second intervals, did not spread throughout Europe and other parts of the world as an element of melodic structuring. However, it was from it that the concept of the Neapolitan sixth chord and its application in the so-called Neapolitan School was born¹.

The **b2 harmonic minor scale**, also called the Neapolitan minor scale, has a historical record as originating from southern Italy, more precisely from the Naples region, where it was practiced in popular musical manifestations. It has a close connection with the Phrygian mode² (*which also has bII*), from which it differs only in that the **VII** is a leading tone, representing one of the main elements that give it the status of a tonal scale.

¹ Musical movement formed by Italian composers such as Alessandro Scarlatti, Pergolesi, Paisiello and Cimarosa, among others.

² Remember that all kinds of fleets of Greek, Arab, etc. origin sailed the seas of southern Italy.

Harmonic minor b2 scale

The image shows the Harmonic minor b2 scale in G minor, written in treble clef. The scale notes are G, A^b, B^b, C, D, E, F[#]. Below the scale, nine chords are listed with their guitar fretboard diagrams: F_m7, G7(b⁵), C_m, D^b7_M, G7(b⁵)/B, C_m, A^b7_M, G7(b⁵), and C_m. Below the chords, the corresponding chord voicings are shown in treble clef, with the bass line indicated by a small '8' on the left of each staff.

Track 01

Sol menor napolitana

The image shows the Sol menor napolitana scale in G minor, written in treble clef. The scale notes are G, A^b, B^b, C, D, E, F[#]. Below the scale, a piece titled 'Calmo' is written in treble clef with a tempo marking of ♩ = 56. The piece consists of five staves of music, featuring a melodic line and a harmonic accompaniment.

Melodic minor b2 scale

This is the version of the scale also known as the major Neapolitan scale. Its use in cadential form presents interesting solutions in the IV-V-I or II-V-I combination.

Chord diagrams and staff notation for the C melodic minor b2 scale. The chords shown are: F7, G7(b5), Cm6, D^b7M(#5), G7/D^b, Cm, D^b(⁹#5), G7(b5)/B, and Cm. The staff notation shows the scale in C major with a flat on the second degree (Bb).

Track 02

C melodic minor b2

Musical staff showing the C melodic minor b2 scale: C, D, Eb, E, F, G, A.

Alla Tarantella ♩. = 146

Musical score for 'Alla Tarantella' in C melodic minor b2. The score consists of five staves of music. The first staff begins with a treble clef, a key signature of one flat (Bb), and a common time signature. The tempo is marked 'Alla Tarantella' with a quarter note equal to 146 beats per minute. The score includes various rhythmic patterns, including eighth and sixteenth notes, and rests. The first staff ends with a double bar line and a repeat sign. The second staff continues the melody. The third staff includes first and second endings. The fourth staff continues the melody. The fifth staff concludes the piece with a double bar line and the instruction 'Dal § al fine'.

Harmonic major b2 scale

Also known as the Andalusian scale, its use became established among guitarists of popular music in southern Spain, more specifically in the Andalusia region.

Harmonic major b2 scale

The image shows the Harmonic major b2 scale in G major (D4-G4-A4-B4-C5-D5). The scale is written in a single staff in treble clef. Below it are guitar chord diagrams for D^b7M/A^b, G7(b5), C, Fm^{7M}, G7(b9), C, A^b7M(#5), G7(b5), and C. Below the diagrams is a guitar accompaniment in a single staff, showing the chords and their voicings.

Track 03

Andalusian scale of E

The image shows the Andalusian scale of E in treble clef. The scale is written in a single staff. Below it is a guitar accompaniment in a single staff, showing the scale and its voicings. The tempo is marked as Vivo with a quarter note equal to 98 (Vivo ♩. = 98). The piece ends with a double bar line and a repeat sign, followed by a circled '3x' indicating a triple repeat.

Major scale b2

The b2 major scale is characterized by the dominant seventh chord with a diminished fifth. Using the seventh-degree triad in the cadence offers an excellent result. See and hear the following example:

b2 major scale

The image shows the b2 major scale in treble clef, consisting of the notes D, E, F, G, A, B, C, D. Below the scale, nine guitar chord diagrams are provided for the following sequence: F7M, G7(b5), C, G7(b5), G7(b5)/D, C7M, Am7, G7(b5), and C. Below the diagrams is a musical staff showing the harmonic accompaniment for these chords, with bass notes indicated by a double bar line and a small circle below the staff.

Track 04

D major b2

The image shows the D major b2 scale in treble clef, consisting of the notes D, E, F, G, A, B, C, D. Below the scale, the word "Lento" is written, followed by "6th in D". The main part of the track consists of four staves of music. The first three staves show a guitar accompaniment with a melody line in the treble clef and chords in the bass clef. The fourth staff shows the final cadence, with the instruction "poco rall." written below the staff.

Hungarian minor scale

Also known as the gypsy scale, the Hungarian minor scale represents the fourth mode of the $b2$ harmonic major scale and, due to the two augmented second intervals that occur in its structure, one of them being the leading tone, it maintains a weak but true tonal quality, even with its fourth degree altered.

Hungarian minor scale

D7/A \flat G C m ⁹ A \flat 7 G C m A \flat /F \sharp G C m

Track 05

Hungarian A minor scale

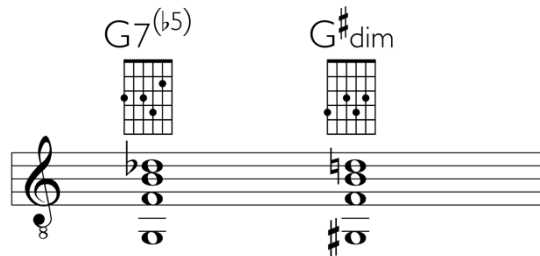
Movido ♩ = 116

Exercise:

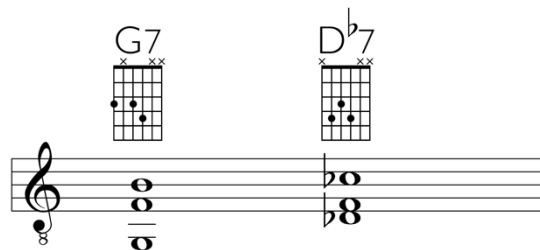
Create harmonic and melodic passages in different keys based on the scales and chords described above.

Resolution of dominants with two tritones

Dominant chords containing two tritones in their structure are of two types: Dominant 7(b5) and diminished dominant chords¹.

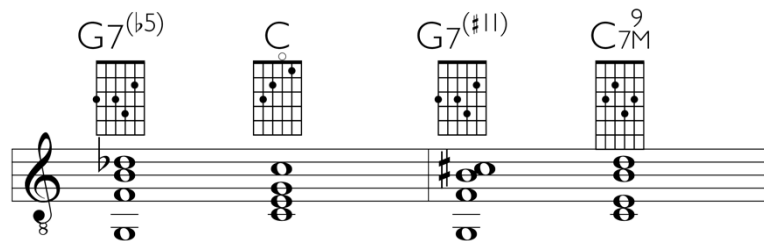


The tritone is the interval that represents the division of the chromatic scale into two equal parts. For this reason, whether as an augmented fourth or a diminished fifth (when inverted), it will always present the same tritone interval structure. Therefore, when we enharmonize the notes of any tritone, this tritone will serve a new dominant. In the G7 chord, for example, the F-B tritone has the same sound as the F-C flat tritone of Db7. The same tritone can be associated with two dominants of different keys: C and Gb.



Thus, tetrads with a dominant function that contain two tritones in their structure can represent four different chords, each polarizing with its own tonic.

In the case of the G7(b5) or G7(#11) structures, we have the following possible resolutions:



¹ In non-dominant diminished chords, there is no resolution of the tritones; instead, there is a chromatic progression of two notes from the chord.

If the tritone **F-B** is enharmonically transformed to **F-C flat**, the dominant chord becomes **D^b7** and its resolution will be as follows:

D^b7/A^b G^b7M D^b7/A^b G^b6 (or $C\#7 \rightarrow F\#$)

The other tritone that is part of the structure of this chord is formed by the notes **G-D flat**. Starting from this interval to represent a dominant chord, we arrive at **E^b7**, whose notes will be resolved as follows:

$E^b7(\#5)/G$ no root $A^b add^9$ $E^b7(\#5)/G$ no root A^b

If the tritone **G-D-flat** is enharmonically transformed to **G-C-sharp**, we will have the following dominant structure and its consequent resolution:

$A7(\#5)/G$ no root $D/F\#$ $A7(\#5)/C\#$ no root D

Dominant chords of this type preferentially resolve to major chords, due to the presence of the major ninth and the augmented fifth.

Resolution of diminished chords: dominant function

Just as the two tritones of a dominant tetrad with a diminished fifth could be enharmonically reinterpreted, we can also do the same with the tritones of a diminished chord with a dominant function. We will take as our starting point the resolution of the **G[#]dim** chord representing the **VII** of the **A harmonic minor scale**, with the main tritone **G[#]-D**. Next, we will see the other chords

that have the same structure but different meanings due to the enharmonic interpretation of their notes.

A minor scale G[#]dim

G[#]dim
A_m
G[#]dim
A_madd⁹

The tritone G[#]-D enharmonic to Aflat-D will represent the dominant function of E-flat minor and will have the following resolution:

A^bdim
E^b_m/G^b
Fdim
E^b_m

function: Bb7(b9) no root with 7 in the bass

function: Ddim *function: Ddim*

The other two tritones that are part of the same chord can be interpreted as **F-B** or **E[#]-B**. In the case of the **F-B** tritone, the chord will resolve to **C minor**. In this case, the diminished chord will represent the seventh degree of the **C harmonic minor**.

A^bdim
C_m/G
Bdim
C_m

function: Bdim

And, in the case of the F-B tritone, enharmonically transformed to E#-B, this diminished chord will resolve to the tonic chord of F# minor.

function: E#dim

Resolution of diminished dominant chords in major chords

The diminished chord with a dominant function, in addition to representing the seventh degree chord of harmonic minor scales, is also situated on the seventh degree of harmonic major scales.

Therefore, it is predicted that each of these four resolutions on minor tonics can also occur on major tonics, since the tonic chord in the harmonic major scale is a major chord.

We can say, then, that the diminished dominant chord has, in addition to the four most common resolutions, which are made on minor tonics, four other resolutions on major tonics. Some are located on the first degree of the harmonic minor scales, and the others on the first degree of the harmonic major scales. By the same enharmonic process as the tritones, the diminished chord of the harmonic major scales offers the following possibilities of resolution:

Bdim → C

Original diminished chord	Enharmonic diminished chord	Chord resolution
Bdim	Ddim	Eb/Bb
Bdim	E#dim	F#/A#
Bdim	G#dim	A

Enharmonizing the **Bdim** tritone: chord progressions:

Note:

Dominant chords with two tritones are important chords in tonal modulation processes, and this specific topic will be addressed in the corresponding chapter. The chord with a dominant structure with a diminished fifth is a characteristic chord of chord structures derived from the whole-tone scale, the hexatonic scale, or the symmetrical scale. It is plausible to use chords borrowed from this scale, a modal scale, for application within tonal planes. In this case, the chord will present itself with the characteristic exceptions brought from the modal process, where there are no restrictions regarding the state of the chords. Let's look at the following structure for analysis purposes:

Beyond the enharmonic interpretations already discussed in this chapter, we can establish other resolutions for this same chord structure using the whole-tone scale. One of them is to transform this same chord into an A major dominant, for example. This will be done by reinterpreting the intervals of this chord based on the hexatonic scale. See how the notes look in this new interpretation:

- C** (root in C7) = **B#** (#5 in E7)
- E** (third in C7) = **E** (root in E7)
- Gb** (b5 in C7) = **F#** (9 in E7)
- Bb** (7 in C7) = **Bb** (b5 in E7)

The structural and resolutive exceptions of this chord are also explained by its symmetrical characteristic. The hexatonic scale is a dominant scale with symmetry by tones and, therefore, allows us six different interpretations for the same dominant chord.

See the reinterpretation based on the chord presented above:

In Book III of the Harmony Books we will see further details about the combination of the chords described above within a modal structure.

Exercise:

1) Write and play the possible resolutions of the following dominant chords using the enharmonic process:

A7(#11)	F7(#11)
E7(b5)	Adim
Ddim	Bb7(b5)
F#dim	A#dim
D7(#11)	D#dim
C#dim	C7/Gb

Exercises – Perception and Analysis

Track 06

Andantino tranquillo ♩ = 108

The musical score for Track 06 is written in 3/4 time with a key signature of one sharp (F#). The tempo is marked "Andantino tranquillo" with a quarter note equal to 108 beats per minute. The score consists of eight staves of music. The first staff begins with a dynamic marking of *mp* and includes the instruction "scorrevole". The second staff features a *cresc.* marking. The third staff has a *mf* marking. The fourth staff includes a *cresc.* marking. The fifth staff has a *cresc.* marking. The sixth staff has a *cresc.* marking. The seventh staff has a *cresc.* marking. The eighth staff begins with a dynamic marking of *sfz* and includes the instructions "poco rit." and "a tempo". The score includes various musical notations such as accents, staccato marks, and dynamic hairpins.

Musical staff 1: Treble clef, key signature of one sharp (F#). The staff contains a sequence of eighth notes with a slur over them. Below the staff, there are dynamic markings: *p*, *p*, *p*, *p*, and *p*.

Musical staff 2: Treble clef, key signature of one sharp (F#). The staff contains a sequence of eighth notes with a slur over them. Below the staff, there are dynamic markings: *p*, *p*, *p*, and *p*.

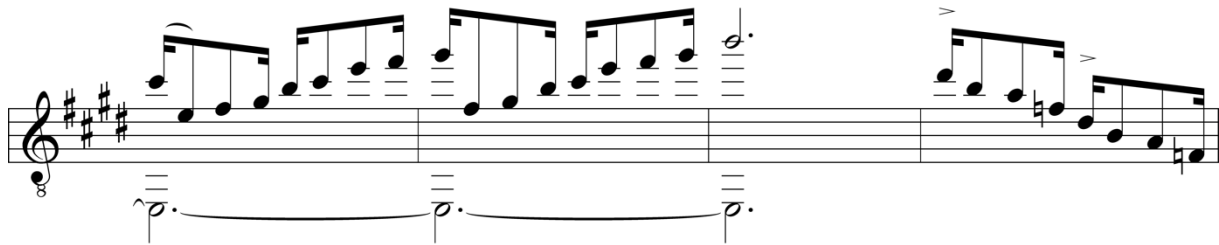
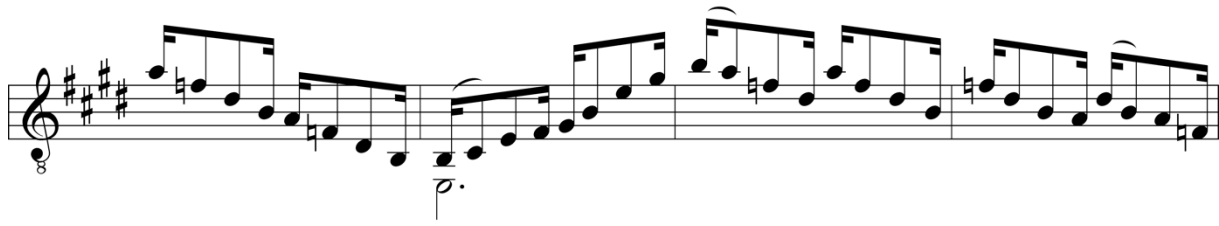
Musical staff 3: Treble clef, key signature of one sharp (F#). The staff contains a sequence of eighth notes with a slur over them. Below the staff, there is a dynamic marking: *poco rit.* To the right of the staff, there is a symbol: $Ao \frac{8}{8} e \emptyset$.

Musical staff 4: Treble clef, key signature of one sharp (F#). The staff contains a sequence of eighth notes with a slur over them. Below the staff, there are dynamic markings: *p*, *cresc.*, *p*, and *rall. poco a poco*.

Musical staff 5: Treble clef, key signature of one sharp (F#). The staff contains a sequence of eighth notes with a slur over them. Below the staff, there are dynamic markings: *rall.*, *harm. nat.*, *harm. artif.*, *ten.*, *Lento*, *rall.*, and *p*.

Track 07

The musical score for Track 07 consists of eight staves of music. The key signature is three sharps (F#, C#, G#) and the time signature is 6/8. The music is written in treble clef and features a complex, rhythmic melody with many slurs and ties. The notation includes various note values, rests, and dynamic markings such as 'p.' and 'f.'. The score is presented in a clean, black-and-white format.



Track 08

Recitativo ♩ = 92

Musical staff 1: Treble clef, 8/8 time signature. The melody begins with a quarter rest followed by a quarter note G4. A first ending bracket (Λ) covers the first two measures. The tempo/mood marking "rubato e espressivo" is placed below the staff.

Musical staff 2: Treble clef, 8/8 time signature. Continuation of the melody from staff 1, including the first ending bracket (Λ).

Musical staff 3: Treble clef, 8/8 time signature. Continuation of the melody from staff 2, including the first ending bracket (Λ).

Musical staff 4: Treble clef, 8/8 time signature. Continuation of the melody from staff 3, including the first ending bracket (Λ).

Musical staff 5: Treble clef, 8/8 time signature. Continuation of the melody from staff 4, including the first ending bracket (Λ). The tempo/mood marking "poco meno - rubato" is placed above the staff, and "accel." is placed below the staff.

Musical staff 6: Treble clef, 8/8 time signature. Continuation of the melody from staff 5, including the first ending bracket (Λ). The tempo/mood marking "tempo primo" is placed above the staff.

Musical staff 7: Treble clef, 8/8 time signature. Continuation of the melody from staff 6, including the first ending bracket (Λ).

△

△

△ tempo primo

poco meno - rubato

expressivo

△

poco più mosso

△

rall.




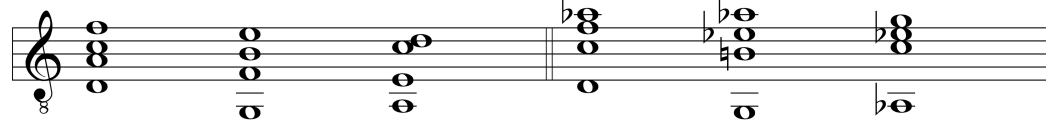



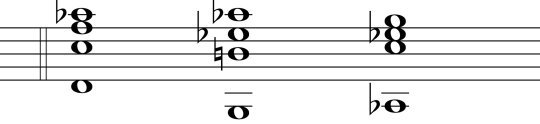







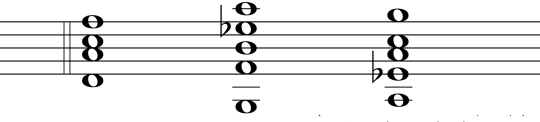
poco meno - rubato

The image displays five systems of musical notation, each consisting of a treble clef staff and a bass clef staff. The music is written in a key with one sharp (F#) and a common time signature. The notation includes various rhythmic values, slurs, and dynamic markings. The first system begins with a first ending bracket (marked with 'A') and includes the instruction 'poco più mosso'. The second system continues the melodic and harmonic development. The third system features a second ending bracket (marked with 'A') and includes the instruction 'poco rall.'. The fourth system continues the piece. The fifth system concludes with a first ending bracket (marked with 'A'), the instruction 'morendo', and a final 'rall.' marking. The piece ends with a double bar line and repeat dots.

Exceptional resolutions of dominant chords

In the tonal system, a dominant seventh chord naturally resolves to its tonic in the **V-I** movement. Thus, a **G7** chord, for example, naturally resolves to **C** or **Cm**, and an **E7** chord resolves to **A** or **Am**. However, the dominant chord can also resolve in many other ways through the functional transformation of the melody's resolution note. These are the **exceptional resolutions of the dominant chord** or **deceptive cadences**¹, and their role in tonal progressions is to delay the resolution to the tonic chord or even to shift the tonal focus to other centers.

