

# Jazz Harmony

## PARENT SCALES and CHORD SCALES

Horizontal and Vertical Analysis for Composition and Improvisation

by Raphael Van Goubergen



For Jazz,  
Classical  
and  
Pop musicians

CASS & JAZZ  
publications

Jazz Harmony

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by Raphaël Van Goubergen

*For Jazz, Classical and Pop musicians*



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# INTRODUCTION

## FOR JAZZ, CLASSICAL AND POP MUSICIANS

I wrote this book with my students in mind. It is striking that, just as I was as a young musician, they are stuck – and often paralyzed – between two different approaches to music, two imposing and intimidating schools of thought, the “Classical” school and the “Jazz” school, while being themselves just novice candid musicians with mostly no other *hearing* experience than radio-aired (and internet) commercial “Pop” music<sup>1</sup>. They feel like they have to choose a side: Jazz? Classical? Or Pop?

This book proposes a Jazz analysis method that combines both a *vertical* analysis of music – a typical “Jazz” way of thinking, based on modern chord symbols, further developed as the *chord scale* approach – and (only a basic) *horizontal* analysis – a typical “Classical” way of thinking, further developed as the *parent scale* approach.

Modern chord symbols, that developed in the 20<sup>th</sup> century, form the musical notation of Pop and Jazz music nowadays. Probably half of my students – and I guess half of the worldwide students too – have learned to play music based on these modern chord symbols. Modern chord notation (together with modern technology) has definitely contributed a lot to the democratization of the music production, allowing *anyone* to compose and to produce music. But lots of Pop musicians, who know *something* about chords and scales, and even some (less) experienced Jazz musicians, who know *a lot* about chords and scales, seem to have lost a *horizontal* sense of the musical context, hence the “classical” *parent scale* approach.

Classical schools, however – based on my personal experience here in Belgium – are absolutely top in developing reading and playing techniques (to the intention of the classical repertoire, only), but they seem to neglect the harmony knowledge of their (younger) students at first, only to drown them later in a whole set of “rules”, “do’s and don’ts”, based on a rich tradition, surely, but inhibiting their creativity. The result is that only a small top of classical musicians has a true knowledge of harmony, while most of them only have a clue, if any at all, what harmony is all about.

I am myself not, strictly speaking, a “Jazz” musician, nor am I a “Classical” musician; as a performer, I mostly played Rock, Blues and Jazz, and as a teacher, I taught Classical, Jazz and Pop. I probably should refer to myself as an “all-round” musician, meaning that I know “something about a lot”, and sadly enough not “a lot about something”. That’s actually exactly where most 21<sup>st</sup> century young musicians position themselves too, eager to understand *all* musical styles they are confronted with in this global World Wide Web.

As a performer, the knowledge of Jazz Harmony has been the most important contribution to my humble advancement in music, and as a teacher, I’ve consequently always tried to motivate my students to study the Jazz Harmony. Most of the ones who did have all become successful musicians, *classical* musicians too, because Jazz Harmony offers an analysis method that can apply to a large part of the classical repertoire too<sup>2</sup>, even if not to the whole of it.

---

<sup>1</sup> Whenever I use the label “Pop” music in this book, it’s used in its broadest sense of “popular” music, as opposed, first, to “classical” music, but also to “jazz” music. It includes *all* the sub labels of popular music, going from the mid-20<sup>th</sup> century to today.

<sup>2</sup> Provided that one is able to make transcriptions of classical musical notation into modern chord symbols.

---

It is indeed my deepest conviction that *all* musicians, *young classical* musicians too, have a lot to gain in knowing the Jazz Harmony, obviously for composition, arranging and improvisation purposes, but also to understand the music they're playing, facilitating the memory, the technique and the performing. Jazz Harmony offers a faster, more "practical" and "straight to the point" approach to music than Classical Harmony does<sup>1</sup>, hence the "jazz" *chord scale* approach.

## ACKNOWLEDGEMENTS

I have to thank my father **August Van Goubergen** (1924-1987), classical and jazz pianist and teacher, and my uncle **Willy Van Goubergen** (1937-2000), jazz and blues pianist, who were the *Fathers* and instigators of my love for both the classical and the jazz music.

The biggest acknowledgements definitely go to my very first jazz teacher **Pierre Van Dormael** (1952-2008) and to my good friend **Guy Raiff**, both Belgian Jazz guitarists, who were the *Masters* that contributed the most in my way of thinking the (jazz) harmony. I hope that this book is true to their teaching.

The *parent scale* is a concept that I borrowed – and more or less diverted to my own purposes – from **Ron Miller's** book 'Modal Jazz, Composition and Harmony, Volume 1'.

The *chord scale* is a concept that I borrowed from **Barrie Nettles'** and **Richard Graf's** book 'The Chord Scale Theory and Jazz Harmony'.

Obviously, the angles of approach to certain subjects are also similar to other author's approaches. I've listed the books that have been my Sources (page 272) at the very end of this book.

I also would like to express my gratitude to my students who, inevitably, have always been the try-outs of my, of this, method. They greatly contributed to the thinking on which this book is based.

Many, many thanks to my proofreaders – family, friends and colleagues – Bernie, Louis, José, Bart, Bieke, Stuart, Alain, John, Arthur, Michel, and most especially to Andries.

Special thanks also to my long-time friend, fellow musician, teacher and colleague, **Michel Kuijken** who, with his candid questions, triggered in me the intention to write this book.

And last but not least, I'm not sure that this book would have been achieved without the constant encouragements of my wife, **Ingrid Fonteyne**.

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<sup>1</sup> If later, more advanced classical musicians opt for classical composition, they evidently need to learn all about the Classical Harmony and, preferably, about Counterpoint too. The Jazz Harmony will actually lay a solid foundation to that purpose, even if some concepts are seen, and taught, from a different point of view.

## HOW TO UNDERSTAND HARMONY

First, the readers need to know that harmony is not a set of “mandatory rules”, a Jazz harmony book is not a law book. Harmony is just an analysis method – based partly on cultural tradition and mostly on natural acoustical balances – that allows us to understand why, and how, music “sounds” (good, whatever “good” might mean to you). Harmony is a never-ending and humble attempt to describe how we *hear* music, and how we experience it (i.e. how we *feel* it). Not more, but certainly not less. Since it’s all about *hearing*, and about the actual *sensorial* experience, you should play and *sing*<sup>1</sup> the scales, chords and songs (part of songs) proposed in this book to *hear* and *feel* how they sound. Try out the scales and chords in other songs too. Without playing, *singing*, *hearing* and *feeling*, the proposed material will stay abstract and difficult to understand, while it mostly becomes obvious and easy when played.

Very often young composers write their music based only on their musical ear and their candid intuition, and so they should. Analysis, sometimes, follows the composition, and the analyst can surprise the composer with insights the composer was not even aware of while writing.

Of course, learned composers, and improvisers alike – i.e. “instant composers” – are very much aware of what they are writing or playing, because their analytic mind and their hearing are as fast as their writing and playing skills. The improviser needs to understand the composition thoroughly if he wants to be able to improvise over it. But he also mostly gains new insights over the years, insights that enable him to reinvent his improvisations over and over again, provided he keeps on analyzing, practicing, trying and experimenting.