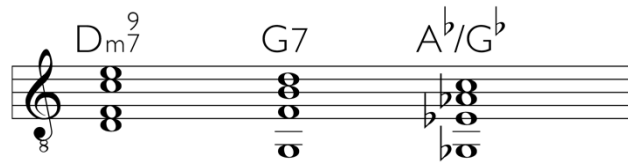
The most common deceptive cadence is one in which the dominant chord resolves to the sixth (**VI**) of major or minor scales. In this case, the functional transformation of the interval is made on the root of the tonic chord, which then represents the major or minor third of the chord used. See the following example of the **II-V-VI** movement from the four tonal scales:

<p style="text-align: center;">in C major</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>D_m7</p>  </div> <div style="text-align: center;"> <p>G7¹³</p>  </div> <div style="text-align: center;"> <p>A_m add¹¹</p>  </div> </div> 	<p style="text-align: center;">in C harmonic minor</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>D^ø</p>  </div> <div style="text-align: center;"> <p>G7^(b13)_(b9)</p>  </div> <div style="text-align: center;"> <p>A^b7M</p>  </div> </div> 
<p style="text-align: center;">in C harmonic major</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>D^ø</p>  </div> <div style="text-align: center;"> <p>G7⁽¹³⁾_(b9)</p>  </div> <div style="text-align: center;"> <p>A^b7M^(#5)</p>  </div> </div> 	<p style="text-align: center;">in C melodic minor</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>D_m7</p>  </div> <div style="text-align: center;"> <p>G7^(b13)_(b9)</p>  </div> <div style="text-align: center;"> <p>A^ø</p>  </div> </div>  <p style="text-align: right; font-size: small;">(rarely applied)</p>

Just as the root of the tonic chord can be functionally reinterpreted as the major third of a major chord, we can also transform it into the major third of a chord with a dominant structure, for

¹ also called *interrupted cadences* or *broken cadences*.

example. This procedure opens a new cadential possibility: the substitution of the tonic chord - C - by the modal borrowing chord **Ab7**. The result will be the movement **Dm7-G7-Ab/Gb**.



Starting from this principle and expanding the concept, we say that the resting note of the melody, in the dominant-tonic cadence, can be transformed into any other interval of the tonal harmonic structure (see chapter 'Intervals of Tonal Harmony'). It will be part of the structure of chords originating from one of the five chord families. The note where a melodic phrase end is not restricted to the root of the tonic chord and can be represented by any interval of that chord's structure.

The chords that replace the tonic can be presented in their fundamental states or inversions and, depending on the transformation performed, show their extensions and alterations.

In the various deceptive cadences, the chords used may originate from the main diatonic scale, from homonymous tonal scales, or even from different modal scales, forming the broad spectrum of borrowed chords.

Although the theoretical principle allows for the application of all types of functional transformations of the resolution intervals of a melody, in practice, not all possible chords resulting from this transformation offer an efficient cadential result. Certain harmonic structures, due to the type of interval transformation performed, result in poor or redundant cadential movements.

See the table below for the types of chords most used in exceptional resolutions that replace the V-I movement in C major:

transforming the root of the chord into	chord structure	resulting chord
b3	m7	Am7

3	7M ou 6 Dominant chord	Ab7M, Ab6, Ab7
b5	7(b5), m7(b5) or 7dim	C7/Gb, F# [∅] , F# dim
5	m7	Fm7
#5	Augmented triad	E(#5)
6	Major chord 6, 9 Minor chord 6, 9	Eb6 ⁽⁹⁾ , Ebm6 ⁽⁹⁾
7dim	Diminished chord	D#dim
7	Half-diminished chord	D [∅]
7M	Major chord	Db7M
9	Chords: major, dominant and half-diminished	Bb7M ⁽⁹⁾ , Bbm7 ⁽⁹⁾ , Bb7 ⁽⁹⁾ , Bb ^{∅9}
#9	Dominant chord	A7(#9)
#11	Dominant chord Major chord	F#7(#11), F#7M(#11)
13	Dominant chord sus e 7	Eb ^{sus} , Eb7 ⁽¹³⁾

See practical examples of these functional transformations using the following melodic motif:

Resolutions in major mode – complete cadence¹

¹ Sing the melodic pattern and apply the chords of the exceptional resolutions.

1. Transforming the tonic into a minor third of a minor chord.

Musical notation for exercise 1. The staff shows a sequence of notes: D4, E4, F4, G4, A4, B4, C5. Above the staff, three guitar chord diagrams are shown: Dm7⁹, G7⁹, and Am7. The notes correspond to the chords: Dm7⁹ (D, F, A, C), G7⁹ (G, B, D, F), and Am7 (A, C, E, G).

2. Transforming the tonic into a major third of a major chord

Musical notation for exercise 2. The staff shows a sequence of notes: D4, E4, F4, G4, A4, B4, C5. Above the staff, three guitar chord diagrams are shown: Dm7⁹, G7⁹, and A^b7M⁹. The notes correspond to the chords: Dm7⁹ (D, F, A, C), G7⁹ (G, B, D, F), and A^b7M⁹ (A, C, E, G).

3. Transforming the tonic into a major third of a dominant chord.

Musical notation for exercise 3. The staff shows a sequence of notes: D4, E4, F4, G4, A4, B4, C5. Above the staff, three guitar chord diagrams are shown: Dm7⁹, G7⁹, and A^b7⁹. The notes correspond to the chords: Dm7⁹ (D, F, A, C), G7⁹ (G, B, D, F), and A^b7⁹ (A, C, E, G).

4. Transforming the tonic into a diminished fifth of a dominant chord.

Musical notation for exercise 4. The staff shows a sequence of notes: D4, E4, F4, G4, A4, B4, C5. Above the staff, three guitar chord diagrams are shown: Dm7⁹, G7⁹, and F#7^(b5). The notes correspond to the chords: Dm7⁹ (D, F, A, C), G7⁹ (G, B, D, F), and F#7^(b5) (F#, A, C, E).

5. Transforming the tonic into a diminished fifth of a half-diminished chord.

Musical notation for exercise 5. The staff shows a sequence of notes: D4, E4, F4, G4, A4, B4, C5. Above the staff, three guitar chord diagrams are shown: Dm7⁹, G7⁹, and F#7^ø. The notes correspond to the chords: Dm7⁹ (D, F, A, C), G7⁹ (G, B, D, F), and F#7^ø (F#, A, C, E).

6. Transforming the tonic into a diminished fifth of a diminished chord.

Musical notation for exercise 6. The melody consists of the notes D4, E4, F4, G4, A4, B4, C5, and B4. Above the staff, three guitar chord diagrams are shown: Dm7⁹, G7⁹, and F[#]dim.

7. Transforming the tonic into a perfect fifth of a minor chord.

Musical notation for exercise 7. The melody consists of the notes D4, E4, F4, G4, A4, B4, C5, and B4. Above the staff, three guitar chord diagrams are shown: Dm7⁹, G7⁹, and Fm7.

8. Transforming the tonic into an augmented fifth of a major chord.

Musical notation for exercise 8. The melody consists of the notes D4, E4, F4, G4, A4, B4, C5, and B4. Above the staff, four guitar chord diagrams are shown: Dm7⁹, G7⁹, G/F, and E^(#5).

9. Transforming the tonic into a sixth of a major chord.

Musical notation for exercise 9. The melody consists of the notes D4, E4, F4, G4, A4, B4, C5, and B4. Above the staff, four guitar chord diagrams are shown: Dm7⁴, Dm7⁹, G7/F⁶, and E^b9⁸.

10. Transforming the tonic into a sixth of a minor chord.

Musical notation for exercise 10. The melody consists of the notes D4, E4, F4, G4, A4, B4, C5, and B4. Above the staff, four guitar chord diagrams are shown: Dm7⁴, Dm7⁹, G7/F⁶, and E^bm6⁵.

11. Transforming the tonic into a diminished seventh of a diminished chord.

Exercise 11 shows a melodic line in C major with four chords: Dm7, Dm7⁹, G7/D, and D[#]dim. The melodic line consists of the notes D4, E4, F4, G4, A4, B4, C5, and D5. The chords are indicated by guitar diagrams above the staff.

12. Transforming the tonic into a minor seventh of a half-diminished chord

Exercise 12 shows a melodic line in C major with three chords: G_{sus}⁹, G⁹₇, and D^ø. The melodic line consists of the notes D4, E4, F4, G4, A4, B4, C5, and D5. The chords are indicated by guitar diagrams above the staff.

13. Transforming the tonic into a major seventh of a major chord.

Exercise 13 shows a melodic line in C major with three chords: G_{sus}⁹, G7/D, and D^b₇M. The melodic line consists of the notes D4, E4, F4, G4, A4, B4, C5, and D5. The chords are indicated by guitar diagrams above the staff.

14. Transforming the tonic into a ninth of a major chord.

Exercise 14 shows a melodic line in C major with three chords: G_{sus}⁹, G⁹₇, and B^b₇M⁹. The melodic line consists of the notes D4, E4, F4, G4, A4, B4, C5, and D5. The chords are indicated by guitar diagrams above the staff.

15. Transforming the tonic into a ninth of a major chord.

Exercise 15 shows a melodic line in C major with three chords: Dm⁹₇, G¹³₇, and B^b₇m⁹. The melodic line consists of the notes D4, E4, F4, G4, A4, B4, C5, and D5. The chords are indicated by guitar diagrams above the staff.

16. Transforming the tonic into a ninth of a dominant chord.

Musical notation for exercise 16. The melody is in C major. The chords are: Dm7⁹, G7⁹, and B^b7⁹. Each chord is accompanied by a guitar fretboard diagram showing the fingerings.

17. Transforming the tonic into a ninth of a half-diminished chord.

Musical notation for exercise 17. The melody is in C major. The chords are: Dm7⁹, G/F, and B^b7⁹. Each chord is accompanied by a guitar fretboard diagram showing the fingerings.

18. Transforming the tonic into a augmented ninth of a dominant chord.

Musical notation for exercise 18. The melody is in C major. The chords are: Dm7⁹, G¹³, and A7(^b9). Each chord is accompanied by a guitar fretboard diagram showing the fingerings.

19. Transforming the tonic into a augmented eleventh of a major chord.

Musical notation for exercise 19. The melody is in C major. The chords are: Dm7⁹, G7⁹, and F[#]7M([#]11). Each chord is accompanied by a guitar fretboard diagram showing the fingerings.

20. Transforming the tonic into a augmented eleventh of a dominant chord.

Musical notation for exercise 20. The melody is in C major. The chords are: Dm7⁹, G7⁹, and F[#]7([#]11). Each chord is accompanied by a guitar fretboard diagram showing the fingerings.

21. Transforming the tonic into a thirteenth of a dominant chord.

Exceptional resolutions in minor

In the minor mode, exceptional resolutions of the dominant seventh chord occur in the same way, that is, by transforming the resolution note of the melody into one of the intervals of the chord structure. The possibilities for application are more limited, since not all transformations yield satisfactory results. See how the same cadence model looks when applied to the same melodic motif in C minor.

Exercises:

1) Practice the main exceptional resolutions of the dominant chord in the following situations.

- a) Functional transformation of the root of the tonic chord into a major ninth of a dominant chord in the key of A-flat major.
- b) Functional transformation of the root of the tonic chord into a major seventh of a major chord in the key of F major.
- c) Functional transformation of the root of the tonic chord into a diminished fifth of a half-diminished chord in the key of D major.
- d) Functional transformation of the root of the tonic chord into an augmented ninth of a dominant chord in the key of C major.
- e) Functional transformation of the root of the tonic chord into a thirteenth of a dominant chord in the key of G major.
- f) Functional transformation of the root of the tonic chord into a perfect fifth of a minor chord in the key of E-flat major.
- g) Functional transformation of the root of the tonic chord into a major third of a dominant structure in the key of A major.
- h) Functional transformation of the root of the tonic chord into a diminished fifth of a diminished chord in the key of E major.
- i) Functional transformation of the root of the tonic chord into a sixth of a major chord in the key of B-flat major.
- j) Functional transformation of the root of the tonic chord into a major seventh of a major chord in the key of D-flat major.
- k) Functional transformation of the root of the tonic chord into a ninth of a minor seventh chord in the key of B major.
- l) Functional transformation of the root of the tonic chord into an augmented eleventh of a dominant chord in the key of G-flat major.

2) Write the sequence in four or five voices, as needed, for the following exceptional resolutions.

a) E_{m7}^9 A_7^9 B^b_6

b) A_{m7}^9 D_7^9 F_7^9

c) C_{m7}^9 F_7^9 $G^b_7^9$

d) $F^{\#}_{m7}^9$ B_7^9 $E7/B^b$

e) F_{m7}^9 $B^b_7^{13}$ $C_7^{(\#9)^{b13}}$

f) B_{m7}^9 E_7^{13} G_{m7}^9

g) B^b_{m7} $E^b_7^9$ E^b/D^b $C^{(\#5)}$

h) $E^b_{m7}^9$ $A^b_7^9$ G^b_{m7}

i) G_{m7} C/B^b A^b_{m6}

j) $F^{\#}_{m7}$ B/A G_6^9

k) $C^{\#}_{m7}^9$ $F^{\#}_7^9$ $E^{\#\emptyset}$

Exercícios – Percepção e Análise

Track 09



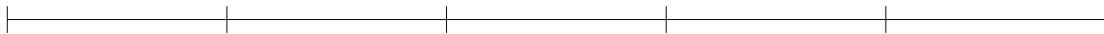
Track 10



Track 11



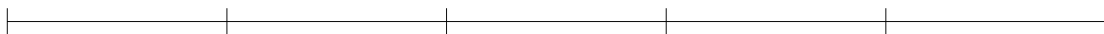
Track 12



Track 13



Track 14



Track 15



Track 16



Voice leading

One of the main issues related to Tonal Harmony is the broad understanding of voice movement in chord progressions. Whether diatonic or chromatic, the voice progression of chords is based on the movement-rest relationship that guides them. In every tonal process, the tonic chord is always the point of convergence for all other chords, from where we start and to where we always return. This relationship can be represented by a simple **I-V-I** cadential movement of a single tonal scale. It can also be expanded by employing different chromatic tensions, generated by secondary dominants (and their different complements), by borrowing chords from homonymous tonal scales, and by all kinds of alterations arising from different modal borrowings. The connection between tetrads, triads, and extensions, as previously seen, can be associated with a kaleidoscope, where a certain number of glass beads, through the reflection of light in three angled mirrors, generates a wide variety of geometric designs. In tonal procedures, the simple alteration of one of the notes in a chord generates a particular type of instability that distances it from the tonic. The great art of tonal harmonization is to make this process of distancing and returning, through the best chord choices and correct progressions, result in simplicity and fluency. In short, all tonal practice revolves around the attractive force exerted by the tonic chord and the resolving strength of the dominant chord. These two functions, added to the subdominant function, form the tripod that balances the entire system.

Here are some examples of moving away from tonic and returning to it in diatonic and chromatic progressions:

1. In direct relation to the dominant region¹.

The image shows a musical staff with a treble clef and a key signature of one flat (B-flat). Above the staff, seven chords are listed with their corresponding guitar fretboard diagrams. Below the staff, the same chords are represented as bass clef symbols. The chords are: C, Bø, C, C, Bø, G7(b9)/B (no root), and C. The G7(b9)/B chord is marked with a 'no root' symbol.

¹ The examples are based on tonal scales, secondary dominants, altered chords, and modal borrowings.

2. In chord progressions involving the subdominant and dominant.

C F7M/A G¹³ C/G C7M F^{add9}/A G7(^{#11})/B C⁹

This exercise shows a sequence of chords: C, F7M/A, G¹³, C/G, C7M, F^{add9}/A, G7(^{#11})/B, and C⁹. Each chord is accompanied by a guitar chord diagram above it. Below the diagrams is a musical staff in treble clef showing the chord voicings for each chord.

3. With the addition of secondary dominants

C C7(^{#5})/B^b F/A D7/A^b C/G G7 C

This exercise shows a sequence of chords: C, C7(^{#5})/B^b, F/A, D7/A^b, C/G, G7, and C. Each chord is accompanied by a guitar chord diagram above it. Below the diagrams is a musical staff in treble clef showing the chord voicings for each chord.

4. Through harmonic progression with secondary dominants and their alterations.

C G7(^{#11})/B B^{b13} A7(^{b13}) D⁹ D7(^{#5})/A^b G¹³ E7(^{b9})/G[#] A^{m add9} etc.

This exercise shows a sequence of chords: C, G7(^{#11})/B, B^{b13}, A7(^{b13}), D⁹, D7(^{#5})/A^b, G¹³, E7(^{b9})/G[#], and A^{m add9}. Each chord is accompanied by a guitar chord diagram above it. Below the diagrams is a musical staff in treble clef showing the chord voicings for each chord. The word "etc." is written at the end of the staff.

5. With borrowed chords

Track 17

Track 17 consists of three staves of musical notation in treble clef. Each staff shows a sequence of guitar chord voicings. The chords are: C, F7M/A, G¹³, C/G, C7M, F^{add9}/A, G7(^{#11})/B, C⁹, C7(^{#5})/B^b, F/A, D7/A^b, C/G, G7, C, C7(^{#11})/B, B^{b13}, A7(^{b13}), D⁹, D7(^{#5})/A^b, G¹³, E7(^{b9})/G[#], and A^{m add9}.



On the other hand, certain chromatic tensions practiced more freely can be obtained using “vagrant chords”¹, which lead harmonic progressions to distant tonal planes. Often, after moving away from the main tonal center through a chromatic process, we see the harmonic process stabilize at another tonal center, and when this happens, we observe a type of procedure called **modulation** (see *corresponding chapter*). There has always been a consensus in tonal musical practice regarding maintaining the tonic as sovereign during short or long passages. No matter how far the chords move away from it, the tendency is always to return to the tonic. Therefore, whether in a simple popular song or in a great work, such as a symphony, what we can observe is that there is always a basic tonality that gives unity to the composition. So, no matter how many processes of moving away from the tonic may occur, there is always an obligatory return to it.

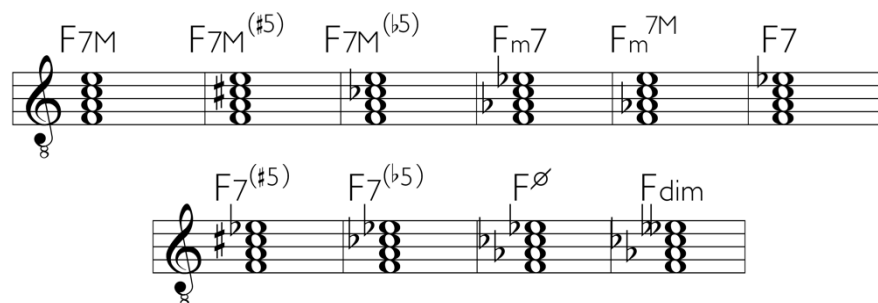
Track 18



¹“Vagrant chords” or “errant chords” - terminology adopted by A. Schoenberg to designate certain types of altered chords that, according to him, wander like nomads between tonal chord progressions without it being possible to define their exact function.



The possibilities for structuring tetrads should always be related to one of the five chord families, as seen previously. Within each family, there are some possible variations, but the range of possibilities consists of 10 tetrads. Therefore, a single tetrad has a finite and determined number of structural possibilities, and we must be limited to them. Let's take as a reference a tetrad built on the note F using only natural notes. The resulting tetrad will be an **F7M** chord, which can, circumstantially, be transformed into a series of other structures. The inclusion of the extensions opens countless other possibilities, but this does not affect the basic function that tetrads determine. In any case, all tension, whether in the tetrad structure or in the complementary intervals, the extensions, must be led to rest within the scale. We know that in modulating processes there are notes of temporary rest that change quality, and, for this reason, the harmony can remain erratic and undefined for a long period.



Awareness of the progressions and resolution tendencies of chord voicings is the basis for a profound understanding of this subject. Below, we will see some examples of chord progressions based on renowned works from the European tradition of the late 19th and early 20th centuries, as well as some harmonizations characteristic of popular songs.

Example 1

Example 1 shows a sequence of guitar chords and a corresponding melody line in G major. The chords are: D^{add9}, C[#]∅^{||}_{s.3}, F[#]7^(b13), Bm⁹_{7M}, Am^{add9}, D7^(b9), G^{add9}, G, F[#]∅, and B7^(b13). The melody line consists of eighth notes: G4, A4, B4, C5, B4, A4, G4, F#4, E4, D4, C4, B3, A3, G3, F#3, E3, D3, C3, B2, A2, G2.

Example 2

Example 2 shows a sequence of guitar chords and a corresponding melody line in C minor. The chords are: C^m, C^m^{add9}/_B^b_{s.3}, D7^(b13)/_A^b_{s.3}, G7^(b13)/_D^b, C^{sus9}, C7^(#9)/_G^b_{s.3}, F^m^{7M}, F^m7, B^b_{sus9}, B^b7^(b9), E^b7^M^(#5), A^b7^M⁹, A[∅], D7^(#9)/_A^b_{s.3}, G^{sus}¹³₂, G7^(b13)/_D^b_{s.3}, and C^m⁶⁹. The melody line consists of eighth notes: C4, B3, A3, G3, F3, E3, D3, C3, B2, A2, G2, F2, E2, D2, C2, B1, A1, G1, F1, E1, D1, C1.

Example 3

F_m^9 $C7^{(\flat 13)}$ $A^{\flat}7M/E^{\flat}$ D^{\emptyset} $D^{\flat}7^9$ $C7^{(\flat 9)}$ F_m^7M

The diagram shows seven guitar chord shapes above a staff. The first row contains: F_m^9 (5), $C7^{(\flat 13)}$ (5, sf, s.5), $A^{\flat}7M/E^{\flat}$ (5), D^{\emptyset} (3), $D^{\flat}7^9$, $C7^{(\flat 9)}$, and F_m^7M (x). The staff below shows the corresponding chord voicings on a treble clef staff with a bass line.