You should always keep an *open mind* to be able to review your “old” insights in music. Never think that you’ve found the definite answer, or “rule”, to harmony. That’s why it’s important that, after reading this book, you read another book, and another, and yet another, by other authors, to learn about their insights. At the end of this book, I list the books that have been my sources for understanding music so far.

And you should also always *keep your ears open*, teaching them how to appreciate sounds that are new to you. New parent scales and chord scales can sometimes sound strange to an already formatted (or styled) ear. You can *like* these new scales, or *dislike* them. But always try to find out *why* you like them or not.

The challenge for me, writing this book, is to open up *your* mind and ears. But to do so, I need first to build up a strict logic on known – but somehow narrow – concepts before I can gradually open up to the possibilities that will arise naturally. That’s why you should read this book up to the very end (without forgetting to read the footnotes). It’s best to read first in the proposed order so as to understand the logic buildup and the relations between the different subjects. You might feel a bit lost in the beginning, with concepts that are new to you. But keep reading! You’ll eventually get used to them.

After having read from top to bottom, this book is also designed as a handbook that you can browse, subject by subject, according to your needs of the moment.

---

<sup>1</sup> I cannot stress enough the importance of *singing* while practicing and exploring. Singing is “active hearing”. It allows us, much more than playing does, to *connect* with our two musically most important senses: *hearing* and *feeling*.

- Play, *sing* and *hear*, the examples.
- Stay candid when composing. Use your *ear* and intuition.
- Analyze, practice, try and experiment.
- Keep an *open mind*, be curious, read other books.
- Keep *open ears*, learn to appreciate new *sounds*.
- Read this book to the end.

Last, but not least, the readers need also to remember that harmony is only one “ingredient” of music. Music is sound, and there are *four* ways you can articulate sound:

1. You can articulate sound in *rhythm*, i.e. in “length over time”. This ingredient is all about beat, accents, subdivision of the beat, measure, phrase, song structure, … and even about *harmonic rhythm*.
2. You can articulate sound in *timbre*, i.e. in *tone color*, or *tone quality*. This ingredient is all about instrument and/or voice timbre, orchestration and arrangement (and, thus also, *harmony*), music production, …
3. You can articulate sound in *intensity*, or *loudness*. This ingredient is all about dynamics and interpretation.
4. You can articulate sound in *pitch*, i.e. in “height”. This ingredient is all about melody and *harmony*.

All four ingredients are, obviously, intertwined in a musical composition. Consequently, a good musician cannot neglect either of these four ingredients. This book is *only* about the fourth ingredient: harmony analyzes the way different *pitched* sounds relate to one another.

Do not neglect the three other musical ingredients: be aware about *rhythm*, *timbre* and *intensity* too.

## CONCEPTS NEEDED

One of the main pitfalls in discussing music is that very often two musicians – particularly when they come from different worlds, Classical, Jazz or Pop – use a same word meaning different things, or they use different words<sup>1</sup> meaning the same thing. It is therefore necessary to set a clear definition of the concepts used in this book before starting to go into details.

## Basic Concepts

### Relative and Absolute Tone Names

Being a Belgian – Dutch, French and (partly) English speaking person – and as I write this book for all three language groups, it's important to agree first on the tone names.

Latin languages – French, Italian, Spanish ... – use the *relative* tone names to designate absolute tones (see further) (i.e. the “fixed Do” system)

Do	Re	Mi	Fa	Sol	La	Si
----	----	----	----	-----	----	----

While Germanic languages – German, Dutch, English ... – use the *absolute* tone names

C	D	E	F	G	A	B <sup>2</sup>
---	---	---	---	---	---	----------------

Absolute tone names (C, D, E ...) designate tones at a fixed frequency (i.e. A = 440 hertz<sup>3</sup>), while relative tone names (Do, Re, Mi ...) *should* designate the *degrees of the Major scale* in singing exercises, *whatever the first absolute tone is* (i.e. the “movable Do” system)<sup>4</sup>.

For that same purpose, i.e. to designate the *degrees of the Major scale*, Jazz analysis simply uses degree numerals, as used in this book<sup>5</sup>.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

The absolute tone names (C, D, E ...) are the standard used throughout the whole book.

Here's a good tip – from personal experience – for all “Latin” readers who are used to the relative tone names (as absolute tones) and who tend to be confused by the lack of habit with the absolute tone names: Do not ever *mention* the absolute tone names. Keep using the relative tone names, as you are used to, *in the mouth* and in your *thinking*. You will quickly find that “*reading C*”, means “*saying or thinking Do*”, in some sort of “instant translation”. Before you know it, you will use the absolute tone names, in reading and writing, without

<sup>1</sup> Having had a linguist education, with Latin and Greek, but also French, Dutch and English, I find that most musical terms are actually very precise and quite logic. It certainly helps to know the origin of these words to be able to remember their exact meaning. I will mostly try to share my insights on the etymology of the words.

<sup>2</sup> In some parts of Europe, mainly in Germany, B = B♭ and H = B.

This “confusion” originated in the early Middle Ages, when the *derivative* tones – i.e. the flat and sharp tones – were first “discovered”. ♭ (the flat symbol – actually a *round* b) was then used to designate the B♭ tone – i.e. the first derivative tone discovered – as opposed to a *square* b designating the natural B tone (that later became ♯, the “natural” symbol). There seems to have been confusion in handwriting between this *square* b (♯) and the German Gothic letter “h” (which happened to be the next letter in the alphabet, after G).

<sup>3</sup> Depending, of course, on the agreed diapason (i.e. the tuning standard).

<sup>4</sup> In most Anglo-Saxon music schools, when using the relative tone names, “Si” – the 7<sup>th</sup> degree – was changed to “Ti” so that every syllable would begin with a different letter (avoiding confusion with “C” at the same time).

<sup>5</sup> See further Scale and Scale Degrees on the next page).

even noticing the difference. Just keep in mind that the Do, Re, Mi ... names are originally meant as a *relative* system.

## Tonal Music and Central Tone

Have you ever wondered how it comes that you can guess the end tone of a song, and sing along with it, even when you hear the song for the very first time? Well, that is the *central tone* of the song.

Whenever music revolves around (only) *one central tone*, the music is called *tonal* music.

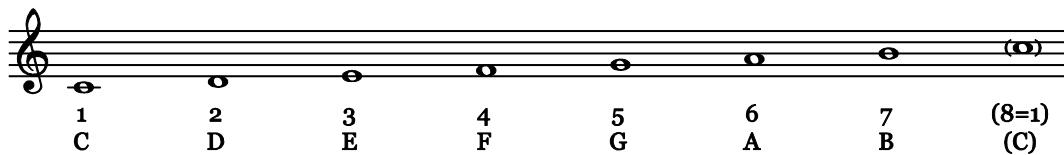
In the Middle Ages, that central tone was called the *finalis*, which means the *ending tone*. Today one usually calls it the *tonic*. In this book, I will mostly use the term *central tone*.

Knowing, understanding, and especially *hearing*, that every song has a *finalis*, is essential to understand *tonal* music. Tonal music is what most people are accustomed to, the music one hears everywhere and every day. A *tonal* song will mostly start, but *always*<sup>1</sup> end with the *finalis*.

## Scale and Scale Degrees

Every tonal song revolves around only one<sup>2</sup> central tone. All the other tones used in the song function as “satellites” around this central tone. These tones are ordered hierarchically – i.e. with, for every tone used, a specific function *in regard to the central tone* – in tonal systems of (mostly) seven tones.

These tonal systems are called *scales*, when ordered in a scaled way, i.e. going up step by step. The scale starts, and ends (*finalis!*), with the central tone. Every tone gets a *degree numeral*. Here’s how the C scale (i.e. the C Major scale – see further) looks like:



## Mode

Scales are sometimes also called *modes*. There is no real practical difference between a *scale* or a *mode* (*mode* means *fashion, way, style, color*). The term *mode* refers to the specific sound of a scale. Most (young) musicians know about, or at least have heard of, *Major* scales and *minor* scales. Actually, these terms – *Major* and *minor* – are *modal* terms: one scale *sounds Major*, the other scale *sounds minor*.

At all times, people have tried to describe those modes with emotional terms like, for example, “Major sounds *happy*” and “minor sounds *sad*”. Those emotional terms, even if they are essentially modal – in a “happy way”, in a “sad way” – are still inadequate. Mostly, because they are too subjective, what sounds happy to one person can sound cold to another person. “Major is *cold*”, “minor is *warm*”, is just another possible way to describe these modes.

<sup>1</sup> In Music, one can never say “never” or “always”. But this simplification is useful for now.

<sup>2</sup> Sometimes, a song can *modulate* – i.e. change to another central tone. For now, let’s keep it to *one* central tone.

## Modality

Also, there are too many possible modes in music to be able to keep track of all of them just by using emotional terms. E.g. medieval Gregorian Music used so-called *church modes* with strange (Greek tribal) names such as Ionian, Dorian, Phrygian, Lydian, Mixolydian and Aeolian. The use of church modes was – only later, around the early 17<sup>th</sup> century – called *modal music* or *modality*, as opposed to ...

## Major-minor Tonality or Functional Music

At a certain point in history, around the Renaissance, two modes – the Major (or Ionian) and minor (or Aeolian) modes – gradually outranked the other church modes<sup>1</sup>. That evolution was due, essentially, to the discovery of *functional* harmony, i.e. the use of *functional chords* as new building stones of music.

Just as the (individual) tones have a specific function in the scale (or mode), the chords (grouped tones) also have their own specific function. The chords were ordered in functional cadences – specific sequences of chords – that, due to the alternation of the chord functions, give music a clear direction towards, or away from, the central tone or/and the central chord.

In order to vary the composition, but also to give it a clear structure, composers started also to use the *modulation* – i.e. *changing to another central tone inside the song* – using specific functional cadences to go to that new central tone. A composition that (e.g.) started in C Major in the first part, could go to G Major in the second part, and then to C minor or Eb Major in the third part, and so on ..., but was supposed to end as it began, in C Major.

Note that, even when music modulates, the first and last central tone is still (mostly) the same. That means that the first ever sounded central tone in the song still lingers on in our musical ear, and that our ear longs to finally go back to that first, and last, central tone.

The use of Major and minor modes, with functional chord cadences, and modulations to new Major and/or minor modes or *keys*, was simply called *tonal music* (as opposed to the *modal music* or *modality* mentioned above) or *Major-minor Tonality*. We'll see that the term *Functional Music* is probably better fit to describe this way of composing.

---

<sup>1</sup> The Major mode is actually the same as the medieval Ionian church mode. The (natural) minor scale is the same as the medieval Aeolian church mode. See [Chord Scales in Major](#) (page 72).

## Key

One also started to use the term *key* to differentiate first the *pitch* of the central tone, and second the *mode* (Major or minor) used. This term *key* means “*with respect to the key signature*”, and refers to written music. See the little boxes on the score below, those are the *key signatures*.

Nothing in the key signature: The *key of C Major* uses seven tones. According to the key signature, none of them are lowered (flats:  $\flat$ ) or raised (sharps:  $\sharp$ ).

C – D – E – F – G – A – B – (C)

3 flats ( $\flat$ ) in the key signature: The *key of C minor* uses seven tones. According to the key signature, three of them are lowered: B, E and A have a flat.

C – D – E $\flat$  – F – G – A $\flat$  – B $\flat$  – (C)

## Present-day Tonal Music

Over the centuries, musicians gradually rediscovered the use of the ancient church modes (or *natural modes*), but also discovered “new” *synthetic modes*, hybrid modes partly Major, partly minor, or just hanging in between, like Blues. Chords also became small tonal systems on their own, generating their own “modes” (or chord scales) inside a bigger tonal system that, mostly, still dominates the song or part of the song (the main key, the original parent scale).

Music gradually became a mix of all these tone materials and tonal systems – parent scales and chord scales – making it increasingly difficult to keep seeing a song as being just tonal Major or minor, or just modal. This is the reason why today we need to redefine these concepts.

## Concepts in this Book

One good way to make musicians with different backgrounds talk about the same concepts is to clarify those concepts into simple and concrete definitions. Concepts as *tonal*, *modal* and *functional* have grown more complex over the centuries and can actually mean different things according to the “style school” (e.g. Classical or Jazz) that uses them.

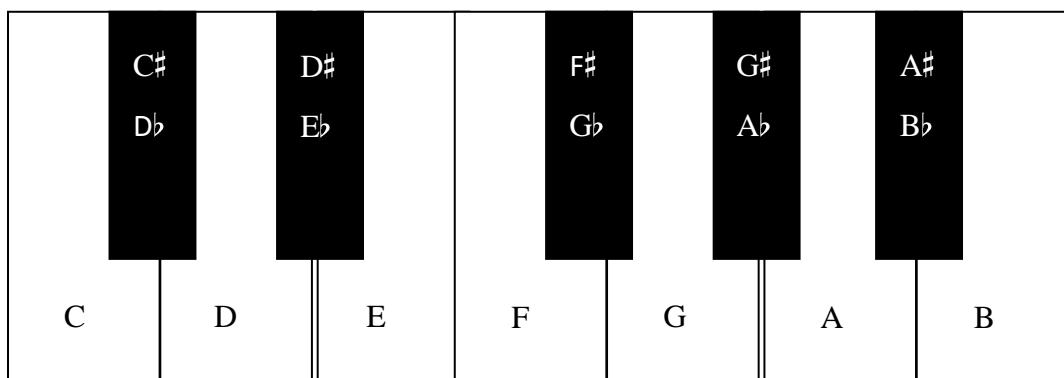
Part of the problem with these concepts – *Tonality*, *Modality* and *Functionality* – is that these terms are often used in opposition to one another, while in fact they permanently overlap. So, let’s redefine all three concepts in a simple, usable, way.