Example 4

$B^{\flat}_{add}9/D$ $D^{\flat}dim$ $Cm7$ $F7^{13}$ $B^{\flat}_{sus}9$ $B^{\flat}7/F^{\flat}$

The diagram shows six guitar chord shapes above a staff. The first row contains: $B^{\flat}_{add}9/D$ (4), $D^{\flat}dim$, $Cm7$ (x), $F7^{13}$ (x), $B^{\flat}_{sus}9$ (4), and $B^{\flat}7/F^{\flat}$ (x, x, 2). The second row contains: $E^{\flat}7^9$ (5), $D7/A^{\flat}$ (3), and $Gm7^{11}$. The staff below shows the corresponding chord voicings on a treble clef staff with a bass line.

Example 5

$E_{add}9$ $C^{\#}7/G$ $F^{\#}m7$ $D^{\#}7/A$ $G^{\#}m7$ $E7/B^{\flat}$ $A6$

The diagram shows seven guitar chord shapes above a staff. The first row contains: $E_{add}9$ (x, x), $C^{\#}7/G$ (2), $F^{\#}m7$, $D^{\#}7/A$ (4), $G^{\#}m7$, $E7/B^{\flat}$ (5), and $A6$ (3). The staff below shows the corresponding chord voicings on a treble clef staff with a bass line.

Example 6

$B7^9$ $B^{\flat}7M^{(\#11)}$ $A7^{(\#5)}$ $G^{\#}7^{(\flat 13)}$ $G7^{(\#5)}$ $F^{\#}7^{(\flat 13)}$ B^9_{7M}

The diagram shows seven guitar chord shapes above a staff. The first row contains: $B7^9$ (4), $B^{\flat}7M^{(\#11)}$ (5), $A7^{(\#5)}$ (5), $G^{\#}7^{(\flat 13)}$, $G7^{(\#5)}$, $F^{\#}7^{(\flat 13)}$, and B^9_{7M} (6). The staff below shows the corresponding chord voicings on a treble clef staff with a bass line.

Example 7

Example 7 shows two staves of music. The first staff contains six chords: G6/B, B^bdim(^b13), Am7, D7(^b9), G7⁹M, and E7(^b9). The second staff contains three chords: A7⁹, D7(^b13), and G7⁹M. Each chord is accompanied by a guitar chord diagram and a corresponding note on a treble clef staff. The notes are: G6/B (B4), B^bdim(^b13) (B3), Am7 (A3), D7(^b9) (D4), G7⁹M (G4), E7(^b9) (E4), A7⁹ (A3), D7(^b13) (D4), and G7⁹M (G4).

Example 8

Example 8 shows two staves of music. The first staff contains seven chords: B7/F, E7, D7/A^b, G7, Fm6/C, C([#]5), and B7. The second staff contains four chords: E7(^b9), Em7, E7, and F. Each chord is accompanied by a guitar chord diagram and a corresponding note on a treble clef staff. The notes are: B7/F (F4), E7 (E4), D7/A^b (A3), G7 (G4), Fm6/C (F4), C([#]5) (C4), B7 (B4), E7(^b9) (E4), Em7 (E3), E7 (E4), and F (F4). Ties are shown above the notes for F4, E4, A3, G4, F4, and E4.

The notes with ties are the actual notes of the chords.
Pay attention to the ties of the seventh and the fifth.

Example 9

Example 9 displays a sequence of guitar chords and their corresponding musical notation across four lines. The chords are:

- Line 1: C_{sus}^9 , C , $F7M$, F , C_{sus}^9 (with 13 above), C_{sus}^9 , F_{add}^9 , F , F_{sus}/E^b , F/E^b .
- Line 2: G^9/D (with $^{no r.}$ and 3 below), $G7/D$ (with 2 below), $B^b m^7M/D^b$ (with 3 below), $B^b m6/D^b$ (with 3 below), $D7^{(b13)}/C$ (with $^{no r.}$ and $^{no 5}$ below), $D7^{(b9)}/C$ (with 3 below), D_{sus}^b9 , D/C .
- Line 3: G_{add}^9/B , G/B , $B^b m6$, $C7^{(b9)}/B^b$ (with $^{no r.}$ below), F_{add}^9/A , F/A (with 3 below), $A^b m6$, D^b7/A^b .
- Line 4: $Gm7$, $Gm7$, C_{sus}^9 , C , $F7M$, F .

We know that a good harmonic plan is one where the notes of the chords connect to each other always by the shortest path. This form of melodic connection between the notes of the chords, based on economy of movement, is the principle that governs good chord progressions. In chord changes, the common notes should be maintained and the remaining notes moved by the shortest path.

On the other hand, when we analyze an isolated melody, what makes us judge its richness is the variety of intervals and the rhythmic nuances that compose it. A rich melody is one in that there

is considerable intervallic variation, from low to high, as well as significant exploration of rhythmic possibilities. It is correct to say that each voice connected in chord progressions develops its own melody without, however, submitting to quality parameters that define it. When we highlight the movement of one of the voices in chord progressions, establishing a kind of second voice with the main melody, we are applying the technique of counterpoint. This counterpoint, done with the melody of a song, can be placed in any of the four voices of the chord progression, but its most frequent occurrence is in the higher voice. In applying this technique, the bass of the chord is often omitted on the guitar, assuming that the bass line is played by another instrument, a double bass, for example. In the development of each counterpoint line, it is also important to know the possibilities for extending and altering the chords to obtain more chromatic options in the progressions. Here are some different types of this technique:

Track 19 – In the highest voice:

The image displays two systems of musical notation for guitar. Each system consists of a row of chord diagrams with their respective names above them, and a corresponding staff notation below. The first system includes chords: F7M⁹, D7(♯11)⁴, Gm7⁹, E7(♯11)⁶, Am7⁷, A7(♯5)⁷, B^b6⁷, B^b7M⁹⁶, B^bm6⁵, and B^bm6^{7M}⁵. The second system includes chords: Am7³, A^bdim(♭13)³, Gm7⁹⁵, C7⁹⁴, F7M⁵, D7(♭13)⁴, Gm7³, and C7(♯5)⁴. The staff notation shows the chords in a treble clef with a key signature of one flat (Bb), and a bass line in a bass clef. The bass line consists of single notes, often octaves, corresponding to the root notes of the chords.

Track 20 – In the intermediate voices:

Chord diagrams and notation for Track 20:


- System 1: Cm, Fm7, G7, Cm^{add9}, G7^(b13)/D^b
- System 2: E^b7M^(#5), C7^(b9)/E, Fm^{add9}, A^b/G^b, Cm/G, G7, Cm

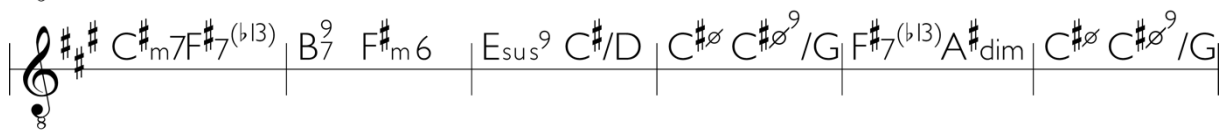
Exercises:

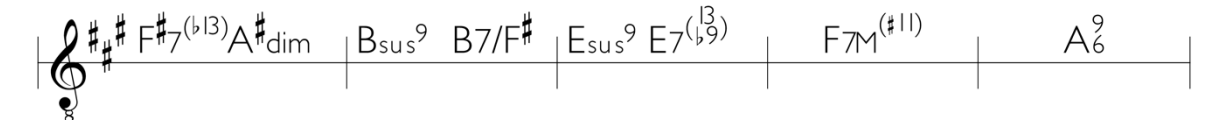
1. Link the chords of the following chord progressions and explore the technique of counterpoint lines:

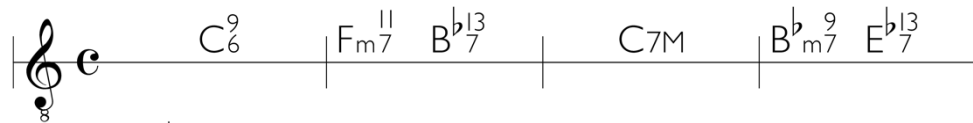
Chord progressions for Exercise 1:

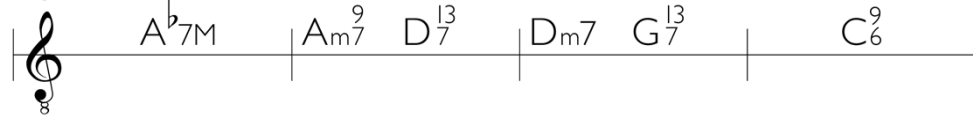
- System 1: C^ø F7^(b9) | B^b7M⁶ | C^ø F7^(b9) | B^b7M⁶ | E^ø E^bm7 | Dm7 D^bdim
- System 2: Cm⁹ F7^(b13) | B^b6⁹ A^b7 | D^b7M | B^b7M | D^b7M | B^b7M
- System 3: E^ø E^bm7 | Dm7 D^bdim | Cm⁹ F7^(b13) | B^b6⁹
- System 4: F6 | F7⁹/E^b | B^bm6/D^b | B^bm6 | F7M/A Gm7 | F7M F6
- System 5: Am7 A^bm7 | Gm7 E^bm^{7M} | Gm7 E^bm⁹ | Gm Gm^{7M} | Gm7 Gm6
- System 6: D^b7⁹ | C^{sus9} C⁹ | Gm7 Gm7/D | C^{sus9} C7^(#5)/B^b
- System 7: A¹³7 | D7^(#9) | G¹³7 | D^b7⁹ C⁹ G^b7M | F6

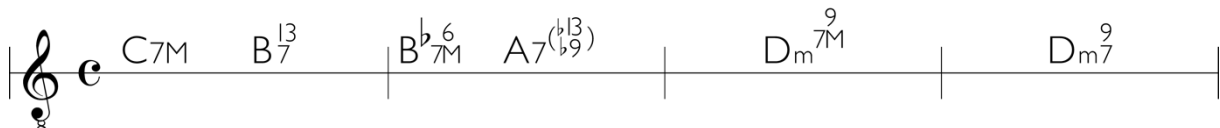


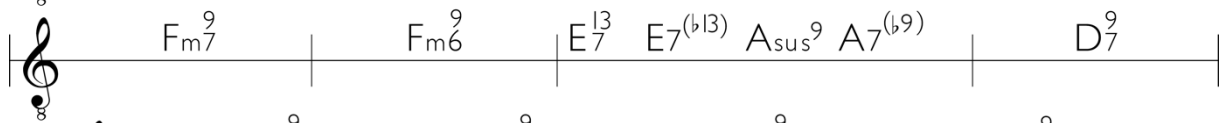





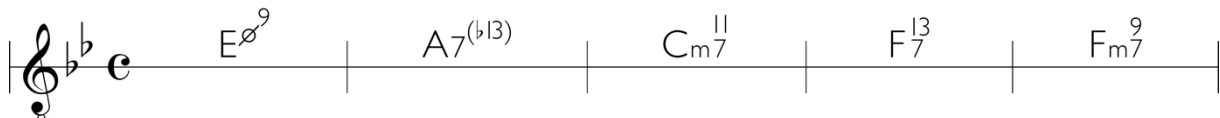


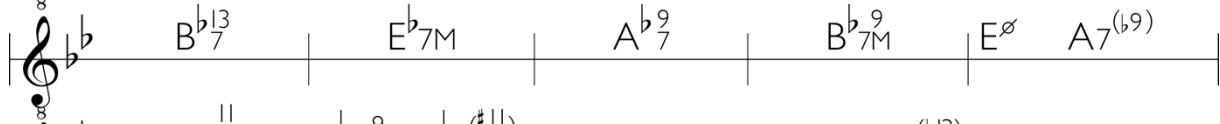


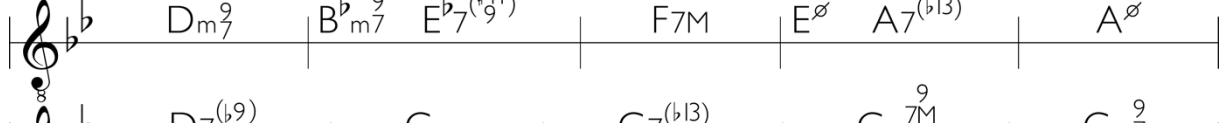





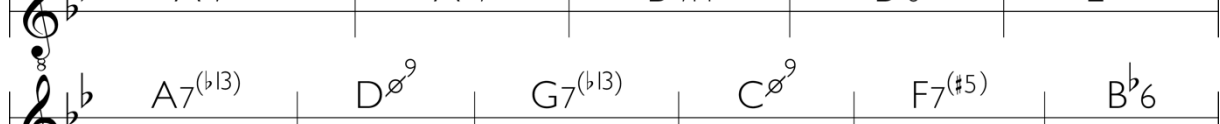















Resolution of chords by chromatic progression

This is a characteristic procedure of guitar playing originating from the blues. The guitar is an instrument with complex fingering, which does not allow us to maintain coherence in voice leading over longer passages. The parallel movement of chord notes is part of its nature, and, even if from a theoretical perspective this is not the best form of chord progression, the popularity of this instrument has made this practice established. A special type of parallel chord progression deserves attention and emphasis, as it has influenced other forms of harmonic writing. This is the case of chords that approach the resolution chord chromatically through the ascending or descending parallel movement of their voices. This approach, made by the chord that is located exactly a half step above or a half step below the resolution chord, is introduced into the harmonic discourse to reinforce the cadential movements. These chromatic approach chords do not have a clear tonal function, but, like altered dominants, they create tension in chord progressions, polarizing with the main chords. They are also called *appoggiatura* chords.

Track 21 – Descending chromatic resolution:

Track 22 – Ascending chromatic resolution:

Track 23 – Mixed chromatic resolution:

Non-dominant diminished chord

The non-dominant diminished chord is a type of chord that, in tonal sequences, connects the tonic and subdominant functions. These connections are made by the ascending or descending chromatic movement of two notes of the tonic function, which accommodate themselves to two other notes of the subdominant function, and vice versa. The non-dominant diminished chord is a linking chord between these two harmonic functions and is not subject to any gradual analysis. Due to its symmetrical structure of superimposed minor thirds, the diminished chord has acquired very particular characteristics throughout the complex and intricate path of tonal harmonic language. It has become a kind of chameleon of harmony, “a wandering chord that has no home of its own nor domicile... everywhere it is entitled to citizenship without, however, belonging anywhere: a cosmopolitan or a vagabond!”¹ Schoenberg's almost philosophical interpretation of the diminished chord not only gives us the theoretical dimension of the role this chord plays in harmonic progressions but also the effect it has on listeners. Through the enharmonic reinterpretation of its intervals, the same diminished chord can lead to different situations, many of them surprising.

¹ Arnold Schoenberg – *Harmonielehre* – Universal Edition, Vienna, 1922.

One way to use the non-dominant diminished chord is to place it as an intermediate chord in dominant-tonic cadences. In this way, the diminished chord delays the resolution of the tonic by creating a chromatic approach with two notes of the triad of that function. The other two notes that complete the tetrad maintain an enharmonic relationship with the notes of the underlying diatonic scale.

natural movement of the 5th and the dominant 7th
inverted resolution by the inclusion of the diminished non-dominant chord

The first example shows a chromatic resolution of the 5th and 7th of a dominant chord. It starts with B^b7 (5, 7) and resolves to E^b (3), then B^b7 (5, 7) resolves to E^bdim (3, #4), which then resolves to E^b (3).

The second example shows a sequence of chords: G^{add}9/B, E^b7/B^b, A^m7, D7, G^{dim}7^M, and G. Each chord is accompanied by a guitar fretboard diagram showing fingerings and barre positions.

The third example shows a sequence of chords: B7^M, A[#]7(^b13), D[#]7([#]9)/A *s.f.*, G[#]7(^b13), E7^M/G[#], F[#]7([#]5), B^{dim}, and B. Each chord is accompanied by a guitar fretboard diagram.

Exercises:

- 1) Apply the concept of chromatic resolution to perfect cadences in different keys.
- 2) Introduce chromatic resolution chords into harmonic structures that feature cadences with secondary dominants.
- 3) Apply the concept of chromatic resolution to harmonic structures in standard themes.
- 4) Apply the non-dominant diminished chord as an intermediate chord in dominant-tonic cadences of standard melodies.

Turnaround cadences

Turnaround cadences are understood as the cadential movement that prepares for the repetition of the melody of one of the parts of a popular song, which often has a binary formal structure and a unitonal harmonic plan. The binary form is represented by two distinct parts – A and B – and the unitonal harmonic structure is one in which there is no change of tonality, especially within each part.¹ This means that each part of the song can begin and end on the tonic chord, frequently without melodic movement, for a couple of measures. In these sections, simply maintaining the tonic chord can result in monotony and redundancy. See, in the example below, a model of a standard melody in which there is no melodic movement in the last two measures of one of the parts.

Track 24

end of part one - A

etc.

The bass notes of the chords are left free to be played by a bass player

It is common for harmonizers to prepare the restart of the theme by inserting some chords to make the space where there is no melodic occurrence more attractive. When the progression makes a turn to return to the tonic chord, it is called a turnaround. The simplest option to generate

¹ Sometimes, the two parts of the song are in similar keys, such as relative or homonymous keys.

harmonic movement in this return to the theme is done through a perfect cadence (V-I) or a complete cadence (II-V-I), creating a moment of instability that reinforces the return to the tonic.

II^m7 – V – I

Track 25

Track 25 illustrates a harmonic progression in D minor. The chords shown are: D^m7⁹, D^m7, D^m7¹¹, G7^(#11), G7, G7^(b13), C^{add}9/E, and D^m7¹¹. The melodic line is written in treble clef with a 2/4 time signature, featuring eighth and quarter notes with various accidentals.

In major keys, as is in the melodic example we are analyzing, the complete cadence used to reinforce the return to the tonic chord at the beginning of the theme can also be constructed with chords borrowed from the homonymous harmonic major scale.

II^o – V – I

Track 26

Track 26 illustrates a harmonic progression in D major. The chords shown are: G7^(#11), G7, G7^(b13), C^{add}9/E, C⁹, D^o, F^m7/A^b, G7^(b13)/D^b, and C⁹. The melodic line is written in treble clef with a 2/4 time signature, featuring eighth and quarter notes with various accidentals.

Turnaround cadences, which start from and return to the tonic chord, can also be achieved through the use of secondary dominants, with their inversions and extensions. The simplest

example of applying secondary dominants in a turnaround progression occurs when the tonic chord is returned to by linking two consecutive dominants.

V/V – V – I

Track 27

Chord progression for Track 27: G7(#11), G7, G7(b13), Cadd9/E, C7M9, D7 13, G7(b9)/D^b, C₆⁹.

It is also possible to expand the application of secondary dominants by increasing the cadential movement towards the tonic, as well as by using modal borrowing chords.

V/II – II – mbc¹ – I

Track 28

Chord progression for Track 28: G7(#11), G7, G7(b13), Cadd9/E, A7(b5), D_{m7}¹¹ no 3, E^b/D^b, C₆⁹.

VI – V/II – V/V – V – I

Track 29

Chord progression for Track 29: G7(b9), G7, G7(b13), E7(#9), A7¹³, D7(#9), G_{sus}¹³, G7(b13)/D^b, C₆⁹.

¹ mbc = modal borrowing chord, without a defined function. This type of chord features chromatic notes, with ascending or descending tension, that connect diatonic notes.

Just as secondary dominants connect to each other without resolving to the chords of the main scale, it is also possible for this type of sequence to apply a sequence of cadential pairs, borrowings, and inversions. To illustrate this, let's take another melodic example that rests on the root of the tonic chord (note that in the previous example the rest was on the fifth of the tonic chord). This gives us more possibilities for using cadential pairs, since the resting note of the melody (C) must maintain intervallic coherence with the chords employed.

III/III – V/III – II/II – V/II – IVm^{7M} – V(#11) – I

Track 30

Note that the chords used in this sequence are all related to the resting note of the melody. See

how the analysis of the resulting intervals looks:

Chord progressions and interval analysis:

Staff 1: $Dm7$, G^{13} , $B7^{(b13)}$, $E\emptyset/B^b$

Staff 2: $A7^{(b13)}$, Fm^7M/A^b , $G7^{(\#11)}$, C_6^9

Another variation in this type of chord progression is achieved by applying altered secondary dominants and dominant substitutes (subV7) in place of the secondary dominants:

V/IV – subV/III – subV/VI – subV/II – V/II – V/V – V – I

Track 31

Track 31 Chord Progression:

Staff 1: $Dm7$, G^{13} , C^{13} , $F7^{(\#9)}$, B^b13 , $E^b7^{(\#9)}$

Staff 2: $A7^{(b13)}$, D_7^9 , $G7^{(b13)}$, C_6^9

If the option is to maintain the tonic chord without using the turnaround, the use of different extensions that will change the position of this chord can be used. It will represent the voice movement to dynamize the musical passage, breaking the monotony of the static chord.