- **Tonality:** music that revolves around only one<sup>1</sup> central *tone*.<sup>2</sup>
- **Modality:** the *color* of the music, Major, or minor, or any other *mode* we’ll learn about in this book.
- **Functionality:** music that is based on cadences using the three *harmonic functions of the chords*, Tonic, Subdominant and Dominant.<sup>3</sup>

Though some of these definitions might sound incomplete to some readers, they are all set to assure the most practical and methodical approach to harmony. Keep in mind that these definitions are not universal. When reading another book or method, by another author, you might find (slightly) different meanings to these concepts.

## 12-TONE TONALITY

Modern instruments have 12 different tones in one octave (i.e. without the doubling of the first tone). Think of a piano: 7 different white keys + 5 different black keys.



The “full” tonality is a 12-Tone tonal system in which all of these 12 tones have a function<sup>4</sup>, but in which only one – let’s take the first one C – is the central tone; a “super-scale” if you want.

<sup>1</sup> Not considering possible modulations.

<sup>2</sup> As opposed to *a-tonal*: *without* central tone.

<sup>3</sup> See [Harmonic Functions of the Chords](#) (page 56).

<sup>4</sup> Important: This is about the *functions of the degrees of the tonality*, i.e. the function of each *tone* in relation to the central tone. *Functional* music, as explained above, is about the *harmonic functions of the chords*.

A *key*, Major or minor, is also a tonal system with only one central tone, but in which only 7 tones have a function: C Major is a key; C minor is a different key.

Since these two *keys* are different, the traditional classical numeral analysis of the scale degrees follows different standards.

A musical staff with two measures. The first measure shows the notes C, D, E, F, G, A, B, C (I) in common time. The second measure shows the notes c, d, e♭, f, g, a♭, b♭, c (i) in common time. The key signature changes from no sharps or flats to one sharp (F#) and one flat (B♭).

Both keys though, sharing the same central tone C, are part of the *same “full” 12-tone tonality of C*. According to that concept, the Jazz musician numbers the scale degrees as follows.

**C Major**

**C minor (natural)**

C Major notes: C, D, E, F, G, A, B, C  
C minor notes: C, D, Eb, F, G, Ab, Bb, C  
1 2 3 4 5 6 7 (1)      1 2 b3 4 5 b6 7 (1)

The scale degrees of C minor are numbered *in reference to* C Major, the Major scale being the absolute reference<sup>1</sup> for numbering all twelve tones of the tonality. The 3<sup>rd</sup>, 6<sup>th</sup> and 7<sup>th</sup> degrees are lowered to ♭3, ♭6 and ♭7 – a *modal* way of thinking, comparing the Major *mode* to the minor *mode*, C minor being merely a variant *mode* of the C tonality.

Using that numbering method, all 12 tones of the C-tonality can be numbered as follows:

12-tone tonality of C

C D<sub>b</sub> D E<sub>b</sub> E F F<sup>#</sup> G A<sub>b</sub> A B<sub>b</sub> B (C)  
1 2 2 3 3 4 4 5 6 6 7 7 (1)

This tonality scale, with its specific numbering, sets the standard for (most of) the parent scales and chord scales we will discover in this book. Both Major and minor scales are included in it, as will be the case for all (most) scales.

$\flat 2$ ,  $\flat 3$ ,  $\sharp 4$ ,  $\flat 6$  and  $\flat 7$  are all functional modal<sup>2</sup> scale degrees. They are all part of the tonality.

Note that this tonality scale is not written like the classical (ascending) chromatic scale.

A musical staff with a treble clef and a key signature of one sharp (F#). The notes are: C, C#, D, D#, E, F, F#, G, G#, A, A#, B, and C'. Below the staff, the notes are labeled with their corresponding letter names and numbers: C, C#, D, D#, E, F, F#, G, G#, A, A#, B, and (C). The number 1 is placed under the first note of each pair.

The chromatic scale (of C) also includes all 12 tones in the octave: the diatonic tones of C Major, plus the chromatic tones that are in between them<sup>3</sup>. Going up, the diatonic tones are

<sup>1</sup> This is of course a cultural convention. At some point in history (the early middle ages) the natural minor scale was probably the reference scale, as still seems reflected in the absolute tone names: A – B – C – D – E – F – G (= A natural minor scale).

<sup>2</sup> See further Tonal Degrees and Modal Degrees (page 22).

<sup>3</sup> **Diatonic** (from Greek: “throughout the tone” i.e. “throughout the tonal system”) means “part of the scale”; **Chromatic** (from Greek: “coloring”, extra tones that can “color” the music) means “NOT part of the scale”.

raised (with sharps  $\sharp$ ) – following the upward movement of the scale – to become chromatic tones that *approach* the following diatonic tones.

In this ascending chromatic scale,  $\sharp 1$ ,  $\sharp 2$ ,  $\sharp 4$ ,  $\sharp 5$  and  $\sharp 6$  are not *functional* scale degrees, but merely chromatic tones *approaching* the diatonic scale degrees (of C Major) 2, 3, 5, 6 and 7 respectively. They are, as such, not part of the tonality (or, actually, of the *key* of C Major).

Going down the chromatic scale, the diatonic tones are lowered (with flats  $\flat$ ) – following the downward movement of the scale – to become chromatic tones that *approach* the following diatonic tones.

C chromatic (descending)

(C) (1) B B<sub>flat</sub> A A<sub>flat</sub> G G<sub>flat</sub> F E E<sub>flat</sub> D D<sub>flat</sub> C 1

In this descending chromatic scale,  $\flat 7$ ,  $\flat 6$ ,  $\flat 5$ ,  $\flat 3$  and  $\flat 2$  only *appear* to be the same functional modal scale degrees as in the tonality scale above (except for  $\flat 5$ , instead of  $\sharp 4$ ), but the *reasoning* behind this chromatic construction, with chromatic *approach tones*, is not, strictly speaking, a *modal* reasoning.

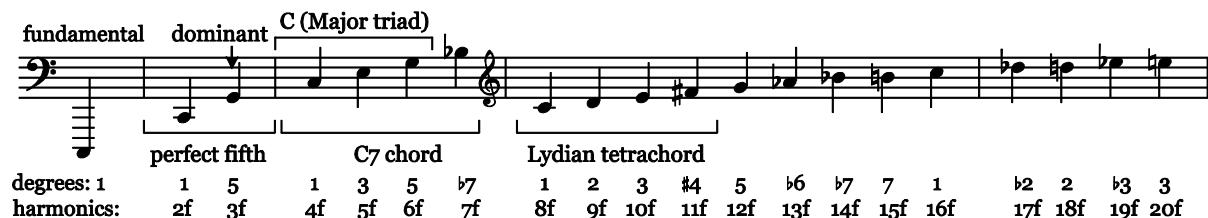
Whether a particular scale degree is a *functional modal degree* or merely a *chromatic approach tone* is often subject to discussion<sup>1</sup>, mostly with musicians who are not familiar with existing parent scales. But also, because it can depend on the musical context and the musical phrasing that can – according to one's perspective – be interpreted in different ways.

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<sup>1</sup> And the subject of this book.

## HARMONIC SERIES

Before analyzing the 12-tone tonality in depth, it's useful to get familiar with the harmonic series of a “fundamental” tone. Playing a (fundamental) tone (always) generates a series of harmonics, which are natural sound waves that vibrate at frequencies that are all integer multiples of the fundamental frequency ( $f$ ). The 1<sup>st</sup> harmonic is  $2f$  ( $2 \times f$ ), the 2<sup>nd</sup> harmonic is  $3f$ , and so on ... up to the 19<sup>th</sup> harmonic =  $20f$ .



Going further in the series, i.e. higher than  $20f$ , the degrees follow each other in steps that are smaller than semitones.

### The Fundamental

The very first tone (C) is the fundamental.

It repeats itself in the series every time it doubles its frequency ( $2f$ ,  $4f$ ,  $8f$ ,  $16f$ , and so on).

→ *The fundamental tone is the central tone of the series.*

It will obviously become the central tone of any tonal system based on it.

### The Dominant

The very first harmonic in the series that is different from the fundamental – i.e.  $3f$  (G) – is one perfect fifth<sup>1</sup> higher than the fundamental (not taking into account octave jumps).

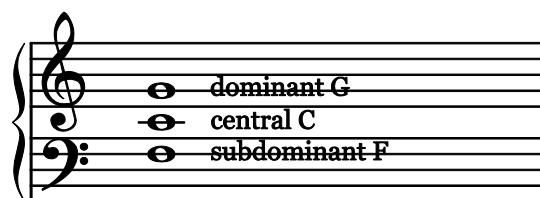
It repeats itself every time it doubles its frequency ( $3f$ ,  $6f$ ,  $12f$  ...).

→ *The perfect fifth is the dominant harmonic in the series (other than the fundamental tone).*

This fact is the foundation of the whole “Western” musical system as we know it, a system that “balances” the central tone (C) between

- its dominant (G), one perfect fifth higher
- its subdominant (F), one perfect fifth lower<sup>2</sup>

This is still reflected in written music, in the grand staff with 11 lines, the 11<sup>th</sup> line being the central ledger line in between staves on which C is written. The treble-clef is a stylized G, and the bass-clef is a stylized F.



<sup>1</sup> See Intervals in the Major scale (page 30).

<sup>2</sup> **Important note:** Where Central Tone C is the fundamental to its Dominant G, the Subdominant F is the fundamental to its “Dominant” C. Note also that F is *not* part of the harmonic series, until  $21f$ . These facts are, as we'll see throughout this whole book, of crucial importance to understand how harmony works.

## The Major Triad

The next new tone in the series, different from fundamental and dominant – i.e.  $5f$  (E) – is one Major third<sup>1</sup> higher than the fundamental (not taking into account octave jumps).

Together with the fundamental and the dominant, this tone forms the **Major triad** (or Major 3-note chord: C – E – G). This explains how the Major mode became a reference, *the reference in music*, from the very first moment musicians started to use chords.

Indeed, when you consider a musical system that balances its central tone (C) between the dominant (G) and the subdominant (F), and you complete each of these tones with its own Major triad, each of the tones being fundamental of its own harmonic series, these are the chords you get<sup>2</sup>:

- G – B – D      the dominant chord      build on the 5<sup>th</sup> degree of the scale, or V
- C – E – G      the central chord      build on the 1<sup>st</sup> degree of the scale, or I
- F – A – C      the subdominant chord      build on the 4<sup>th</sup> degree of the scale, or IV

A musical staff in G clef shows three groups of notes. The first group, labeled "Major triad on Dominant G", consists of G, B, and D. The second group, labeled "Major triad on Central Tone C", consists of C, E, and G. The third group, labeled "Major triad on SubDominant F", consists of F, A, and C. The notes are positioned on the staff to show their relative pitch and intervallic relationships.

And these three Major chords also include all the tones of the C Major scale:

V	Dominant	<b>G</b>	Major triad:		D			G		B	
I	Central Tone	<b>C</b>	Major triad:	C		E		G			
IV	Subdominant	<b>F</b>	Major triad:				F		A		C
				↓	↓	↓	↓	↓	↓	↓	↓
	<b>C Major scale</b>			C	D	E	F	G	A	B	C

## The Dominant Seventh Chord

The following new tone, different from fundamental, dominant and Major third – i.e.  $7f$  ( $B\flat$ ) – is one minor seventh higher than the fundamental (not taking into account octave jumps).

Together with the fundamental, the dominant and the Major third, this tone forms the **Dominant Seventh Chord** (a 4-note chord C – E – G –  $B\flat \rightarrow C7$  chord<sup>3</sup>).

The implications of that fact, the “dominance” of the Dominant Seventh Chord in functional harmony<sup>4</sup>, will become obvious when reading further.

<sup>1</sup> See [Intervals in the Major scale](#) (page 30).

<sup>2</sup> These chords form the complete IV-V-I cadence. See [Major Functional Cadences](#) (page 60).

<sup>3</sup> The  $b7$  degree ( $B\flat$ ) is the “7<sup>th</sup> by default” in chord symbols. Whenever 7 is used as symbol – as opposed to Maj7 – it always indicates the  $b7$  degree, or minor 7<sup>th</sup>. See [Chord Symbols](#) (page 49).

<sup>4</sup> And, worth mentioning also, the “modal” Central Chord C7 (or I7) in Blues. See [Blues Chords and Blues Scale](#) (page 93).

## The Lydian Tetrachord

The following new tones – i.e. 9f and 11f (D and F♯) – are a Major second and an augmented fourth higher than the fundamental (not taking into account octave jumps). Together with the fundamental and the Major third, these tones form **the Lydian Tetrachord**, (a group of 4 “scale-like” consecutive tones<sup>1</sup> C – D – E – F♯). A fact that led to a scale theory called the Lydian Concept.

## The Lydian Concept

As said before, “Western” music was founded on “balancing” the central tone between its dominant (G – one perfect fifth higher) and its subdominant (F – one perfect fifth lower).

Here’s a little experiment you can do. Sing the central tone (C) in alternation with its dominant (G). The dominant will always sound (actually, *feel*) like a preparation to the central tone, like the note that comes just before the finalis.

When singing the central tone (C) in alternation with its subdominant (F), the subdominant gradually sounds (*feels*) like the finalis note, now becoming itself the central tone.

Indeed, F (the subdominant) being the tone for which C (the central tone) itself is the dominant, it kind of sounds like a modulation to F. Therefore, the subdominant (F) “destabilizes” the tonality of the central tone (C), because it “wants to become central tone instead of the central tone”.

Because of that, and according to the presence of the Lydian Tetrachord in the harmonic series – including F♯ (the augmented fourth) instead of F (the “destabilizing” subdominant, or perfect fourth) – there has been an ongoing discussion, since centuries<sup>2</sup>, between (Classical as well as Jazz) musicians. Some musicians advocate that the raised 4<sup>th</sup> degree (#4) should be the “natural” fourth in the reference scale, instead of the unstable 4<sup>th</sup> degree (4 being absent in the harmonic series, or higher than 20f). The C reference scale would then be the *Lydian scale*<sup>3</sup>.