Track 32

Chord diagrams for Track 32:
 Dm7, Dm7, Dm7, G7(#11), G7, G7(b13), C7M/E, C9, C7M, C9, C6, C7M, C9.

Finally, one can use altered secondary dominants combined with modal borrowing chords to create a turnaround. The most used are the following:

Track 33

Chord diagrams for Track 33:
 G7(b9), G7(b13)/Db, B7(b5), Bb7M, Eb7M, Ab7M, Db7M, Db9, C9, Bb7M, Eb7M, Ab7M, Db7M(#11), C9.

a. | Bb7M | Eb7M | Ab7M | Db7M(#11) | C9 |

b.

F_m G7 C

F_m^{add11}/A^b G7(#11) C₆⁹

Detailed description: This exercise shows three chords: F minor, G7, and C major. The guitar diagrams are: F_m^{add11}/A^b (F major with 11th and A flat), G7(#11) (G dominant 7th with 11th), and C₆⁹ (C major with 6th and 9th). The staff shows the bass clef with an 8va marking, and the notes are: F_m (F, A, C), G7(#11) (G, B, D, F, A), and C₆⁹ (C, E, G, A, C).

c.

B₇⁹ A₇⁹ G_{sus}⁹ C₆⁹

B₇⁹ A₇⁹ G_{sus}⁹ C₆⁹

Detailed description: This exercise shows four chords: B₇⁹, A₇⁹, G_{sus}⁹, and C₆⁹. The guitar diagrams are: B₇⁹ (B dominant 7th with 9th), A₇⁹ (A dominant 7th with 9th), G_{sus}⁹ (G suspended 9th), and C₆⁹ (C major with 6th and 9th). The staff shows the bass clef with an 8va marking, and the notes are: B₇⁹ (B, D, F, A, C), A₇⁹ (A, C, E, G, B), G_{sus}⁹ (G, B, D, A), and C₆⁹ (C, E, G, A, C).

d.

B₇⁹ A_{sus}⁹ A₇⁹ G_{sus}⁹ G7/D^b C₆⁹

B₇⁹ A_{sus}⁹ A₇⁹ G_{sus}⁹ G7/D^b C₆⁹

Detailed description: This exercise shows six chords: B₇⁹, A_{sus}⁹, A₇⁹, G_{sus}⁹, G7/D^b, and C₆⁹. The guitar diagrams are: B₇⁹ (B dominant 7th with 9th), A_{sus}⁹ (A suspended 9th), A₇⁹ (A dominant 7th with 9th), G_{sus}⁹ (G suspended 9th), G7/D^b (G dominant 7th with D flat), and C₆⁹ (C major with 6th and 9th). The staff shows the bass clef with an 8va marking, and the notes are: B₇⁹ (B, D, F, A, C), A_{sus}⁹ (A, C, E, G), A₇⁹ (A, C, E, G, B), G_{sus}⁹ (G, B, D, A), G7/D^b (G, B, D, F, A), and C₆⁹ (C, E, G, A, C).

e.

E_{7M}⁹ A_{7M}⁹ D_{7M}⁹ G_{7M}⁹(#11) G_{sus}⁹ G7(#11) C₆⁹

E_{7M}⁹ A_{7M}⁹ D_{7M}⁹ G_{7M}⁹(#11) G_{sus}⁹ G7(#11) C₆⁹

Detailed description: This exercise shows seven chords: E_{7M}⁹, A_{7M}⁹, D_{7M}⁹, G_{7M}⁹(#11), G_{sus}⁹, G7(#11), and C₆⁹. The guitar diagrams are: E_{7M}⁹ (E dominant 7th with 9th), A_{7M}⁹ (A dominant 7th with 9th), D_{7M}⁹ (D dominant 7th with 9th), G_{7M}⁹(#11) (G dominant 7th with 11th), G_{sus}⁹ (G suspended 9th), G7(#11) (G dominant 7th with 11th), and C₆⁹ (C major with 6th and 9th). The staff shows the bass clef with an 8va marking, and the notes are: E_{7M}⁹ (E, G, B, D, F), A_{7M}⁹ (A, C, E, G, B), D_{7M}⁹ (D, F, A, C, E), G_{7M}⁹(#11) (G, B, D, F, A), G_{sus}⁹ (G, B, D, A), G7(#11) (G, B, D, F, A), and C₆⁹ (C, E, G, A, C).

Turnarounds in minor mode

Turnarounds created in minor modes follow the same principle as turnarounds in major keys.

Here are some examples of turnarounds starting from the tonic of A minor with a melodic rest on the fifth of the tonic chord.

Track 34

Am⁹₇ Am⁶ D_{m7} E₇(^b9) E₇(^b9) Am⁹₇ Am⁹₇ Am

I – VI – II (from homonymous major scale) – V

Track 35

Am⁹₇ Am⁶ D_{m7} E₇(^b9) E₇(^b9) Am⁹₇ C⁹₇ B_{m7}¹¹ E₇(^b9)/B^b Am

III (from major homonymous scale) – VI – VII – V

Track 36

Am⁹₇ Am⁶ D_{m7} E₇([#]9) E₇(^b9)/D no r. C[#]m₇ C⁹₇ B_{sus9} E₇(^b9)/B^b no 7 Am₇

I – mbc – VI (from minor homonymous scale) – V

Track 37

Am7⁹ Am6 Dm7 E7(#9) E7(¹³b9) Am7⁹ Gdórico F7M(#5) E7(^{b13})_{no 7} Am7

The musical notation for Track 37 shows a sequence of guitar chords and a corresponding melodic line in C major. The chords are: Am7⁹, Am6, Dm7, E7(#9), E7(¹³b9), Am7⁹, Gdórico, F7M(#5), E7(^{b13})_{no 7}, and Am7. The melodic line starts with a whole rest on the first beat, followed by a triplet of eighth notes (G4, A4, B4) on the second beat, and then a series of chords with a single eighth note on the third beat of each measure.

VI – IV (from melodic minor homonymous scale) – mbc – V

Track 38

Am7⁹ Am6 Dm7 E7(^{b13}) E7(^{b13}) F7M D⁹/F# Gm6 E7(^{b13})/G# Am

The musical notation for Track 38 shows a sequence of guitar chords and a corresponding melodic line in C major. The chords are: Am7⁹, Am6, Dm7, E7(^{b13}), E7(^{b13}), F7M, D⁹/F#, Gm6, E7(^{b13})/G#, and Am. The melodic line starts with a whole rest on the first beat, followed by a triplet of eighth notes (G4, A4, B4) on the second beat, and then a series of chords with a single eighth note on the third beat of each measure.

Melodic rest can occur on the root, the third, or the fifth of the tonic chord. The examples above were all developed from the resolution of the melody on the fifth of the tonic chord. The seventh and complementary intervals occur less frequently in the harmonization of popular songs, the focus of this chapter. Below are some examples with the resolution of the melody on the root note.

I (from major homonymous scale) – III (from natural minor homonymous scale) – II – V

Track 39

Dm/C B^ø Dm/C B^ø A^{add 9}/C# C⁹ B^{no 5} E7/B^b Am7

The musical notation for Track 39 shows a sequence of guitar chords and a corresponding melodic line in C major. The chords are: Dm/C, B^ø, Dm/C, B^ø, A^{add 9}/C#, C⁹, B^{no 5}, E7/B^b, and Am7. The melodic line starts with a quarter note (C4) on the first beat, followed by eighth notes (D4, E4, F4, G4) on the second beat, and then a series of chords with a single eighth note on the third beat of each measure.

VI – mbc – subVV – V

Track 40

Chord progression for Track 40: Dm/C, B \emptyset , Esus $^{\flat 9}$, E7 $^{\flat 9}$ (sf), F7M, B $^{\flat 7}$ M (#11), F/E $^{\flat}$, E7 $^{\flat 5}$ /G \sharp , Am

VI – VI (from melodic minor homonymous scale) – I – V

Track 41

Chord progression for Track 41: Dm/C, B \emptyset , Esus $^{\flat 9}$, E7 $^{\flat 9}$ (sf), F7M, F \sharp \emptyset , Am7 $^{\flat 9}$ /G, E7 $^{\flat 5}$ /G \sharp , Am7

Exercise

1) Create turnarounds in the following keys:

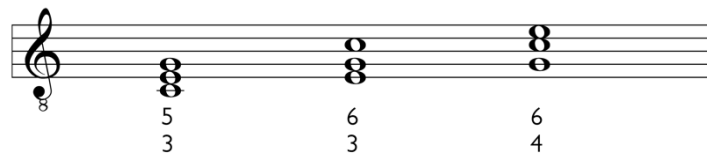
a) D major	b) C major
c) F maior	d) A flat major
e) A major	f) E flat major
g) E major	h) B minor
i) B flat major	j) D minor
k) G minor	l) A minor

2) 2) Apply turnarounds to the melodies of standard songs.

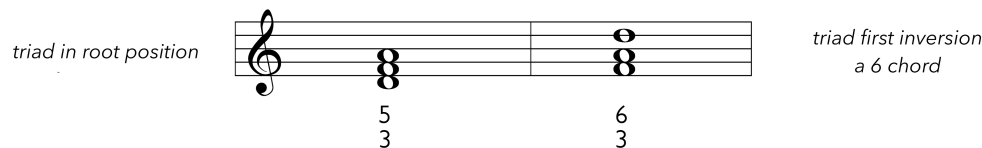
Characteristic cadences

Neapolitan cadence

Before discussing the **Neapolitan cadence**, it's necessary to understand the original meaning of the **Neapolitan sixth chord**, as defined and presented in various treatises on Traditional Harmony. This terminology can lead to misunderstandings for those familiar only with the nomenclature of Functional Harmony or Jazz. The different notation systems adopted in these three approaches to the study of Harmony present considerable differences. In the Harmony Books I present, the analysis of chord structures always considers the chords in root positions, that is, always with the root of the chord in the bass. In the harmonic analysis done by Traditional Harmony, all chord inversions are also considered and, consequently, all intervals resulting from the inversions of these chords. Thus, triads are notated not only by their three-note structures, with a third and a fifth superimposed, but also as three-note structures with the superposition of a third and a sixth, or even a fourth and a sixth.¹



This is the procedure adopted by Traditional Harmony to represent the inversion of chords, and for this reason, triads in first inversion are called sixth chords. Not because of the addition of a sixth to the main triad, as one might imagine, but because the inverted third generates a sixth interval.



See the table below for a summary of the numerical representation of triads, according to the principles of Traditional Harmony. Note that the interpretation of the intervallic structure of the same chord varies according to its inversions.

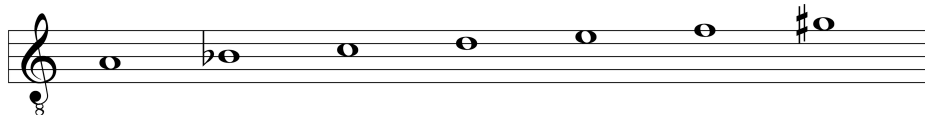
¹ In Traditional Harmony, notation is purely numerical. The bass line is always written on the staff, and the numbers in the notation represent the intervals that should be added to the bass note, thus forming the desired chords.

Root position triad	5 3	3rd and 5th over the root
First inversion triad	6 3	3rd and 6th over the third of the chord
Second inversion triad	6 4	4th and 6th over the fifth of the chord

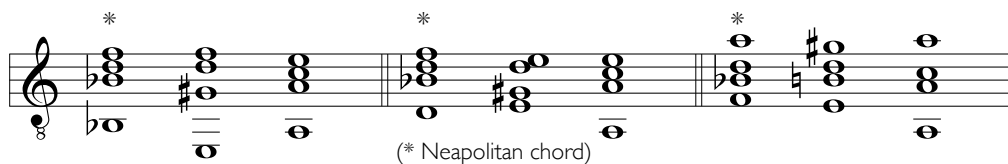
Thus, the chord known as the **Neapolitan sixth chord** is the borrowed **II chord** from the **Neapolitan minor scale** and is traditionally played in the first inversion. This borrowed chord was widely used by European classical composers in cadential processes, and we are particularly interested in addressing it within this type of cadence, which we call the **Neapolitan cadence**.¹

The **Neapolitan cadence** is a similar cadence to the **complete cadence** studied previously, with the substitution, by borrowing, of the second degree chord. This borrowing is done from the **Neapolitan scale**, whose structure is the same as the harmonic minor scale, differing only in the second degree, which is lowered by a semitone – **bl**. As the Neapolitan scale maintains the perfect fourth, the perfect fifth, and the leading tone unchanged, it lends itself, like tonal scales, to the cadential processes of Harmony.

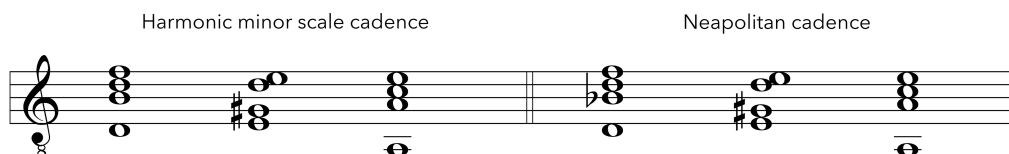
Neapolitan minor scale



The chord progressions that form the **Neapolitan cadence** are structured as follows:



Compare the cadences:



¹ This type of cadence became known and popularized through the works of composers from the Neapolitan School, especially Alessandro Scarlatti (1660-1725), Giovanni Battista Pergolesi (1710–1736), Giovanni Paisiello (1740–1816), and Domenico Cimarosa (1749–1801).

Note that the cadences are made by linking the subdominant (second degree), dominant (fifth degree), and tonic (first degree) chords of A minor. The first cadence uses the A harmonic minor scale, and the second uses the A minor Neapolitan scale.

As already mentioned, the triad in its first inversion is called a sixth chord in Traditional Harmony, and when this triad is borrowed from the **second degree** of the **Neapolitan Minor Scale**, it is treated as a **Neapolitan sixth chord**. See the example below for the classic way to insert it into a chord progression.

Neapolitan sixth chord

The **Neapolitan chord**, in its typical cadence, is almost always played in triadic formation, but nothing prevents the introduction of the tetrad and its complements in the same cadence. When this happens, that is, when the chord receives the 6th, 9th, or 11th complements, special attention must be paid to the 6th. The note that represents it, if removed from the Neapolitan minor scale, will form an inconvenient tritone in the chord structure. In this case, the **Phrygian mode** is used instead.

A Phrygian

The best way to practice the Neapolitan cadence is with the borrowed chord in the first inversion. This is how it became established and thus became our best auditory reference. However, it is also possible to practice it with the Neapolitan chord in root position in the second or third inversions, options that are less frequently used.¹

The effect created by the Neapolitan chord is typical of cadences in minor keys, but there is also a similar practice done on the complete cadence in major keys. Despite the similarity with the Neapolitan cadence (*both have the second degree chord lowered and in the first inversion*), the origin of this chord is not in any of the Neapolitan scales (*major or minor – see ‘Other tonal scales’*) but in the **Phrygian mode**. What characterizes the origin of this borrowing is the ninth complement = B flat. See its configuration in the example below:

C Phrygian

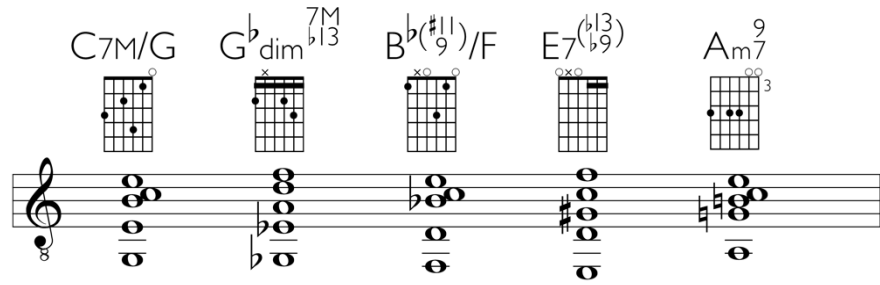
This same cadence related to the Phrygian mode can also be practiced in chord progressions with tetrads by applying their extensions. See the following example:

¹ When the chord is played in the third inversion (Bb/A), the effect obtained in the cadential process is that of borrowing from the Phrygian mode.

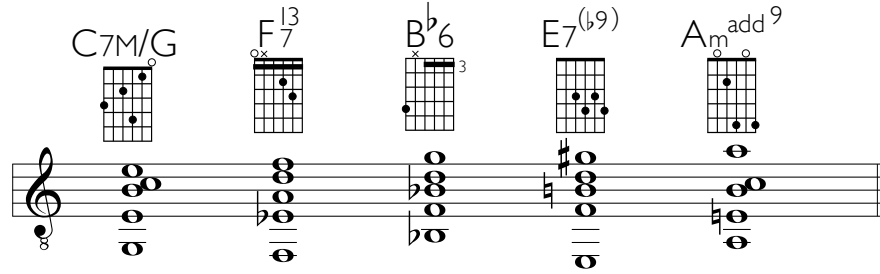
use left hand thumb to press B on 1st string

The Neapolitan chord can also be used preceded by a dominant seventh chord that leads to it, as if it were a kind of secondary dominant for this modal borrowing chord. In this way, the Neapolitan cadence becomes even richer and more expansive. It can be practiced in both minor and major modes.

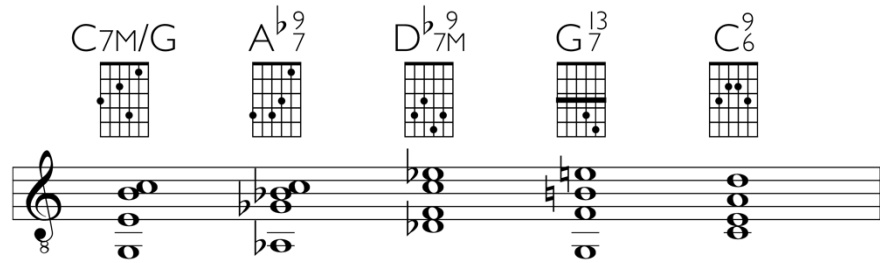
C7M/G G^bdim^{7M}_{b13} B^b(^{#11})/F E7(^{b13}) Am⁹₃



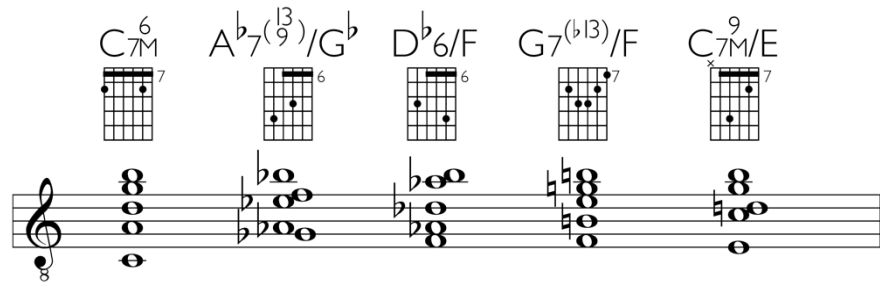
C7M/G F¹³ B^b6₃ E7(^{b9}) Am^{add9}



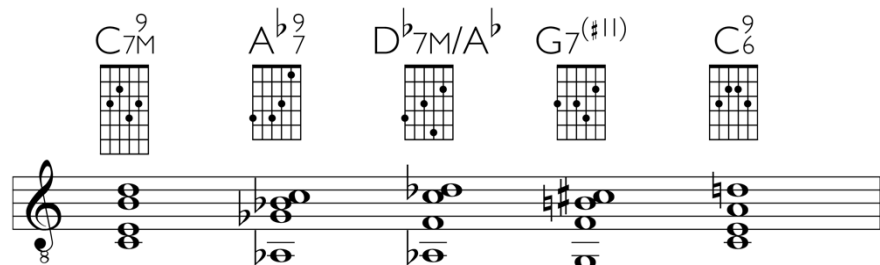
C7M/G A^b7⁹ D^b7M⁹ G7¹³ C⁹₆

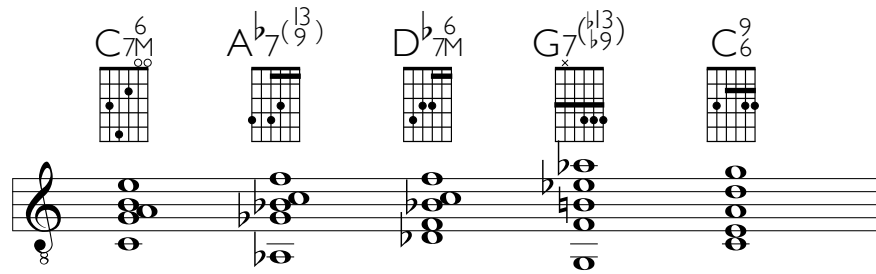


C⁶_{7M} A^b7(¹³)/G^b D^b6/F G7(^{b13})/F C⁹_{7M/E}



C⁹_{7M} A^b7⁹ D^b7M/A^b G7(^{#11}) C⁹₆





Note:

Within a more contemporary concept, and according to the harmonic principles adopted here, the intervals resulting from chord inversions do not require special notation. It is sufficient to know the chord inversion and, in this way, apply the diagonal line and place the note that should be in the bass. This detail, having clarity about the bass note, is fundamental when writing chord progressions. Regarding harmonic extensions, the construction of chords does not obey such rigid principles, and this means that the arrangement of the remaining notes of the chord is not so relevant for the effect to be efficient. The classical way of interpreting chords and their inversions (numerical notation) has become outdated with the development of Harmony and its complex tonal processes: the use of altered chords, chromatic modulating passages, and the increasingly frequent use of five, six, and seven-note chords. Within this practice, traditional notation (numerical notation) has become a complicated and inefficient method due to the countless numerical combinations that could arise from it.