When expressed in the circle of fifths<sup>4</sup>, this scale also starts with the Central Tone (C) instead of the Subdominant (F).

Circle of fifths:	<b>C – G – D – A – E – B – F♯</b>
instead of	<b>F – C – G – D – A – E – B</b>

This concept is called the Lydian Concept.

<sup>1</sup> Tetrachord: from Greek – *tetra* = four; *chord* = string – “a string of four”.

<sup>2</sup> Leonhard Euler, a Swiss Mathematician, brought this fact to the attention in his book on Music Theory “Tentamen Novae Theoriae Musicae” in 1739 AD.

<sup>3</sup> See Chord Scales in Major (page 72).

<sup>4</sup> See Circle of Fifths (page 34).

## The Lydian<sup>b7</sup> scale

When completing the scale, starting with the Lydian Tetrachord 1 – 2 – 3 – #4 (C – D – E – F# – ...) some musicians, due to the early presence of B♭ (7f) in the harmonic series, choose B♭ (... G – A – B♭ – C) as “natural” seventh instead of the culturally common B that appears only later in the harmonic series (15f). The resulting scale is the *Lydian<sup>b7</sup>* scale, also called the *Acoustic* scale, or the *Overtone*<sup>1</sup> scale, considered the most “natural” scale<sup>2</sup>, i.e. following the natural sound of the harmonic series.

**C Lydian  $\flat$ 7**

C	D	E	F#	G	A	B $\flat$	C
1	2	3	#4	5	6	$\flat$ 7	(1)

<sup>1</sup> *Overtone* is a synonym for *Harmonic* (in the harmonic series).

<sup>2</sup> In French, this Lydian<sup>b7</sup> scale is often called the *Gamme Naturelle*. Not so in English, because it might then be confused with the *Natural minor scale* (called *gamme mineure antique* in French).

## TONAL DEGREES AND MODAL DEGREES

### Tonal Degrees

In the tonality – whatever the central tone is – **1, 4 and 5** are the **tonal**, or *tone generating, degrees*. That means that they are, in principle, fixed, i.e. not to be lowered nor raised.

Lowering or raising the tonal degrees tends to disrupt the stability of the tonality, and might induce a modulation, i.e. a shift to a new central tone, in our ears.

tonal degrees 1, 4 and 5

A musical staff in G major (one sharp) with a common time signature. It shows the notes C, F, F<sup>#</sup> (labeled 4), G, and (C) (labeled 1). The notes are separated by quarter note rests.

Remember what we've just learned about the Lydian Concept. Some musicians hear #4 as a more “natural” degree than 4. This role of #4 contradicts somehow 4 as a *fixed* tonal degree. However, mainly because of the way intervals<sup>1</sup> function, it is handy to keep considering 4 as a tonal (though not necessarily fixed) degree.

### Modal Degrees

In the Major scale – whatever the central tone is – **2, 3, 6 and 7** are the **modal degrees**. That means that they can be lowered (and usually not raised – see further for exceptions). By lowering those degrees, we are able to create new *modes* (new colors, new scales) – hence the adjective *modal* degrees – without destabilizing the tonality.

modal degrees 2, 3, 6 and 7

A musical staff in G major (one sharp) with a common time signature. It shows the notes (D<sup>b</sup>) (labeled b2), D, (E<sup>b</sup>) (labeled b3), E, (A<sup>b</sup>) (labeled b6), A, (B<sup>b</sup>) (labeled b7), and B. The notes are separated by quarter note rests.

E.g. by lowering 3, 6 and 7 of the Major scale, one becomes the (natural) minor scale, or just another *mode* of the same tonality (of C in the example above).

The altered degrees – b2, b3, b6 and b7 – are of course also modal degrees that can be raised again. Indeed, by raising b3, b6 and b7 of the minor scale, one becomes the Major scale, or just another *mode* of the tonality (of C in the example above).

### Exceptions

- The 2<sup>nd</sup> degree can sometimes be raised to #2. It can even “explode” into two new “2<sup>nd</sup>” degrees: b2 and #2, creating an octotonic<sup>2</sup> scale (8-tone scale).
- The 7<sup>th</sup> degree can sometimes be lowered to b7. Just the same as the 2<sup>nd</sup> degree, the b7 (7<sup>th</sup> degree “by default” – see [The Dominant Seventh Chord](#) above on page 19) can also explode into two new “7<sup>th</sup>” degrees: b7 and 7, creating an octotonic scale.
- The degrees #4 and b5 (and the less common degrees #5 and b4) are (arguably) modal degrees, and (certainly) not tonal degrees.

<sup>1</sup> See [Intervals in the Major scale](#) (page 30).

<sup>2</sup> An *octotonic* scale is a scale with 8 functional degrees, as opposed to the usual *heptatonic* scale, a scale with 7 functional degrees.