Italian, French and German cadences

Just like in the Neapolitan cadence, the Italian, French, and German cadences were developed in classical harmonic practice through the chromatic alteration of two notes of the subdominant chord structure. This specific chord was named the **augmented sixth chord**.¹

The ascending and descending alterations of the augmented sixth chord result in two melodic tensions that, by contrary motion, tend to settle into an octave interval. This happens as follows: the root of the subdominant chord is altered in an ascending chromatic motion, and the third of the subdominant chord in a descending chromatic motion.² The octave interval, resulting from the resolution of these tensions, can be interpreted in two ways: as the root of the dominant chord or as the fifth of the tonic chord. The harmonic quality of this chord is similar to the **subV7/V**, both in the Italian cadence and in the French and German cadences. The German cadence has particular and specific characteristics. The **subV7/V** chord represents a dominant substitute, that is, a dominant chord with a diminished fifth in the bass, which, in this case, creates tension towards the dominant.

See how the progression from the subdominant to the tonic or from the subdominant to the dominant occurs, using the augmented sixth chord and its alterations as the intermediate chord.

The image displays three musical examples of augmented sixth chord resolutions. Each example consists of a subdominant chord, an augmented sixth chord, and a tonic or dominant chord. The first example shows the progression from F (subdominant) to D7(b5)/A♭ (augmented sixth chord) to C/G (tonic). The second example shows Dm7/A (subdominant) to D7(b5)/A♭ (augmented sixth chord) to G (tonic). The third example shows Fm (subdominant) to D7(b5)/F♯ (augmented sixth chord) to G (tonic). Chord diagrams are provided for each chord, and the augmented sixth chords are explicitly labeled as such.

The particular and positive effect that the use of this chord adds to cadential procedures has transformed it into a frequently used chord in European music. Its application can be seen over a long period, from the Renaissance to the turn of the 19th to the 20th century, coinciding with the decline of tonal procedures.

¹ Remember the same concept used in relation to the Neapolitan sixth chord regarding chord inversion according to Traditional Harmony, where 'sixth chord' means a triad in first inversion, and never the interval of a sixth added to the triad, as it is treated in contemporary alphanumeric notation.

² Note that both alterations only occur in major keys. In minor keys, the third of the subdominant does not move in the progression with the augmented sixth chord, since they are common notes.

This cadence has received various names despite the similar nature of the specific chord employed in it. Let us therefore examine these three cadences, starting with the Italian cadence, which represents a simplified version of the others.

Italian cadence

Using only triads, the Italian cadence has the following configuration:

(It can also occur in minor keys)

French cadence

The French cadence is accurately represented by the subV7/V. The classic way to link this chord is by placing the chromatic alterations in the extreme voices (the highest voice and the bass), keeping the chord in its second inversion.

German Cadence

This type of cadence always occurs in minor keys, and the chord that makes the chromatic movement towards the dominant has the quality of a secondary dominant, represented by the subV7/V.

The augmented sixth chord in the German cadence, due to the direction of its voices, can resolve to either the tonic chord or the dominant chord.

Note:

Blues Cadence

In jazz terminology, we find the traditional 'augmented sixth chord' applied in some situations. The most common of these is in the endings of some themes with a predominant influence from African American music. Identify in the example below the use of this same cadence within a 'blues' character.

The Ab7 chord, the third chord in this sequence, is part of the so-called enharmonic chord symbols. The actual notes of this chord are indeed A flat and F sharp, and therefore the actual chord cannot be Ab7. From a functional perspective, this chord represents the dominant of the dominant, that is, a chord that leads to the dominant of the key, which is C major. This chord will then be D7/Ab without the root. Playing this chord with its root is also quite common.

Picardy cadence

The Picardy cadence is a harmonic procedure that emerged in Central Europe in the pre-Baroque period. It consists of changing the tonic chord from minor to major at the end of musical pieces in minor keys. The chord is transformed from minor to major, and this conversion is done by altering the third of the tonic. We know that the seventh of the dominant chord in major keys preferably resolves by descending a semitone. And in minor keys, the resolution of the seventh occurs through a whole-tone movement. Since in major keys the resolution of the seventh of the dominant chord is only a diatonic semitone, it is easy to obtain the Picardy cadence effect. The resolution of the seventh of the dominant chord will be done by the melodic movement of only a semitone. The Picardy cadence can be applied to any cadential movement, and the following example uses the French cadence as a reference.

The diagram shows the French cadence progression: Fm/A^b (4 fingers), D7/A^b, Cm/G (3 fingers), G (3 fingers), and C (3 fingers). Below the guitar diagrams is a musical staff in G minor showing the corresponding chord voicings on a piano.

Here's another melodic movement typical of the Picardy cadence, this time associated with the German cadence.

The diagram shows the German cadence progression: Cm/E^b, Fm, D7^(b9)/A^b (4 fingers), Cm/G, G7 (x), C, and C. A note above the first two chords indicates "6th in D". Below the guitar diagrams is a musical staff in G minor showing the corresponding chord voicings on a piano.

Similarly, the Picardy cadence is also frequently employed in the resolutions of some secondary dominants. The most common is the resolution on the III of the major mode, but Picardy can also occur effectively on the II and VI.

F# [∅]	B7 ^(b13)	E7 ⁹ M		B [∅]	E7 ^(b9)	A7M		E [∅]	A7 ^(b13)	D ⁹ ₆
Picardy cadence on III	Picardy cadence on VI			Picardy cadence on II						

Exercises – Perception and Analysis

Track 42

The musical score for Track 42 consists of eight staves of music in 2/4 time. The key signature has one sharp (F#). The score includes various dynamics and performance instructions:

- Staff 1:** *mp*, *malinconico*. Features a $\Phi 5$ interval and a $\Phi 3$ interval.
- Staff 2:** *cresc.* (crescendo). Features a $\Phi 5$ interval, a $\Phi 3$ interval, and a 4-measure phrase.
- Staff 3:** *mf* (mezzo-forte). Features a 5-measure phrase.
- Staff 4:** Features a $\Phi 3$ interval, a $\Phi 5$ interval, and a C7 chord.
- Staff 5:** *mp*. Features a $\Phi 5$ interval and a $\Phi 3$ interval.
- Staff 6:** *cresc.*. Features a $\Phi 5$ interval, a $\Phi 3$ interval, and a 4-measure phrase.
- Staff 7:** *f* (forte). Features a 4-measure phrase, a 3-measure phrase, a 2-measure phrase, a 4-measure phrase, a 3-measure phrase, a 2-measure phrase, a 4-measure phrase, and a $\Phi 3$ interval.

Musical staff 1: Treble clef, 8/8 time signature. Features a melodic line with eighth notes and a bass line with chords. Includes a $\phi 3$ symbol above the staff and a θ symbol at the end.

Musical staff 2: Treble clef, 8/8 time signature. Features a melodic line with eighth notes and a bass line with chords. Includes a $\phi 2$ symbol above the staff and a p dynamic marking.

Musical staff 3: Treble clef, 8/8 time signature. Features a melodic line with eighth notes and a bass line with chords. Includes a $\phi 2$ symbol above the staff, a p dynamic marking, and a *cresc.* marking.

Musical staff 4: Treble clef, 8/8 time signature. Features a melodic line with eighth notes and a bass line with chords. Includes $\phi 5$, $C1$, $C3$, and $C5$ symbols above the staff, and fingerings 5 and 6.

Musical staff 5: Treble clef, 8/8 time signature. Features a melodic line with eighth notes and a bass line with chords. Includes $\phi 5$, $\phi 4$, $\phi 5$, and $C5$ symbols above the staff.

Musical staff 6: Treble clef, 8/8 time signature. Features a melodic line with eighth notes and a bass line with chords. Includes a 2 above the staff, a 6 below the staff, and a $\text{Do } \text{S} \text{ ao } \theta$ symbol at the end.

Musical staff 7: Treble clef, 8/8 time signature. Features a melodic line with eighth notes and a bass line with chords. Includes a θ symbol at the beginning, a *rall.* marking, and a p dynamic marking.

Track 43

The musical score for Track 43 is written in a single system with eight staves. It begins with a treble clef, a 2/4 time signature, and a key signature of one flat (B-flat). The music is characterized by a steady eighth-note accompaniment in the lower register, often with a bass line that includes a consistent eighth-note pattern. The upper register features a melodic line with eighth-note runs, often starting with a grace note. The score includes several first and second endings, marked with '1' and '2' respectively. The piece concludes with a final cadence. The notation includes various accidentals such as sharps and flats, and rests.

2

Da capo e

Exercises

1) Write Italian cadences in the following keys:

- a) B major
- b) E-flat major
- c) G major
- d) B-flat major

2) Write French cadences in the following keys:

- a) D major
- b) F major

- c) D-flat major
 - d) E minor
 - e) A minor
 - f) B-flat minor
- 3) Write German cadences in the following keys:
- a) B minor
 - b) E minor
 - c) G minor
 - d) A-flat minor
 - e) B-flat minor
 - f) D minor
 - g) F-sharp minor
- 4) Write blues cadences in the following keys:
- a) D major
 - b) F major
 - c) B-flat major
 - d) E-flat major
 - e) G major
 - f) E major
- 5) Write and play minor Neapolitan cadences in the following keys:
- a) B minor
 - b) D minor
 - c) G minor
 - d) E minor
 - e) B flat minor
 - f) F minor
 - g) F sharp minor
 - h) C minor
- 6) Write and play major Neapolitan cadences in the following keys:
- a) G major
 - b) E major
 - c) B flat major
 - d) F major
 - e) A major
 - f) E flat major
- 7) Write and play French and German cadences in the following keys:
- a) D major
 - b) E major
 - c) F major
 - d) G major
 - e) B flat major
- 8) Practice Picardy cadences in different keys and research this type of cadence in various types of popular songs and standard songs.

Characteristic notes

Throughout centuries of the development of harmonic language, dissonances applied to chords were treated in a particular way. Every interval beyond the limits of the triad had to be used according to rules of preparation and resolution. The preparation of a dissonance consisted of having it as a prolonged common note of a consonance in the preceding chord. Its resolution was the natural movement in the search for the harmonic rest characteristic of the tonal system. For example, for a seventh to be inserted into a chord, the note representing it had to be a third, fifth, or root in the preceding chord. The same happened for other complementary intervals or any alteration. The resolutions of dissonances also had to be respected, and thus, a seventh or ninth always followed its descending resolving path. Remember that the aesthetic concept that governed harmonic progressions at that time did not foresee endings in dissonant chords or chords without resolution. The rule for a good progression was rigorous, and it dictated that every dissonance be treated accordingly.

Track 44

The image displays a musical score for Track 44, consisting of four staves of music. The key signature is three flats (B-flat, E-flat, A-flat) and the time signature is 3/4. The notation includes chords with stems and beams, and various dissonances marked with 'p.' (preparation) and 'r.' (resolution). The chords are primarily triads and dyads, with some dissonances being seventh or ninth chords. The resolution of these dissonances is shown as a descending step or half-step movement.

Within this concept, some notes that moved through harmonic progressions via their voices were not analyzed as part of the chord structure but as independent notes with their character. Called

non-harmonic notes, they came to be defined in isolation, and some of them deserve highlighting and review.

Passing notes

These are diatonic or chromatic notes that create melodic movement in the connection between chords and that do not directly belong to them. Within a traditional practice, these notes may be limited to the notes of the diatonic scale from which the chord progressions originate, or they may even present simple chromatic elements.

+ = *passing notes*

In a broader chromatic concept, passing notes are those that are subject to the criterion of applicability of extensions. The differentiated note will be more effective, providing a better harmonic result, the more it is associated with one of the possible extensions of the chord in question.

It is advisable that the use of passing notes always be subject to this type of analysis. The correct interpretation of isolated melodic notes can greatly aid in understanding and expanding ideas when dealing with tonal progressions. Certain notes that represent extensions or alterations of a chord affect the entire harmonic process, and to always achieve a satisfactory result in harmonizations, it is necessary to pay attention to this aspect. In a major chord with a tonic function, for example, in addition to the major 7th tetrad, it is possible to insert the 6 and 9 extensions. This means that these notes have complementary quality in the chords. Remember that #5 is also an interval of the tetrad in this function. The remaining notes of the chromatic scale can appear in the harmonic discourse as passing notes that do not belong to the chord in the function in which they were applied. These notes should always appear in an independent melodic movement. Thus, beyond

the limits of extensions, passing notes, diatonic or chromatic, can create interesting effects, generating specific tensions in simple progressions.

Track 45

Track 46

One must continually strive for interval coherence in the application of passing notes within the chromatic concept so that the tensions generated by the alterations are consequential.

Retardations

Retardations are harmonic resolutions postponed by prolonging notes from one chord over the next. In this practice, the moving notes of a given chord are maintained in the following chord, delaying its resolution. Within a classical aesthetic, retardations occur in cadences where one of the notes of the dominant chord is prolonged over the tonic chord. Retardations can occur through descending or ascending movements, depending on the type of interval or tension from which it originates. The most common retardations are those made over the resting intervals of the tonal system, that is, the root, the third, and the fifth of the tonic chord.

Descending retardation of the third

A6 F#7^(b13) Bm⁷ E⁷ Aadd⁹

Ascending retardation of the third

E^b7M/G G^bdim Fm7 B^bsus B^b7(#5) E^b6

Descending retardation of the fifth

G7M E7^(b13)/G# Amadd⁹ D7^(b9) G

Ascending retardation of the fifth

$B^{\flat} \text{add}^9$ Cm^7 $B \text{sus}^9$ $B^{\flat} 7^M$

Descending retardation of the root

$C \text{add}^9$ $B^{\flat} m^6$ $F^{\#} 7/A$ $G7$ C

Ascending retardation of the root

$E \text{add}^9$ $C7/G$ $F^{\#} m^7$ $B7^{(b9)}$ E

The examples above show the most common types of retardations, which are those practiced on dominant-tonic cadences, made at the ends of musical phrases or periods. Delays can also occur during harmonic progressions and be applied in the connections between diatonic chords, in cadential movements with secondary dominants, or even in diatonic or chromatic harmonic progressions. See the application of this type of retardation in the following examples.

Track 47

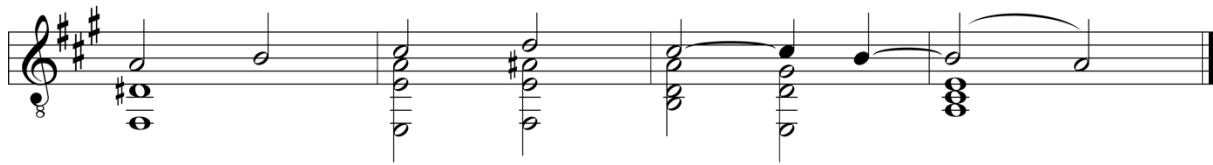
Track 47 consists of three staves of music. The first staff begins with a treble clef and a common time signature (C). The melody starts on a half note G4, followed by quarter notes A4, B4, and C5. The accompaniment features a steady bass line with chords. The second staff continues the melody with quarter notes D5, E5, F5, and G5, followed by a half note G5. The accompaniment continues with chords. The third staff concludes the piece with a half note G5, followed by quarter notes F5, E5, and D5. The accompaniment ends with a final chord.

Track 48

Track 48 consists of three staves of music. The first staff begins with a treble clef and a common time signature (C). The melody starts on a half note G4, followed by quarter notes A4, B4, and C5. The accompaniment features a steady bass line with chords. The second staff continues the melody with quarter notes D5, E5, F5, and G5, followed by a half note G5. The accompaniment continues with chords. The third staff concludes the piece with a half note G5, followed by quarter notes F5, E5, and D5. The accompaniment ends with a final chord.

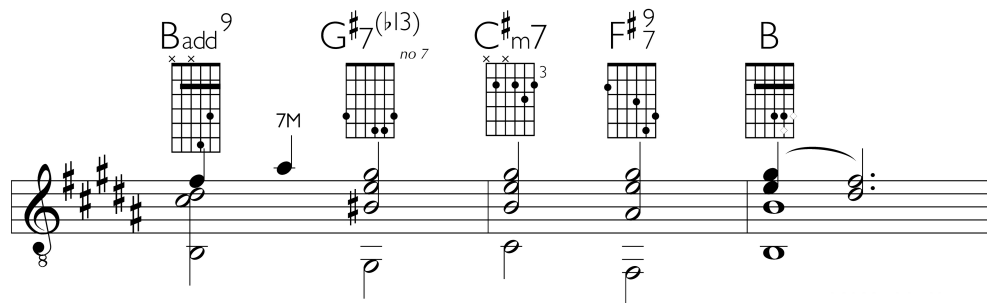
Track 49

Track 49 consists of two staves of music. The first staff begins with a treble clef and a common time signature (C). The melody starts on a half note G4, followed by quarter notes A4, B4, and C5. The accompaniment features a steady bass line with chords. The second staff continues the melody with quarter notes D5, E5, F5, and G5, followed by a half note G5. The accompaniment continues with chords.

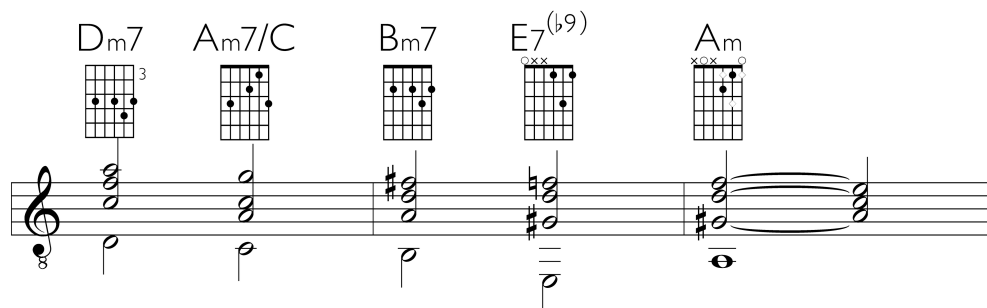


As mentioned in previous chapters, voice leading in tonal harmony is primarily achieved through the chaining of notes or tensions that need to move. All notes or tensions that need to move have a well-defined resolving path. This is the case with sevenths or ninths, which always tend to resolve by descending motion. Altered notes, which represent tensions in chords, also follow the path determined by the type of alteration applied: sharps resolve ascending, and flats descending. Thus, if we have different tensions or notes that need to be moved within the same chord, these can be retarded simultaneously, resulting in double, triple, and even quadruple retardations.

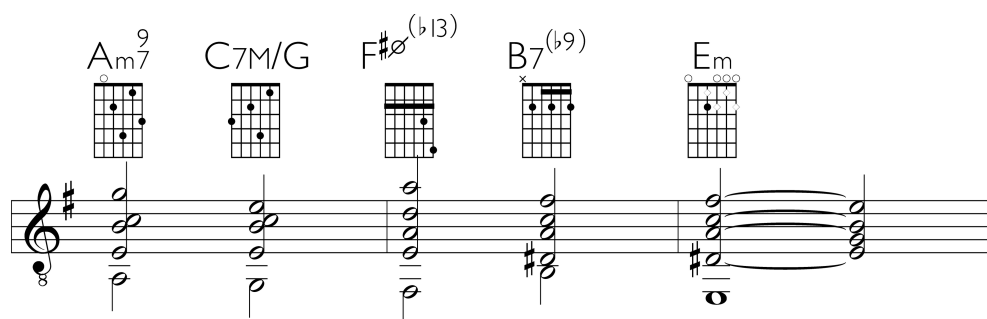
Double retardation:



Triple retardation:



Quadruple retardation:



In the case of triple and quadruple retardations, what occurs is the suspension of all the notes of the dominant chord that extend over the tonic chord. Only the bass performs the cadential movement, and the remaining voices are maintained.¹ The intervals of the dominant chord that extend are the following: third, fifth, seventh, and ninth. This type of harmonic practice comes from European classicism, and, within a conventional harmonic analysis, triple and quadruple retardations are also called dominant-over-tonic chords and can occur in both major and minor modes.

Track 50

The musical score for Track 50 is presented in three staves, all in the key of G major (one sharp) and common time. The notation includes chord symbols above the staves and bass line notes below. The first staff shows a sequence of chords: F#m, G#ø, G#dim, C#ø/G, F#7, Bm, Esus, and C#7/E#. The second staff continues with: F#m, C#ø/G, Asus⁹, A⁷, D7M, Bm, and Bm/A. The third staff concludes with: G#¹³, G#7(b13), C#sus⁹, C7(b9), and F#m.

¹ Note that in quadruple retardations, five-voice chaining is necessary.

Retardation of the tonic by a non-dominant diminished chord

There is also a way to delay the tonic chord resolution in perfect cadences. This is achieved by including a diminished chord between the dominant chord and the tonic chord. This new progression reverses the direction of the resolving notes of the dominant chord, creating surprise and enriching the harmonic discourse. The seventh and fifth intervals of the dominant, which naturally resolve by descending motion, have their paths reversed, resolving upwards.

The image displays three musical examples illustrating chord resolutions and guitar fretboard diagrams:

- Example 1:** Shows a progression from G7 to C, and then G7 to Cdim to C. The G7 chord has a 5th on the 5th string and a 7th on the 7th string. The C chord has a 1st on the 3rd string and a 3rd on the 5th string. The Cdim chord has a 1st on the 3rd string and a 3rd on the 5th string. The C chord has a 1st on the 3rd string and a 3rd on the 5th string.
- Example 2:** Shows a progression of chords: E/G[#], C7/G, F[#]m7, B7, Edim^{7M}, and E. Each chord is accompanied by a guitar fretboard diagram showing the fingerings.
- Example 3:** Shows a progression of chords: B7^M, A[#]7^(b13), D[#]7^(#9)/A, G[#]7^(b13), E7^M/G[#], F[#]7^(#5), Bdim, and B. Each chord is accompanied by a guitar fretboard diagram showing the fingerings.

Appoggiaturas

Appoggiaturas are small melodic ornaments, diatonic or chromatic, applied to the intervals of chords in a tonal progression. While the intervals that form the retardations always appear prepared in the preceding chord, the appoggiatura is presented without any preparation. Appoggiaturas, like retardations, can also be ascending or descending. When played on only one of the chord's voices, they are simple appoggiaturas. When they occur simultaneously on two or three notes of the chord, they are double or triple appoggiaturas.

Track 51

The image shows three staves of musical notation in G major. The first staff contains a series of chords: G major, A7, B7, C#7, D7, E7, F#7, G major. The second staff continues with: G major, A7, B7, C#7, D7, E7, F#7, G major. The third staff shows: G major, A7, B7, C#7, D7, E7, F#7, G major. The notation includes stems, beams, and various chord symbols.

In jazz, the appoggiatura chord, which makes an ascending or descending chromatic connection with the main chord, is very common. In these cases, all the voices of the chords move in parallel motion by semitone to reach the target chord.

The image shows a musical score with five measures of chords. Above each measure is a guitar chord diagram and a chord symbol: F#7(#9), B7(b13), E7, A13, and D9. The notation shows the chords in G major, with the appoggiatura chords (F#7(#9), B7(b13), E7) moving chromatically towards the main chords (A13, D9).

Embroideries

Embroideries are a harmonic effect that consists of applying melodic, diatonic, or chromatic gruppitos to each of the chord voices without altering their function.

The image shows two staves of musical notation. The first staff is labeled 'Diatonic embroideries' and shows a chord progression with diatonic gruppitos. The second staff is labeled 'Chromatic embroideries' and shows the same chord progression with chromatic gruppitos.

Track 52

The musical score for Track 52 is written in 3/4 time with a key signature of three flats (B-flat, E-flat, A-flat). It consists of three systems of two staves each. The first system features a treble staff with a melodic line containing triplets and sextuplets, and a bass staff with a constant bass pedal point on the tonic (F) and a melodic line with triplets. The second system continues the melodic development in both staves, with the bass staff maintaining the pedal point. The third system concludes the piece with a *poco rall.* marking and a final cadence in both staves.

Bass pedal point

The pedal point is a fixed note, generally on the tonic or dominant, that remains constant throughout the chord progression. Its most frequent application is in the cadential movements of the last period of a musical piece. The application of the bass pedal became established in the European Baroque period, especially with Bach, Buxtehude, and other organists of the time. The name “pedal” comes from the very instrumental characteristic of the organ, where the lowest notes are played with the feet and, for this reason, are called “pedal.”

The pedal point applied to the upper voices

Just as we have the effect of the pedal point applied to the basses, tonic or dominant, we can also refer to any fixed note that stands out in a harmonic progression as an “inverted pedal point.” It's common to see some tonal progressions where the highest note remains constant, acting as a kind of pivot for the chord progressions. In this case, since there is no melodic movement in the high voice, the dynamics of the progressions are given by the remaining notes of the chords. Besides being in the upper part of the chords, the “inverted pedal point” can also remain constant in the middle voices.

The image displays two rows of musical notation in G major, illustrating an inverted pedal point. The first row contains the following chords: C#m7, C9, Bm7, E7/Bb, Asus, A7, D7M, and G13. The second row contains: C#7(#9), F#7(b5), Bm7, E7(b13)no7, and A6. In both rows, the middle voice (the second line of the staff) maintains a constant G note (the second fret on the G string) throughout the progression. Above each chord name is a guitar fretboard diagram showing the chord voicing.

Here is an example of an inverted pedal point in the middle voice, on the G string of the guitar.

Track 54

Track 54 is a musical exercise in G major, 3/4 time, marked "Lento". It consists of three staves. The top staff shows a melodic line with eighth notes and rests, starting on G4 and moving up stepwise. The middle and bottom staves show a constant G note (second fret on the G string) in the middle voice, which serves as the inverted pedal point. The instruction "keep the third string open" is written above the first staff.

Exercises:

1. Apply appoggiaturas to regular harmonic sequences.
2. Apply ascending and descending embroideries to well-known melodies. Practice these embroideries while maintaining coherency with the type of chord in which they will be used: diatonic if it is a diatonic chord or chromatic if the chord is a secondary dominant or a borrowed chord.
3. Apply the non-dominant diminished chord in perfect cadences of different keys.
4. Develop sequences with a tonic pedal point.
5. Develop sequences with a dominant pedal point.
6. Develop sequences with inverted pedal point.
7. Practice the root, third, and fifth retardations in the following cadences:

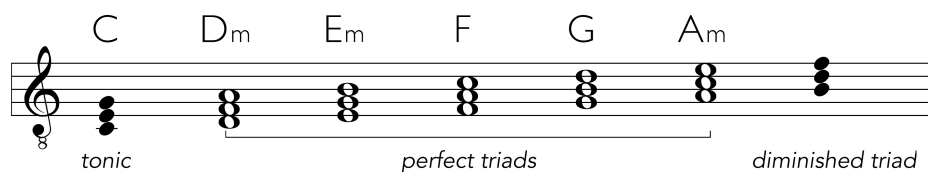
1)	C_{7M}^9	B^\emptyset $E7$	A_m	
2)	C_6^9	G_{m7} $C7^{(b9)}$	$F6$	
3)	C_{add}^9	E^\emptyset/B^b $A7^{(b13)}$	D_m	
4)	C_{7M}^6	B_{sus}^9 $B7^{(b9)}$	E_{m7}	
5)	C_6	A_{m7} D_7^9	$G7$	
6)	C	D_{m7}^9 G_7^9	A^b_{7M}	
7)	C_{m7}^9	D^\emptyset $G7$	F_{m7}	
8)	C_m^{7M}	A^\emptyset $D7^{(b9)}$	$G7$	
9)	C_{m7}	F_{m7} $G7^{(b9)}$	$A^b_{add}^9$	
10)	C_m	$A^b_{7}^9$ $G7^{(\#11)}$	C_{m7}^9	

8. Apply passing notes, diatonic and chromatic, to the following chord progressions:

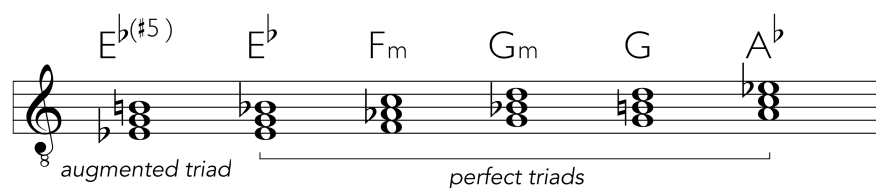
- | | | | | |
|-----|--|--|---|--|
| 1) | F [#] dim | Fdim E7 | A _m ^{add9} | |
| 2) | E _m E _m /D | F [#] ∅/C B7 | E _m | |
| 3) | B7 ^M A [#] 7 ^(b13) | D [#] ∅/A G [#] 7 | C [#] _m ⁹ | |
| 4) | E6 Edim | F [#] _m /E D [#] dim | E6 | |
| 5) | C G _m 7 | G ₇ ⁹ G/F | C/E | |
| 6) | A _m ^{add9} | B∅ ⁹ B ^b ₇ ⁹ | A _m ^{add9} | |
| 7) | B ^b /A ^b G _m 6 | C∅/G ^b F6 | E ₇ ⁹ E ^b _{7M} ⁹ | |
| 8) | F7 ^M G7 ^(#11) | G _m 7 C7 ^(b9) | F7 ^M | |
| 9) | G6/B B ^b _m 6 | A _m ¹¹ D7 ^(b9) | G ₆ ⁹ | |
| 10) | C _m ⁹ F ₇ ¹³ | F _m ⁹ G7 ^(b13) | C _m ^{7M} | |

Tonal fields

The traditional tonal harmonic concept teaches us that each of the diatonic scales within the tempered system represents an independent and isolated tonality. This framework gives us twenty-four scales and consequent tonalities: twelve major and twelve minor.¹ Each of these tonalities is represented by a single diatonic scale and its respective chords. Some chords formed from major and minor diatonic scales can change function in different tonal situations. For some of these chords to perform a tonic function, they must have perfect triadic structures. A perfect triadic structure is one consisting of a major or minor third and a perfect fifth on a root. On a major scale, for example, perfect triadic structures occur on the II, III, IV, V, and VI degrees, in addition to the first degree, which represents the tonic of that tonality.



In minor scales (harmonic minor, melodic minor, and natural minor), there are five perfect triads and one augmented triad that receive secondary cadential support:



Perfect triads, which are part of major diatonic scales, and perfect and augmented triads, which are part of minor scales, represent so-called neighboring tonalities, those that differ by only one alteration in their respective key signatures. When we use secondary dominants, what occurs are cadences over the chords of diatonic scales represented by perfect triads. The alterations that arise in the application of secondary dominants polarize with these triads of major and minor scales. It is correct to think that, in this secondary cadential path, the scalar structure will be altered in function of the momentary rest sought. And that, according to the traditional concept, these

¹ J.S. Bach, in his work 'The Well-Tempered Clavier', demonstrated the possibility of using all major and minor keys. This work consists of twenty-four 'Preludes and Fugues', each in a different key.

paths represent passing modulations, since a scale differentiated by an alteration and its resulting chords will provide harmonic governance of the passage.

Let's take the C major scale as an example, which only has natural notes. Imagine that the note **B**, the seventh degree of this scale, is altered to **B flat**. The result is that the C major scale transforms into an F major scale, and, consequently, some chords will also be modified. The same happens with the relationship between them: the tritone of the dominant of C major – **F-B** – will cease to exist, and a new tritone – **E-B flat** – will be formed. With the emergence of the new tritone, the cadential force will no longer reside in the combination **G7→C** (*dominant-tonic*), now transformed into **Gm7→C7** (*subdominant-dominant*), and will occur from the resolving force of the **E-B flat** tritone in the **C7→F** cadence.

The image contains two musical staves. The top staff is labeled 'C major scale' and shows the notes C, D, E, F, G, A, B. To its right, the notes F and B are shown as a 'dominant tritone'. Further right are the chords G7 and C. The bottom staff is labeled 'F major scale' and shows the notes C, D, E, F, G, A, B-flat. To its right, the notes E and B-flat are shown as a 'dominant tritone'. Further right are the chords C7 and F.

See how the presence of other alterations leads us, respectively, to the chords of the second and third degrees of the C major scale:

The image contains two musical staves. The top staff is labeled 'C major transformed into D harmonic minor' and shows the notes C, D, E, F, G, A, B-flat. To its right, the notes F and A are shown as a 'dominant tritone'. Further right are the chords A7(b9) and Dm7(9). The bottom staff is labeled 'C major transformed into E harmonic minor' and shows the notes C, D, E, F, G, A-flat, B. To its right, the notes F and A-flat are shown as a 'dominant tritone'. Further right are the chords B7(b9) and Em7(9).

In the following melody, the alterations of the secondary dominants suggest cadences over the chords that represent those degrees:

The image displays four staves of musical notation in treble clef, illustrating chromatic alterations of the C major scale. The notes are: C, C#, D, D#, E, E, F, F#, G, G, A, A#, B, B, C. Chord labels above the notes are: C major (C), G major (G), A minor (A), E minor (E), A minor (A), F major (F), D minor (D), diminished non-dominant (F#), and C major (C). The notation shows how these alterations can be used to create various chords while staying within the original tonality.

In the functional harmonic concept, all chromatic alterations of the scale can be used without abandoning the original tonality. A passing alteration does not always mean an effective modulation, since soon after applying the melodic tensions, we return to one of the chords of the main scale. The boundary between what is or is not a modulation is a useless discussion and does not contribute to learning the more profound meaning of tonal procedures. In general, we consider that modulation is complete when an entire musical period remains in the new tonality. If this is not the case, the resulting alterations can either signify tension for one of the chords of the main scale (in the case of secondary dominants and auxiliary diminished chords) or the presence of a borrowed chord, which only modifies the harmonic color without modifying the tonal focus.

What really interests us is the role that secondary dominants play in expanding the range of chords used within the same tonal plane. In addition, what we have are the chords derived from the remaining alterations that complete the chromatic total. The use of all chromatic possibilities within the same tonal plane forms the chord chart that we call the **Tonal Field**.

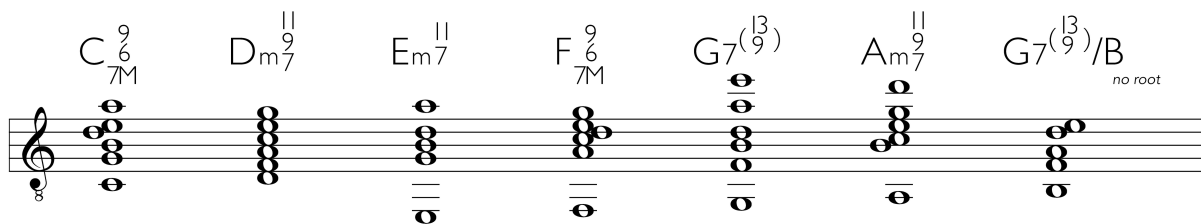
The **Tonal Field** is formed by chords that are structured on the chromatic total explained by the 17 notes of Tonal Harmony (see corresponding chapter), where all alterations resolve to the notes of the main scale.

In addition to the diatonic base, formed by any of the four tonal scales presented, we also have the five chromatic notes and their enharmonic that complete the following chart:

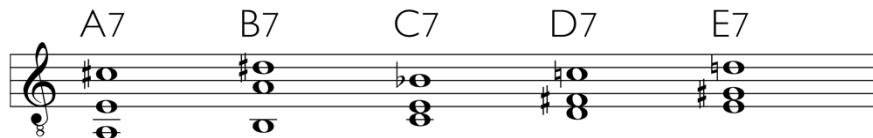


See how the C major tonal field is structured:

1. The C major scale and its respective chords as a starting point:



2. Expanding the chord chart by applying secondary dominants and their natural and altered extensions:



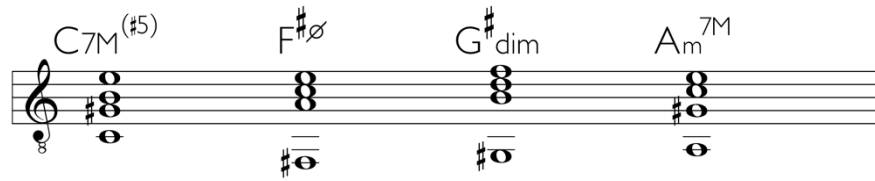
3. Use of secondary dominants combined with their respective cadential pairs. Remember that a cadential pair can be formed by the combinations II-V, IV-V, or VI-V:



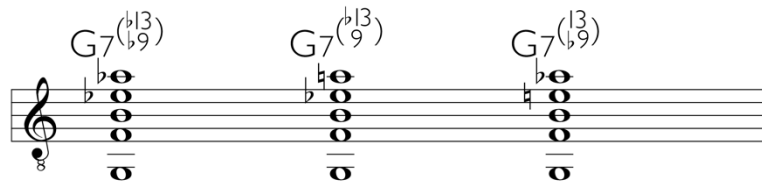
Note:

The cadential pair – **Am7 - D7** – going to G major – can have a double interpretation: **Am7** can be treated as the **VI of C major** or as the **II of G major**, that is, it can have C major or G major as reference scales. The same happens with the cadential pair **Bø - E7**, where **Bø** can be interpreted as belonging to the **C major scale**, or already presenting the **G#** characteristic of the **A harmonic minor scale**.

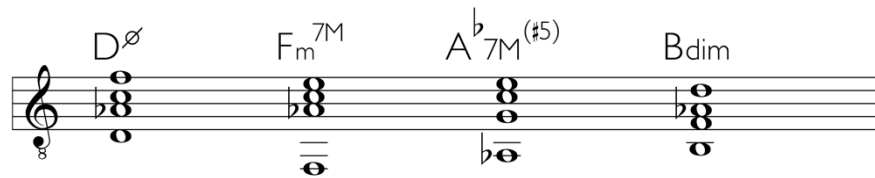
4. Differentiated chords of relative minors:



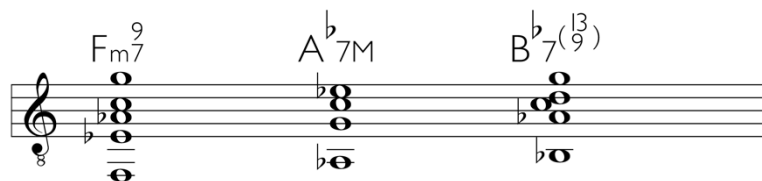
5. Dominants of homonymous scales:



6. Differentiated chords of the homonymous harmonic major scale:



7. Modal borrowings, starting with the differential chords generated from the homonymous natural minor scale (*Aeolian mode*):



8. Other modal chords, associated with modes derived from the major scale, melodic minor scale, and symmetrical modes (see 'Modal Harmony – Volume III'). Many of them are applied through exceptional resolutions of the dominant chord:



Below is a summary of the most frequently used chords within major and minor tonal fields.

Tonal field for major keys

C major tonal field

C major scale

C7M Dm7 Em7 F7M G7⁽¹³⁾ Am7 B[∅]

Secondary dominants alterations

A7^(b13) B7^(b13) D7⁽¹³⁾ E7^(b13) C7⁽¹³⁾

Relative minor scales

A minor - harmonic and melodic
differencial chords

C7M^(#5) F^{#∅} G^{#dim} Am^{7M}

C harmonic major
differencial chords

C harmonic minor
differencial chords

D^{∅9} Fm^{7M} G7⁽¹³⁾ A^{b7M}^(#5) Bdim Cm^{7M} E^{b7M}^(#5) G7^(b13)

C melodic minor
differencial chords

C natural minor
differencial chords

Cm⁹₆ F7⁹ G7⁽¹³⁾ A[∅] Cm7 D[∅] E^{b7M} Fm7 Gm7 A^{b7M} B^{b7}

Modal borrowing chords

G ^b Lydian	A ^b Dorian	B ^b Locrian	E ^b Lydian
G ^{b7M} ^(#11)	A ^b m7	B ^{b∅9}	E ^b ₆ ⁹

This is merely an illustrative chart that does not limit the possibilities. Note that the options for borrowing chords go beyond these limits with the application of extensions, omissions, inversions, exceptional resolutions, and altered dominants.