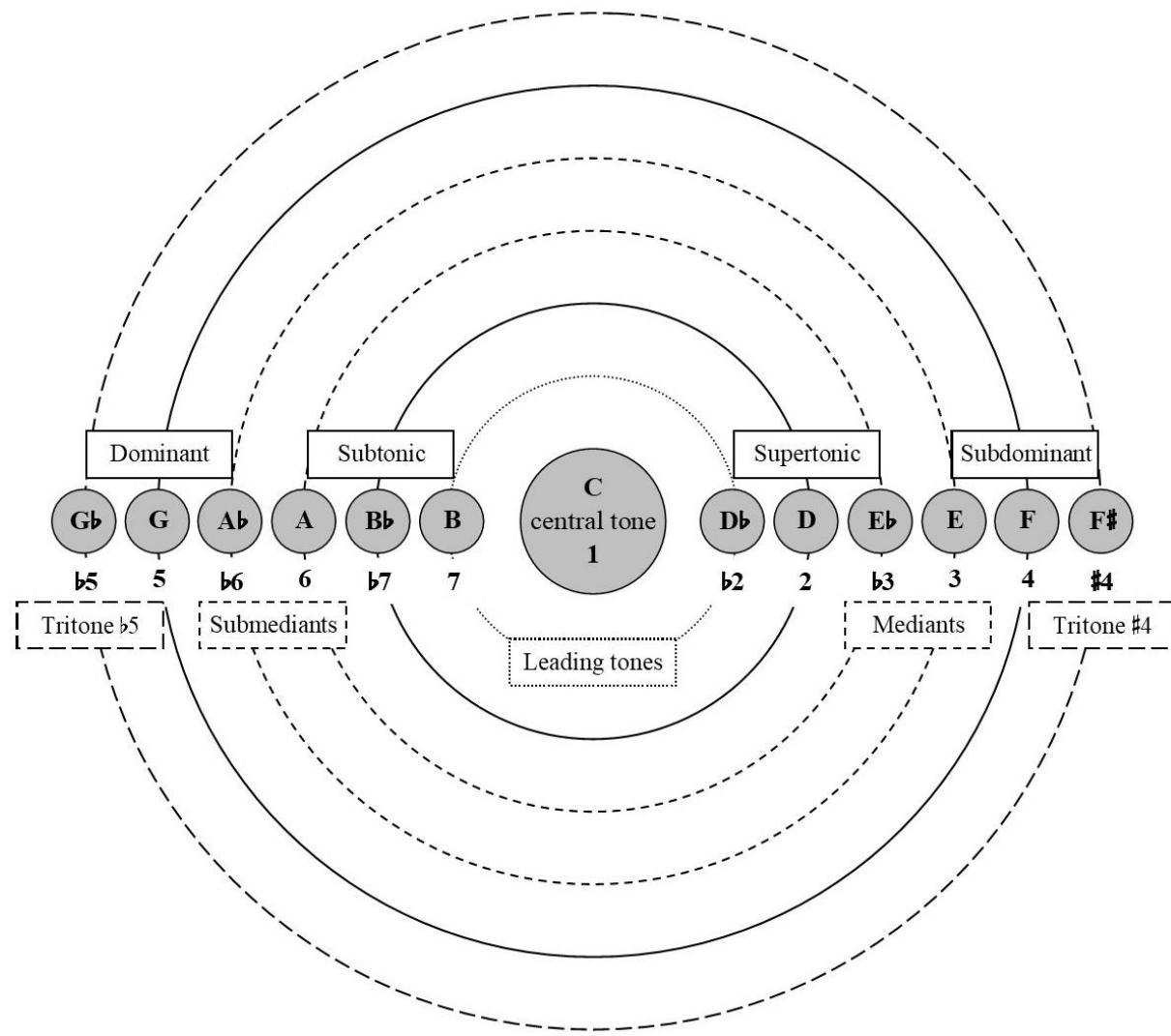


## FUNCTIONS OF THE 12 TONES IN THE TONALITY

In the graphic below, looking like a solar system, you can see how the tonality – with its modal and tonal degrees, all 12 tones – functions (i.e. similarly to a solar system). The “orbit” circles are separated by semitones.

### Tonal degree 1

C is the **central tone** and is the “sun” of the solar system, usually called the **Tonic**.



### Modal degrees 7 and b2

B and D♭ are **leading tones**, i.e. they lead to the central tone, because they are very close to the “sun”, at an interval of only one semitone below or above the central tone. They have a strong melodic function towards the central tone (*con-centric* function), being strongly attracted by the “sun”. They are strongly dissonant with the central tone and demand, in principle, a quick resolution to the central tone. There is however a small difference between 7 and b2: leading upwards (7) always sounds a lot easier and mostly stronger (see also 12-Tone Tonality above, chromatic approaches on page 15), than leading downwards (b2).

## Modal degrees $\flat 7$ and 2

$B\flat$  and D are **subtonic** and **supertonic** respectively. They are quite close to the “sun”, one whole step away from the central tone. They have a mild melodic function towards the central tone (*con-centric* function), being mildly attracted by the “sun”. They are only mildly dissonant with the central tone which allows them to sound together with the central tone without (immediate) resolution. In the (old) classical tradition though, they demand to be resolved to the central tone.

## Modal degrees $\flat 6$ , 6, $\flat 3$ and 3

$A\flat$ , A,  $E\flat$  and E are **submediants** ( $\flat 6$  and 6) and **mediants** ( $\flat 3$  and 3). They are one third<sup>1</sup> away from the central tone – a minor third for A and  $E\flat$ , a Major third for  $A\flat$  and E. They are warmly consonant with the central tone, which gives them a status as preferred degrees in chord building *with* the central tone.

6 and  $\flat 6$  are also mediant to – one third above – the subdominant (4); and  $\flat 3$  and 3 are also submediant to – one third below – the dominant (5) (secondary function). This gives them a strong stability, being in the middle of the central tone and the dominant, or in the middle of the central tone and the subdominant, hence the term mediant (= *in the middle of*). They are therefore also preferred degrees in chord building with the subdominant ( $\flat 6$  and 6) and with the dominant ( $\flat 3$  and 3).

Moreover, 6 and  $\flat 3$  are also mildly attracted by the dominant and the subdominant respectively;  $\flat 6$  and 3 are strongly attracted by, leading to, the dominant and the subdominant respectively (secondary function)<sup>2</sup>.

## Tonal degrees 5 and 4

G and F are **dominant** and **subdominant** respectively. They are one perfect fourth away from the central tone<sup>3</sup>. They both sound in open consonance (almost in unison<sup>4</sup>) with the central tone. They both have strong harmonic functions, because G is the fifth (2<sup>nd</sup> harmonic or 3f) of C, and C is the fifth (2<sup>nd</sup> harmonic or 3f) of F in the harmonic series. But they function in opposite ways:

- The dominant has a very strong harmonic function towards the central tone (*con-centric* function). Being the fifth of the central tone, the dominant always leads back, in its own very strong “harmonic” way, to the central tone.
- The subdominant functions differently. It has a strong harmonic function *away* from the central tone (*ex-centric* function), because here, it’s the central tone that is the fifth of the subdominant. The roles are reversed: the subdominant (4) tends to sound as the central tone itself, while the central tone (1) tends to sound as the dominant. That makes the

<sup>1</sup> See Intervals in the Major scale (page 30).

<sup>2</sup> This fact explains why the 6<sup>th</sup> (or  $\flat 6$ <sup>th</sup>) degree is called “susdominante” in French and “bovendominant” in Dutch, both meaning “above the dominant”, which actually names them in respect to their secondary function leading towards the dominant.

<sup>3</sup> Actually, according to the harmonic series and the foundation of our musical system, they are one *perfect fifth* away from the central tone. Indeed, when inverted – i.e. when you place G above, instead of below like here, the central tone C – the perfect fourth becomes a perfect fifth. See Inversion of Intervals (page 31).

<sup>4</sup> A *unison* is when you play twice (or more) the same tone (octave jumps not taken into account).

subdominant a highly unstable degree<sup>1</sup> (destabilizing the tonality of C). This explains also why some musicians prefer #4 to 4 as a more stable degree (see [The Lydian Concept](#) above on page 20).

## Degrees b5 and #4

G♭ and F♯ are *enharmonic* tones, i.e. they sound the same (*enharmonic* means *in harmony*), though they have different names. These degrees are a *tritone*, i.e. *three whole tones*, away from the central tone. They have a special, ambiguous role. They seem to escape to the attraction of the central tone, being “out” of the system, beyond the dominant and the subdominant. When played together with the central tone, they create an undefined, ambiguous, unclear sound: mostly unstable, and even dissonant, in tonal music (but rather stable in a-tonal music). They mostly function as leading tones towards the dominant (F♯ to G) or the subdominant (G♭ to F) (secondary function), *away* thus from the central tone (*ex-centric* function), creating a shift to a new central tone (G or F respectively). As such, they are highly unstable.

Remember that tonal degrees (1, 4, and 5) are, in principle, not to be lowered nor raised. But don't forget the role of #4 in the Lydian Concept either.

## Secondary functions

Any degree can have a function towards, or away from, any other degree different from the central tone. This is called a secondary function. This creates a rich and complex network of multiple musical functions interacting with each other.