Tonal field for minor keys

C minor tonal field

C harmonic minor

C_m^{7M} $D\emptyset$ $E_b^{7M(\#5)}$ F_m7 $G7^{(b13)}$ A_b^{7M} $Bdim$

I II III IV V VI VII

C melodic minor (applicable differential chords)

C natural minor (applicable differential chords)

C_m6 $F7$ $G7^{(b13)}$ $A\emptyset$ C_m7 E_b^{7M} G_m7 B_b7

I IV V VI I III V VII

Secondary dominants (alterations)

$C7^{(b13)}$ $D7^{(b13)}$ B_b7 E_b7

V/IV V/V V/III V/VI

Relative major

Homonymous scale of the relative

G_m7 B_b7 C_m7 $D\emptyset$ E_b^{m7} $F\emptyset$ G_b^{7M} A_b^{m7} $B_b7^{(b13)}$ C_b^{7M} D_b^9

III V VI VII I (E_b^{7M}) II III ($G_b^{7M\#5}$) IV V ($B_b7, b9, 13$) VI VII ($Ddim$)

Homonymous major

Homonymous harmonic major

D_m7 E_m7 A_m7 F_m^{7M} $G7^{(b13)}$ $A_b^{7M(\#5)}$

Modal borrowing chords

$Cd\acute{o}rico$ $Cfr\acute{e}gio$

Note:

Other borrowed chords can also be applied to a minor tonal region through exceptional resolutions of the dominant chord, turnarounds, or chromatic approximation resolutions. Altered dominant chords can also be applied.

Other examples:

Chords of D major tonal field

Diatonic major scale

D7M Em7 F#m7 G7M A7⁽¹³⁾ Bm7 C#ø

Secondary dominants alterations

B7^(b13) C#7^(b13) E7⁽¹³⁾ F#7^(b13) D7⁽¹³⁾

Harmonic and melodic minor scales

differential chords

D7M^(#5) G#ø A#dim Bm^{7M}

Relative minor scales

Harmonic major
differential chords

Harmonic minor
differential chords

Eø⁹ Gm^{7M} A7⁽¹³⁾ Bb7M^(#5) C#dim Dm^{7M} F7M^(#5) A7⁽¹³⁾

Melodic minor
differential chords

Natural minor
differential chords

Dm⁹₆ G⁹₇ A7⁽¹³⁾ Bø Dm7 Eø F7M Gm7 Am7 Bb7M C7

Modal borrowing chords

Ab Lydian Bb Dorian Locrian 2M F Lydian
 A^b7M^(#11) B^bm7 Cø⁹ F⁹₆

Chords of G major tonal field

Diatonic major scale

G7^M Am7 Bm7 C7^M D7^(b13) Em7 F#[∅]

Secondary dominants alterations

E7^(b13) F#7^(b13) A7^(b9) B7^(b13) G7^(b9)

Harmonic and melodic minor scales
differential chords

G7^{M(#5)} C#[∅] D#^{dim} Em^{7M}

Relative minor scales

Harmonic major
differential chords

Harmonic minor
differential chords

A^{∅9} Cm^{7M} D7^(b13) Eb7^{M(#5)} F#^{dim} Gm^{7M} Bb7^{M(#5)} D7^(b13)

Melodic minor
differential chords

Natural minor
differential chords

Gm⁹₆ C⁹₇ D7^(b13) E[∅] Gm7 A[∅] Bb7^M Cm7 Dm7 Eb7^M F7

Modal borrowing chords

Db Lydian Eb Dorian F Locrian 2M Bb Lydian
 D^b7^{M(#11)} E^bm7 F^{∅9} B^b₆⁹

Chords of D minor tonal field

Harmonic minor

Dm^{7M} $E\emptyset$ $F7M^{(\#5)}$ $Gm7$ $A7^{(b13)}$ $Bb7M$ $C\#dim$
 I II III IV V VI VII

Melodic minor
differential chords

$Dm6$ $G7$ $A7^{(b13)}$ $B\emptyset$ $Dm7$ $F7M$ $Am7$ $C7$
 I IV V VI I III V VII

Natural minor
differential chords

Secondary dominants

$D7^{(b13)}$ $E7^{(b13)}$ $C7$ $F7$
 V/IV V/V V/III V/VI

Relative major

$Am7$ $C7$ $Dm7$ $E\emptyset$ $Fm7$ $G\emptyset$ A^b7M B^bm7 $C7^{(b13)}$ D^b7M E^b9
 III V VI VII I II III IV V VI VII
 (F7M) (Ab7M#5) (C7,b9,13) (Edim)

Homonymous scale of the relative

Homonymous major

$Em7$ $F\#m7$ $Bm7$ Gm^{7M} $A7^{(b13)}$ $Bb7M^{(\#5)}$

Homonymous harmonic major

Modal borrowing chords

$Ddórico$ $Dfrígio$

Chords or A minor tonal field

Harmonic minor

A_m^{7M} B° $C7M^{(\#5)}$ D_m7 $E7^{(\flat 13)}$ $F7M$ $G^\#\dim$
 I II III IV V VI VII

Melodic minor
differential chords

A_m6 $D7$ $E7^{(\flat 13)}$ $F^\#\circ$
 I IV V VI

Natural minor
differential chords

A_m7 $C7M$ E_m7 $G7$
 I III V VII

Secondary dominants

$A7^{(\flat 13)}$ $B7^{(\flat 13)}$ $G7^9$ $C7^{13}$
 V/IV V/V V/III V/VI

Relative major

E_m7 $G7^9$ A_m7 B° C_m7 D° E_b7M F_m7 $G7^{(\flat 13)}$ A_b7M B_b^9
 III V VI VII I (C7M) II III (E \flat 7M#5) IV V (G7,b9,13) VI VII (Bdim)

Relative homonymous

Homonymous major

B_m7 $C^\#_m7$ $F^\#_m7$ D_m7M $E7^{(\flat 13)}$ $F7M^{(\#5)}$

Homonymous harmonic major

Modal borrowing chords

Adórico Afrégio

Exercises

1. Write the tonal field for the following keys:
 - a. F minor
 - b. C sharp minor
 - c. A major
 - d. E major
 - e. G minor
 - f. E flat major
 - g. B minor
 - h. F major
 - i. B flat major
 - j. E minor
 - k. D major
 - l. A flat major
 - m. F sharp minor
 - n. G major
 - o. D flat major

2. What does Abm7 represent in C minor?
3. What does F[#]ø represent in C major?
4. What does Ebm6 represent in G minor?
5. What does A7M(#11) represent in A major?
6. What does F/E represent in E major?
7. What does Db7⁽⁹⁾ represent in A flat major?
8. What does D^ø represent in A minor?
9. What does Bbm6 represent in D minor?
10. What does B7⁽⁹⁾ represent in C major?

11. Analyze the chords in the following excerpt:

6th in Eb

The musical score is written for guitar in the key of E-flat major (Eb) and is in the 6th fret. The time signature is 3/4. The piece consists of 11 staves of music. The first staff begins with a treble clef, a key signature of two flats (Bb and Eb), and a 3/4 time signature. The music is written in a single melodic line. Chord markings are placed below the staff, often with a bar line and repeat signs. The markings include: $\rho.$, $\flat\rho.$, $\bar{\rho.}$, $\flat\bar{\rho.}$, $\bar{\rho.}$, $\flat\bar{\rho.}$, $\bar{\rho.}$, $\flat\bar{\rho.}$, $\bar{\rho.}$, $\flat\bar{\rho.}$, and $\bar{\rho.}$. Some markings are accompanied by a bar line and repeat signs. The piece concludes with a double bar line and repeat signs, followed by a final chord marking $\bar{\rho.}$ with a '3x' annotation.

The image displays a musical score for guitar, consisting of ten staves of music. The notation is written in treble clef with a key signature of three flats (B-flat, E-flat, A-flat) and a common time signature (C). The music features a variety of rhythmic patterns, including eighth and sixteenth notes, and rests. Dynamic markings such as *p.* (piano) and *pp.* (pianissimo) are used throughout. The score includes repeat signs and first/second endings. The final staff concludes with a double bar line and repeat dots.

Chord melody

Chord melody is a form of harmonization, characteristic of the jazz language, where each note of the melody of a selected theme is harmonized with a chord in a closed presentation. The structures of a chord melody are usually made in three or four voices in parallel motion. These chords are subordinate to the original harmonization of the theme; that is, all inversions and chord positions can and should be applied so that the harmonic content of the theme is clear. It is also possible to use all the resources for reharmonizing the theme, and, in this case, the coherence in the construction of these chords will be subordinate to the new chord grid. The selection of notes to be used in the elaboration of the chord melody should always be made considering the limits of applicability of the extensions. It is important to have clarity about the quality of each chord in the harmonic progression so that one can know what type of complementary interval should be used. Similarly, it is essential to have criteria and a certain aesthetic rigor regarding the notes to be omitted.

Track 55

The image displays two staves of musical notation in 7/4 time. The first staff contains the following chords and diagrams: E7(b13), Am7M, Am7, Am6, Dm7, E7(b9), and E7(#9)/Bb (no root). The second staff contains: Am add9, Am9, Am add9, Dm7M, B°, E7(#9), E7(b9)/D, and Am add9/C. Each chord is accompanied by a guitar chord diagram showing fingerings on the fretboard.

When a melody note cannot be associated with any interval of the chord (*tetrad or extensions*) presented in the original harmonic grid, the correct approach is to leave that note isolated or treat

it as a passing note. In the case of instrumental harmonization, this note will be played in isolation, and in the case of vocal harmonization (*or even when dealing with a wind or string section*), the chord should be prolonged for the time that this note moves. It is common in chord melody practice to omit the bass note, assuming that it should be played by a bass player.

See, in the following example, the different possibilities for assembling chords in a complete cadence in C major with the bass notes omitted. Note that the highest note of each chord structure is always located on the first string of the guitar, which, however, should not be a rule. Because the bass is left free, it is advisable not to go too low with the lowest note of the chords so as not to create conflict with the actual bass note. When this is the case, it is best to opt for three-part harmony. Within the context of harmony voices, the notes on the fifth and sixth strings of the guitar belong to the bass, and when used in structuring the harmonic section, attention is necessary (*review 'Chord Families' and 'Harmonic Complements' – volume 1*).

Example 1

Example 1 shows three staves of musical notation in C major. The first staff is labeled C7M and contains seven chords. The second staff is labeled Dm7 and contains seven chords. The third staff is labeled G7 and contains seven chords. The chords are arranged in a sequence that suggests a cadence. Some chords have double sharps or double flats, indicating altered voicings.

Compare this to the possibilities of structuring the chord melody in a complete A major cadence.

Example 2

Example 2 shows a single staff of musical notation in A major. The chords are labeled A⁹/₆, ⁹/_{7M}/₆, ⁹/₆, ⁹/_{7M}, ^{7M}/₆, ⁹/₆, ⁹/_{7M}, etc. The notation shows various voicings for these chords, including some with double sharps or double flats.

Two musical staves showing chord progressions. The first staff starts with a Bm7 chord and is followed by several other chords. The second staff starts with an E7 chord and is followed by several other chords. Both staves have "etc." written above them.

Examples of harmonization with chords in fourths:

Track 56

Two musical staves for Track 56. The first staff shows chords: C[#]m₄, F[#]m₄, Bm₄, F[#]m₄, E_{m4}, D_{m4}, Bm¹¹, E7^(b13). The second staff shows chords: C[#]m₄, F[#]m₄, D[#]m₄, F[#]m₄, C[#]7^(b9)/E[#] *s.f.*, F[#]13/E *s.f.*, B7^(b9)/D[#] *s.f.*, E7^(b9), A6.

Track 57

Two musical staves for Track 57. The first staff shows chords with guitar diagrams: D₆, G[#]7, G[#]7, C[#]7^(b5), C[#]7^(b9), F[#]13, B7^(b9), C_{m6}. The second staff shows chords with guitar diagrams: B_{m6}, B^b7, A₇, E^b7^(#9), D₉. Labels "b13", "B7 function", and "A7 function" are present.

Next, an example of a four-voice chord melody in a minor key. Notice how the notes are arranged to maintain a well-balanced structure, aided by counterpoint lines.

Track 58

The musical score for Track 58 is presented in four systems, each with guitar chord diagrams above a staff of music. The key signature is G minor (one flat) and the time signature is common time (C).

- System 1:** Chords include B7(b5)/D#, Em/D, C#dim, C7M, G7M/B, A#dim, and F#7(b5). The melody consists of quarter notes: D4, E4, F4, G4, A4, B4, C5, B4, A4, G4, F4, E4, D4.
- System 2:** Chords include B7(b9)/F, B7(b5), B7(#9), Em add9, C#dim, and B7(b5)/A. The melody continues with quarter notes: D4, E4, F4, G4, A4, B4, C5, B4, A4, G4, F4, E4, D4.
- System 3:** Chords include G7M(#11), F#dim(b13), F7, B7(b5)/D# (labeled "B7 function" and "n.r."), Em7 9, B7(b13)/D# (labeled "n.r."), Em7/D, and C#dim. The melody continues with quarter notes: D4, E4, F4, G4, A4, B4, C5, B4, A4, G4, F4, E4, D4.
- System 4:** Chords include C7M, B7(b13), and Em7 9. The melody concludes with quarter notes: D4, E4, F4, G4, A4, B4, C5, B4, A4, G4, F4, E4, D4.

Exercises:

Develop three- and four-part voice examples based on standard melodies.

Modulation

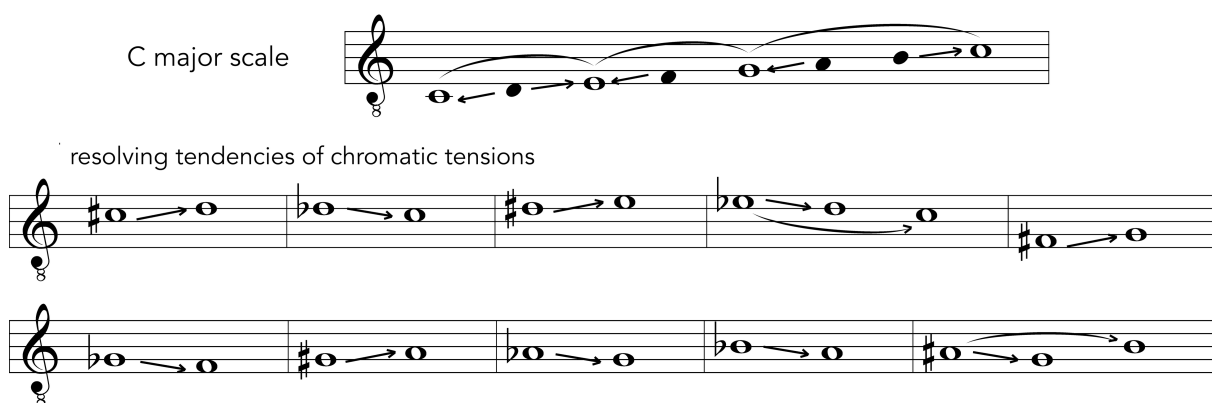
Modulation is the transformation in the hierarchical relationship between the notes of the chromatic scale in tonal procedures. Every musical composition that follows tonal patterns, whether a simple binary song or a large-scale work, has the tonic triad as its sovereign chord, from which we start and to which we always return. The tonic triad constitutes the main pole of attraction towards which the other notes of the diatonic and chromatic scales are directed and represents the main element in the tonal unity of a musical composition.

Modulation is the process of breaking with the centralism exerted by the tonic. The search for new tonal centers, through the redirection of the notes of the chromatic scale, causes the initially established intervallic relationships to be altered. In changes of tonality, the resolving tendency of each note changes, and the functional quality of the chords, consequently, also changes.

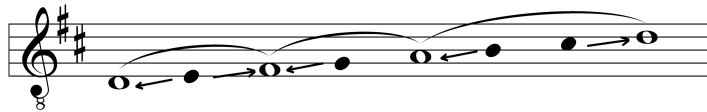
See the chromatic tensions in the key of C major:



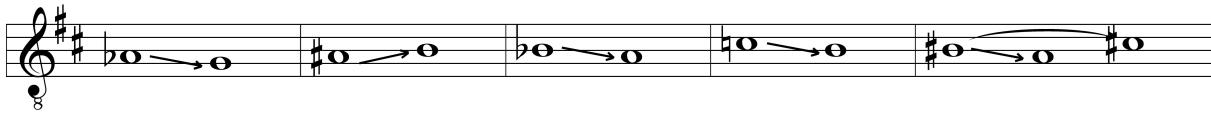
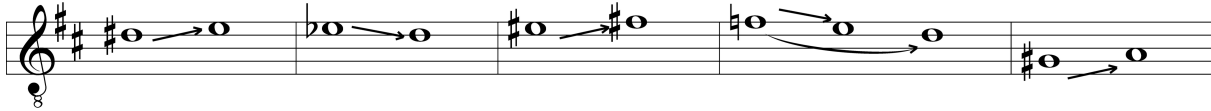
Next, see how the resolving tendencies of these chromatic notes change within different tonalities. Note that when the tonality changes, the relationship between the notes also changes. The resolving tendencies of chromatic tensions form a fundamental aspect for a profound understanding of the modulation process.



D major scale



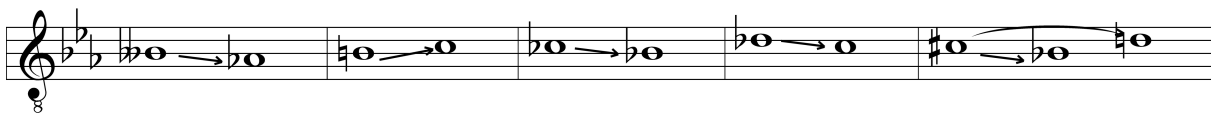
resolving tendencies of chromatic tensions



E flat major scale



resolving tendencies of chromatic tensions



F harmonic minor



resolving tendencies of chromatic tensions



for C7(#9)

Note:

The tonal unity of a musical work was a consensus during a long period of European music, since the establishment of the Tonal System in the 16th century to the beginning of the 20th century. Even Richard Wagner and his chromatic complexity at the end of the 19th century still maintained a clear tonal process, respecting the traditional aesthetic code of returning to the initial tonality and maintaining tonal unity. Gustav Mahler is a good example of how this code was abandoned, with the use of what we now call 'progressive tonality,' which consists of changing the tonal plane from the beginning to the end of a musical composition. We can see, in several of Mahler's symphonies, that the initial key is not the same as the final one. In

some of them, the proximity between the keys is maintained, since the modulations do not exceed the limits of the so-called 'neighboring keys.' This is the case with Symphony No. 2 (beginning in C minor, ending in E-flat major – modulation to the III of the main scale), Symphony No. 4 (beginning in G major, ending in E major – modulation to the VI of the main scale), or Symphony No. 7 (beginning in E minor, ending in C major – modulation to the VI of the main scale). However, Mahler went beyond this level and, in some of his symphonies, the distance between the initial and final key of the work is quite significant. Symphony No. 5, which begins in C-sharp minor, ends in D major. And Symphony No. 9, which begins in D major, concludes in D-flat major.

Tonal structures are always established from the main scales, which are basically divided into two types: major (major and harmonic major) and minor (harmonic minor, melodic minor, and natural minor). We also know that these scales can be played in 12 different situations, where each note will represent the tonic of a new scale. This is without considering the enharmonic possibilities that the tonic may present (for example, C sharp major and D flat major). If this is the case, we will have 24 different scale possibilities, 12 major and 12 minor, and consequently, 24 different tonalities. This practice, however, only became possible after the implementation of the tempered system.

The tempered system was the option found to overcome the limitations presented by the Pythagorean system. The physical division of the octave, based on natural harmonics, results in a restricted musical process, since instruments with fixed tuning, tuned according to this basis, only allow musical practice in nearby keys. A keyboard, for example, tuned according to the Pythagorean principle, may sound perfectly in tune in a key like C major and in keys close to it. However, if on that same keyboard we want to play a musical piece in B major or G-flat major, the result will be quite unpleasant. The temperament of the scale, therefore, corrects these distortions, detuning some notes in favor of overall balance. In this tuning system, only the octaves remain perfectly just and equal. Although the intervals of fifths and fourths in the tempered scale are not acoustically perfect, as happens in the Pythagorean system, the resulting new intervals are not so different. The fifths are slightly shortened in favor of the thirds. This concept of tuning, which had been experimented with by some researchers and theorists, was properly established in 1691 by Andreas Werkmeister (1645-1706). Andreas Werkmeister was a German organist,

composer, and theorist who, through his research, undeniably helped to change the landscape of European tonal music.

Johann Sebastian Bach was quite familiar with Werkmeister's writings, and it was out of complete sympathy and belief in his concepts that he decided to organize the most original and significant work on tonalities written up to that time: **The Well-Tempered Clavier**.¹ Aside from its undeniable artistic quality, the Well-Tempered Clavier was also produced with a theoretical purpose: to prove that this good temperament of the scale made possible the indiscriminate approach to all major and minor tonalities. The work was written, in Bach's own modest words, "for the use and benefit of young musicians seeking to learn, as well as for the entertainment of experienced musicians." The Well-Tempered Clavier addresses all possible major and minor tonalities through a series of preludes and fugues. This treatise was initially published in manuscript form, as its first printed edition only appeared in 1801. It became a well-known work among musicians of the time, but after J.S. Bach's death, the work fell into complete oblivion. The contrapuntal style it presented became outdated, according to the new aesthetic choices that followed. European music experienced a period in which musical production was far from reaching the depth and harmonic richness seen in the works of this great German master. It took a while before Mozart, and his successors, revived the richness of Bach's chromatic process and brought again to light this remarkable work that is the Well-Tempered Clavier. Mozart knew it in detail and helped to disseminate this work among new generations of musicians and composers. The Well-Tempered Clavier remains a major musical reference even today.

With the implementation of the tempered system, every tonality became practicable and every modulation feasible. The theoretical foundations presented by Werkmeister, the publication and subsequent dissemination of the content of the two volumes of The Well-Tempered Clavier, as well as several other experiments of a similar nature, opened new horizons for the tonal process to become broad and without the limitations of the previous model.

¹ A keyboard work initially composed of 24 Preludes and Fugues, written in major and minor keys, first performed in its entirety in 1722. In 1744, a second book was created, simply titled *Twenty-Four Preludes and Fugues*. Currently, both are known as *Books I and II of the Well-Tempered Clavier*. For years, it was only disseminated through its manuscript.

There was also a minor adjustment of details regarding the tempered system, and what prevails to this day is equal temperament. This type of scale temperament consists of redistributing the intervals within the octave in an isochromatic way, that is, making the semitones that compose it exactly equal.

Isochromatic temperament, like the well-tempered system proposed by Werkmeister, was for a long time a rather controversial subject. People continued to lament the fact that fifths and fourths were no longer perfect and natural and that thirds had lost their characteristic brilliance. However, the implementation of isochromatic temperament allowed unrestricted transit through all major and minor keys. All keys came to have the same meaning because, from a structural perspective, major and minor scales acquired the same intervallic configuration. Consequently, the functional relationships generated by the chords derived from them came to have the same weight and value. In a cadence in C major, for example, the progression and resolution of the intervals of the chords occur in the same way as in a cadence in E-flat major, with the same clarity and balance. Or, in a cadence in B minor, the movement of voices in chord progressions has the same effect, balance, and clarity as a similar process in D-flat minor, F minor, and other minor keys.

The limit in the application and use of different tonalities in the same passage or piece of music should always be associated with the pursuit of artistic expression. The variety of tonal planes in the same work does not confer quality and may only represent a pointless exercise in modulation. The change of tonal planes during a composition aims to generate surprise and create more interest in the harmonic development. Certain unexpected harmonic solutions, as well as the exploration of different tonal centers, should be used with considerable discretion. They represent an important tool to achieve greater depth in the musical quality of a work.

There are several harmonic techniques used in modulation processes. The simplest are those performed on degrees of the scale itself, called modulation to neighboring keys, and are achieved through alterations of secondary dominants. We know that secondary dominants form cadences that lead harmonic progressions to a temporary rest on the degrees of the main scale. When this

type of cadence is repeated during the same passage, modulation occurs.¹ Modulations to degrees of the same scale are treated as nearby modulations.

1. Modulation to the degrees of the C major scale (*neighboring keys*)

a. Modulation to the II:

C major to D minor

C E[∅]/B^b A7 B^b7M E[∅]/G A7 D_m

C7M E[∅]/B^b A7 B^badd⁹ Gm6 D_m/A A7 D_m

b. Modulation to the III:

C major to E minor

C F[#]∅ E_m/G C[#]∅/E A B7 C7M F[#]∅/A E_m/B B7 E_m

C7M F[#]∅ E_m7/G C[#]∅/E A⁷ B7 C7M A_m⁷ F[#]∅ B7^(b13) E_m⁷

c. Modulation to the IV:

C major to F major

C G_m/B^b C/B^b F/A G_m7/B^b C7 F

C^{add9} G_m/B^b C/B^b F6/A B^b7M C7^(b9) F6

¹ In these cases, there is a pointless discussion about where the secondary cadential process ends and the modulation begins. What really matters is understanding the effect that these deviations from the tonic have, whether from a harmonic or aesthetic point of view.

d. Modulation to the V:

C major to G major

C D/C G/B E_m A_m7/C D7 G

C₆⁹ F₇[#]/C G7M/B E_m^{add9} A_m7 D7/F₇[#] G

e. Modulation to the VI:

C major to A minor

C F/A B₇⁹/D E/D A_m/C D_m/F A_m/E E7 A_m

C7M F7M/A B₇⁹/D E7^(b9) A_m^{add9} F7M C7M/G E7^(b9)/G₇[#] A_m7

2. Modulation with Picardy third cadence

Picardy third cadence modulations are those made by applying the secondary dominants of the minor degrees, which resolve to major homonyms. This is considered a close modulation due to the simplicity in resolving the seventh interval of the dominant to perform it.

a. Modulation to the II with Picardy cadence:¹

C major to D major

C E₇⁹/B₇^b A7 D_m⁹ G_m6 D_m/A A7 D

C7M E₇⁹/B₇^b A7 D7 G6 D/A A7 D

¹ Although the number of key changes is greater than that predicted for near modulations according to classical theory, Picardy third modulations are also near modulations.

b. Modulation to the III with Picardy cadence:

C major to E major

C C/B F[#]7/A B/A E/G[#] A B7 E

C^{add}9 E^m7/B A^m7 B/A E⁷M/G[#] A^{add}9 B⁷ E⁷M

c. Modulation to the III with Picardy cadence:

C major to A major

C F/A B⁷/D E/D A/C[#] D/F[#] A/E E7 A

C⁷M F⁷M/A B⁷/D E⁷(^b9) A^{add}9/C[#] F[#]m7 B^m7 E¹³ A

There are other types of modulation used for distant keys, those that differ by several sharps or flats in the key signature, or even those that are further removed from the original key in the circle of fifths and fourths. For this type of modulation to be coherent and fluent, it is necessary, above all, to clearly establish the path that the chromatic alterations resulting from the process should follow. Modulations made in this way are called modulations with preparation and are always made using a common chord called a **pivot chord**. The pivot chord is a chord with different functions, common to numerous keys. See, for example, how a C major triad can acquire, in addition to its tonic function in C major, a series of different functional meanings through its reinterpretation:

I - tonic
C major

IV - subdominant
G major

V - dominant
F major or minor

III - borrowed chord
Natural A minor

VI - subdominant
E minor

VII - borrowed chord
Natural D minor

Or even:

C sharp major
V - III (E# minor)
E minor
V of Neapolitan
B flat major or minor
V - V
E flat major
V - II
A flat major
V - VI
B minor
Neapolitan II

3. Modulation with exceptional resolutions

We had already seen different possibilities for chord substitution, deceptive cadences, and other ways to create surprises in harmonic progressions. One way for immediate modulation, which happens without preparation, is the one done from the exceptional resolution of the dominant seventh chords. The functional transformation of the last note of a melody can push the harmonic process to distant keys from the initial. These exceptional resolutions of the dominant seventh chord also help as an element to improve the modulation process. See some examples of transformation using the note C:

a) Using the note C as the third of a major chord.

C7M *Am7* *Dm7* *G7* *Ab7M* *Fm add9* *Bbm7* *Eb7(b9)* *Ab6*

b) Using the note C as the sixth of a major chord.

Cadd9 *Bbm6* *Am6* *G7* *Eb6/G* *C7(#9)/Gb* *Fm7* *Bb7(b9)* *Eb9*

c) Using the note C as the diminished fifth of a half-diminished chord.

C7M *A7(b9)* *D7(b13)/Ab* *G7* *F#dim* *B7(#9)* *E7M* *B7* *E9*

d) Using the note C as the #11 of a major chord.

C₇⁹_M D₇^(b13)/A^b G₇⁹ G₇^b_M^(#11) F₇^(b13) B_{m7}^b E₇^(b9) A_{m7}^b D₇^b/A^{bb} G₆^b

e) Using the note C as the ninth of a minor chord.

C₇_M A_{m7}⁹ D_{m7} G₇⁹/B B_{m7}⁹ E₇^(b9) A₇^b_M F₇^(b13) B_{m7}^b E₇^(b9) A₇^b_M

4. Modulation through reinterpretation of chords with two tritones.

As we saw earlier, the diminished chord and the dominant chord with a diminished fifth can have four different resolutions. This is due to the enharmonic transformation of the tritones that form them. We know that each tritone can have two different resolutions, and, in the case of the chord types mentioned above, we can have four different harmonic approaches for them. This can be an effective tool for sudden changes in tonality. Since the chord resolution is done through the enharmonic transformation of its notes, the result of the transformation is always surprising. However, from a theoretical perspective, the voice leading in this process is entirely coherent. See some cases of modulation through resolution by enharmonic transformation of the tritones of dominant diminished chords, non-dominant diminished chords, and dominant chords of the 7(b5) type.

a. Dominant diminished chord:

C_{add}⁹ F₇_M/A B₇^o/A G₇[#]_{dim} C_{m7}⁹/G F_{m7} C_m/G G₇ C_m

C^{add9} F7M/A B^ø/A G^{#dim} E^b/G C7/G^b Fm7 B^b7 E^b

* G^{#dim} transformed into Ddim

C^{add9} F7M/A B^ø/A G^{#dim} F^{#m} Bm F^{#m}/C[#] C[#]7 F^{#m}

* G^{#dim} transformed into E^{#dim}

b. Non-dominant diminished (transformed into dominant):

C F/A A^{dim} B^b G7(^b13) C⁹ F¹³ B^b

* F^{#dim}

C F F^{#dim} Em/G F^{#ø}/A Em/B B7 E

F^{#m}7 B¹³ E C^{#m}7 F^{#m}7^{||} B7 E E/D[#] C^{#m}7 E/B

A D^{#ø}/A G^{#m} C^{#m}7 F^{#m}7^{||} B7 E

c. 7(b5) dominant chords

C7M F7M^(#11) G7⁹ C7/G^b B7M⁹ C[#]m7 F[#]_{sus}⁹ F[#]7^(#11) B7M⁹

* enharmonization: C7(b5) to F#7(#11)

C⁹/₆ F7M G7⁹ C7/G^b D^b/F B^bm7 E^bm7/G^b A^b7¹³ D^b7⁹/₆

* enharmonization: C7(b5) to A^b7(#5,9)

Some modulations are direct or without preparation. In these cases, what happens is that at the end of a period there is simply a change of keys. The passage that ends in a certain key gives way to another that begins abruptly in a different tonal center. In this type of modulation, it is very common to change to a new key situated a semitone above the original key.

5. Modulation by Neapolitan cadence

Another type of modulation is achieved by inserting the Neapolitan chord into the cadence. The Neapolitan chord is used as a pivot chord for changing the tonal center.

Am7 G[#]dim^(b13) Gm7 A7^(b9) Dm7⁹ G7^(b13) Cm⁹/₆

F7^(b13) B^b7M⁹ Gm7¹¹ C7/G^b F7^(#5) B^b6

6. Modulation by harmonic march

Harmonic march modulation consists of connecting a sequence of dominant seventh chords until the desired key is reached. It is considered a weak procedure for modulating to distant keys, but

it is effective when the issue is simply moving away from the original key. The succession of dominant seventh chords is always made with the roots jumping by fourths, starting as secondary dominants until the desired distance from the main key is achieved. Since this type of progression is only made with dominant chords, it is possible to use all kinds of alterations and inversions (altered dominants, subV, and others). See the same harmonic structure repeated five times, so that with each repetition, the dominant seventh chord becomes more complex.

The image displays five staves of musical notation, each showing a sequence of chords in G major. The chords are written in treble clef with a key signature of one sharp (F#). The progression starts with simple chords and becomes increasingly complex with alterations and inversions in each subsequent staff.

Staff 1: C, C7/G, F7, B^b7, E^b7, A^b7, D^b7, F#7, B6

Staff 2: C⁹₆, C⁹₇/G, F⁹₇, B^b7¹³, E^b7⁹, A^b7¹³, D^b7⁹, F#7^(#5), B6

Staff 3: C^{add9}, E^ø/B^b, F7/A, D^ø/A^b, E^b7/G, C^ø/G^b, D^b7/F, F#7^(#11), B⁹

Staff 4: C/G, C7^(b13)/G^b, F⁹₇, B^b7^(b13)/F^b, E^b7⁹, A^b7^(b13)/E^b, D^b7⁹, F#7^(#5)/C, B

Staff 5: C^{add9}, C7^(b5)/E, F/E^b, B^b7^(b9)/D, E^b/D^b, A^b7^(b5)/C, D^b/C^b, F#7^(b9)/A[#], B

Exercises

1. Create examples with resolving inclinations of the diatonic scale and the remaining chromatic tensions in the following keys:

- a. D minor
- b. A major
- c. G major

- d. C minor
- e. G minor
- f. A flat major
- g. B flat major
- h. C sharp minor

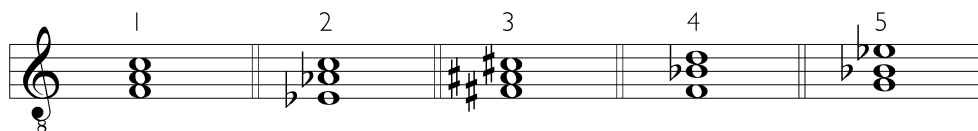
2. Develop modulating harmonic sequences for the degrees (neighboring keys) of the following scales:

- a. A major
- b. G major
- c. C minor
- d. A flat major
- e. D minor
- f. G minor
- g. E major

3. Perform modulations with Picardy cadences in the following keys:

- a. F major
- b. A minor
- c. B flat minor
- d. E flat major
- e. G minor
- f. A-flat major

4. Interpret the possibilities of using the following triads as pivot chords:



5. Perform modulating progressions through the exceptional resolution of the dominant seventh chord.

6. Perform modulations through the enharmonic transformation of the dominant diminished chord.

7. Perform modulations through the enharmonic transformation of the non-dominant diminished chord.

8. Perform modulations through the enharmonic transformation of the 7(b5) chords.

Reharmonization

The practice of reharmonization consists of exchanging or replacing chords in themes with an already defined harmonic structure. The theme to be reharmonized is generally a well-established theme whose harmonic content clearly exposes the main functions of its original chords. The reason for choosing a well-established theme is the possibility of causing an even greater surprise effect on the listener, who has the original harmonic reference in their memory. The substitution of chords, or reharmonization makes the harmonic content of a musical theme more elaborate and sophisticated, and this process can consist of changing only one of the chords in the theme or changing all of them completely. The scope of a reharmonization can be diatonic or chromatic and includes the insertion of new chords, increasing the number of chords used. The limit of applicability between these extremes is purely aesthetic, and it is up to the harmonizer to decide between what can be a harmonic enrichment or an exaggeration.

Based on these concepts, we can establish the following methodology for the reharmonization process:

1. Analysis of the original chord functions of the theme.
2. Insertion and substitution of chords from the same diatonic scale from which the theme is constructed.
3. Insertion or substitution of chords through secondary dominants.
4. Use of altered dominants or dominant substitutes.
5. Substitution of the tonic chord, in the final cadence, by a chord with exceptional resolution of the dominant.
6. Substitution of chords by modal borrowings.
7. Free harmonization, independent of the functions of the original chords.

To provide a practical reference for the reharmonization process, let's choose a well-known Brazilian children's song. In the example below, we see this melody harmonized in the simplest way, by applying chords that represent only the three basic functions: tonic, subdominant, and dominant.

Track 59

Track 59 musical notation. The melody is in E major (one sharp). The first system shows a melody starting on E4, moving up stepwise to G4, then down to E4, and finally down to C#4. Chords above the staff are E (measures 1-2), B7/D# (measures 3-4), and E (measures 5-6). The second system continues the melody from C#4 down to B3, then up to D4, E4, and finally down to C#4. Chords above the staff are A (measures 7-8), E (measures 9-10), B (measures 11-12), and B7 (measures 13-14). The piece ends with a double bar line.

Next, we expand the harmonic variety using the remaining chords of the E major scale. Note the insertion of the II-V cadential pair, right in the first measure. The chosen diatonic chords should remain close to the original functions of the theme, and these expansions or substitutions should initially maintain this relationship.

Track 60

Track 60 musical notation. The melody is in E major. The first system shows a melody starting on E4, moving up to G4, then down to E4, and finally down to C#4. Chords above the staff are F#m7 (measure 1), B7 (measures 2-3), E (measures 4-5), C#m7 (measures 6-7), F#m7 (measures 8-9), B7 (measures 10-11), E (measures 12-13), E/D# (measures 14-15), C#m7 (measures 16-17), and E/B (measures 18-19). The second system continues the melody from C#4 down to B3, then up to D4, E4, and finally down to C#4. Chords above the staff are A (measures 20-21), D#ø/A (measures 22-23), G#m (measures 24-25), C#m7 (measures 26-27), F#m7 (measures 28-29), B7 (measures 30-31), and E (measures 32-33). The piece ends with a double bar line.

The application of secondary dominants expands the range of chords used in the harmonic grid that supports this melody. In this case, we move from the diatonic process to the chromatic process, with the appearance of some tensions.

E^{add9} G^{#m7/D#} G^{#ø/D} E7/B^b A^{add9} A A^{#ø} D^{#7(b13)/A}

G^{#m} G^{#ø/D} C^{#7} C^{#7(b13)} F^{#m7} C7 B^{sus9} B¹³ E6

Another highly effective way to substitute chords is through exceptional dominant resolutions. This technique, discussed in the chapter of the same name, involves transforming the last note of the melody into an interval different from the one that note represents in the chord used up to that point. Here are some examples:

Track 63

G^{#m7} G^{#ø/D} C^{#7} E^{#dim} F^{#m7} B^{sus9} B¹³ D⁷⁽⁹⁾

tonic transformed into 9th of a dominant chord

G^{#m7} G^{#ø/D} C^{#7} E^{#dim} F^{#m7} B^{sus9} B¹³ B^{bdim}

tonic transformed into b5 of a diminished chord

G^{#m7} G^{#ø/D} C^{#7} E^{#dim} F^{#m7} B^{sus9} B^{13/A} G⁷⁽¹³⁾

tonic transformed into 13th of a dominant chord

A further step in the reharmonization process is achieved by including some modal borrowing chords, in addition to secondary dominants and exceptional resolutions of the dominant chord. The following passage is not shown in chord symbols so that harmonic analysis can be performed.

Track 64

Track 64 musical score, consisting of three staves of music in G major, 4/4 time. The first staff features a melodic line with eighth and sixteenth notes. The second and third staves provide harmonic accompaniment with chords and bass lines.

Track 65

Track 65 musical score, consisting of three staves of music in G major, 4/4 time. The first staff features a melodic line with eighth and sixteenth notes. The second and third staves provide harmonic accompaniment with chords and bass lines.

In a freer reharmonization, the theme can be treated bitonally: the higher voice in the harmony presents the melody in A major, and the immediately lower voice maintains it in E major. In this case, the harmonic functions become diffuse, and the harmonic progression presents a series of errant chords without a clear function. Note that the main melody, in E major, is in the center of the harmonic progression. It is recommended to sing the main melody, in E major, while the chord sequence is being played. In this way, the effect that this melodic structure represents within the progression will be better understood.

Track 66

The image displays a musical score for Track 66, consisting of four staves of music. The key signature is E major (three sharps: F#, C#, G#). The time signature is common time (C). The music is written in a bitonal style, with the main melody in E major and the harmony in A major. The first staff shows a series of chords and intervals, with some notes in the higher voice (A major) and others in the lower voice (E major). The second staff continues this bitonal approach, with some notes in the lower voice (E major) and others in the higher voice (A major). The third staff shows a similar bitonal structure, with some notes in the higher voice (A major) and others in the lower voice (E major). The fourth staff concludes the piece with a final chord in E major.

With the example above, a series of possibilities opens for the use of chords in a non-tonal approach, which we will see in the third part of this work. In these cases, the structures will no longer be made by superimposed thirds from diatonic scales but from the stacking of fourths, fifths, or seconds. In 20th-century European music, where the chromatic system began to be used more

freely and independently, several experiments were carried out regarding the structuring of chords. Chords by fourths, by fifths, and by seconds are some of the most established examples of this practice.

See, as the last example in this volume, some possibilities for applying the techniques of chord formation by fourths, fifths, and seconds, applied to the last phrase of the same melodic theme.

Track 67

a. Harmonization with quartal chords

b. Harmonization with quintal chords

a. Harmonization with secundal chords

Note:

In reharmonizations made in the same key as the original theme, through secondary dominants or borrowed chords, it is essential to maintain the coherence of the chords in relation to the main melodic line. Every chord applied, which is not located within the diatonic space, must maintain a direct relationship with the notes of the melody to which it is integrated.

Exercise:

- 1) Reharmonize well-known melodies.

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