### **Important Note:**

In this book, I will mostly use the tonality of C for all given examples. C Major (Major = reference scale), having no flats nor sharps, greatly facilitates the translation of tones into numbered degrees, lowered or raised.

But you definitely should practice this method in all other tonalities as well, e.g.:

The image shows three musical staves side-by-side, each with a key signature of one sharp (F♯). The first staff is labeled "E Major" and lists notes E, F♯, G♯, A, B, C♯, D♯, and E, corresponding to degrees 1 through 7 and back to 1. The second staff is labeled "E minor (natural)" and lists notes E, F♯, G, A, B, C, D, and E, corresponding to degrees 1 through 7 and back to 1. The third staff is labeled "12-tone tonality of E" and lists notes E, F, F♯, G, G♯, A, A♯, B, C, C♯, D, D♯, and E, corresponding to degrees 1 through 12 and back to 1. Each staff has a treble clef and a common time signature.

<sup>1</sup> We'll see how the 4<sup>th</sup> degree – the subdominant – destabilizes the functions of chords. See [Harmonic Functions of the Chords](#) (page 56).

## MODALITY

Modality, in this book, just expresses the possibility to alter – lower or raise – certain chosen degrees (modal degrees mostly) of the original *parent scale* (i.e. the main key in which a song is written, e.g. C Major), *without* leaving the *tonality*, i.e. without changing the central tone. Doing so results in *modal changes*, creating new parent scales (e.g. C minor) with its derived new chords and new chord scales.

## PARENT SCALE AND CHORD SCALE

A **parent scale** is a scale that *generates* the chords (and chord scales) of a song, hence the name *parent scale*.

When writing a song, the composer decides in what key (i.e. in what *pitch* – or tone height – and *mode*) he wants the song to be, e.g. C Major. C Major is then the *parent scale* to the chords and chord scales that will be used<sup>1</sup>. But a composer rarely sticks to only that one key. The song will probably be enriched with both

*modal changes*: i.e. still in the same tonality of C, but in *another mode* of C  
not C Major but e.g. C minor. C minor will then become the new parent scale.

*tonal changes*: i.e. in another tonality, with *another central tone*.  
not C Major or C minor, but e.g. F Major or F minor, becoming the new parent scale.

Thinking “parent scale” is thinking every event, i.e. every tone played, of the full musical score in reference to the central tone of the tonality – or, occasionally, in reference to the new central tone if there’s been a tonal change (or modulation). This is a (mostly) classical way of thinking, called *horizontal analysis*, except that classical analysis tends to see modulations everywhere, whereas most *changes* usually are only *modal changes* or merely *tonal changes*.<sup>2</sup>

A **chord scale** is a scale that includes a *chord* with its *tensions* (and/or *avoids*), on which the melody of a song is based.

When playing a chord, e.g. C7 – C as dominant seventh chord – you play 4 chord tones. There are other tones lying in between those chord tones. Filling up the gaps between the chord tones with carefully selected other tones – i.e. taking the musical context, the actual parent scale, into account – results in a chord scale. That chord scale provides us with information on *how* all the tones of the scale relate to the tonic (or *root*) of the *chord*.

Thinking “chord scale” is thinking every event, i.e. every tone played, that happens on (or “above”) a particular chord – i.e. from the very first hit of that chord until one leaves the chord – in reference to the root (central tone) of that particular chord. This is a (mostly) Jazz way of thinking, or *vertical analysis*.

Chord scales are also often referred to as modes. There’s a slight conceptual difference though: A **mode** is a **color** you would apply to the **parent scale**, while a **chord scale** applies **only to the chord**. Of course, when a chord is seen as an *independent tonal system* – a

---

<sup>1</sup> The parent scale, as explained so far, is very often referred to as the *home key*. That concept of home key, though, is too narrow (or too broad, depending on how you look at it) to allow us to list all the possible parent scales (*not home keys*) that can be used in a song.

The home key, in this book, will mostly be referred to as the *original key* of a song.

<sup>2</sup> I’ll explain the subtle difference between a *modulation* and a *tonal change* in the part on Tonal Changes (page 99).

tonality on its own – the *chord scale is just a mode* (just a “way” of playing, just another color of the chord).

*Readers that are not familiar with chords and chord symbols should settle for this definition of the chord scale for now. They can go immediately to the next part and skip the next exposition altogether. They'll see how chord scales will be introduced later.*

Classical musicians, and even more so, pop musicians – who actually, unlike classical musicians, use chord symbols in their daily practice – tend to differentiate chords by their *voicing* (i.e. how the tones are spread over the different “voices”) and/or by their *density* (i.e. the number of different tones used to build a chord). Whereas Jazz musicians – as classical baroque musicians used to – differentiate chords by their *function*. The chord scale is just another way – next to the chord symbol – of giving information about the *function* of a chord.

E.g.: In an F Major context, a C7 chord – *function* of the chord: dominant seventh chord of the tonality – is played. Depending on the (pop) composer’s taste and aesthetic feeling, given his choice of voicing and/or density, you will find chord symbols like this:

“Correct” possible symbols : C7 – C9 – C13 – C7sus4 – C9sus4 – etc.

“Incorrect”<sup>1</sup> possible symbols : C – C2 – Csus2 – Cadd2 – Cadd9 – C6 – Csus4 – C11 – etc.

**C7** ————— **C7sus4** —————

To the Jazz musician, and improviser, all these chord symbols mean (more or less, given the F Major context) the same thing: this is a C7 (or C7sus4) [Mixolydian]<sup>2</sup> dominant chord, mixolydian being the chord scale of the chord, and [Mixolydian] meaning:

7-chord (= dominant seventh chord) – with available tensions 9 and 13  
– and avoid tone 11 (or sus4)

You can actually add and/or subtract degrees to any chord, i.e. changing its density; and voice the chord in any way you like, i.e. changing its voicing; following your own sense of aesthetics as composer, arranger or improviser, without altering the *function* of the chord as long as you respect the context. So, there is no *functional* difference between all these chord symbols (except a subtle one between C7 and C7sus4).

One should always keep this methodical rule in mind: If one wants to give information about the voicing and/or density of the chord, the best and only complete way do so is using traditional music writing, with staves, clefs and notes. Using the “correct” symbols with tensions (see above) *can* be an option to inform about the density, or the chord scale, but will never give the full information about the voicing. Chord symbols should always give information about the *function* of the chord, and, preferably, *about the function only*.

<sup>1</sup> “Incorrect” here meaning “unclear”, not giving correct and full information about the *function* of the chord.

<sup>2</sup> In this book, the chord scales will always be written between brackets, mostly abbreviated like this – [Mixo] – to avoid confusion with the parent scales. These brackets symbolize the temporality of the chord scale, and its link to the root of the chord: “This chord scale is used only on [“this particular chord”]. Both the chord and the chord scale share the same root (i.e. the same 1<sup>st</sup> degree)”. In opposition to the parent scale that can be used over different subsequent chords.

## BASIC KNOWLEDGE

Mastering the basics – all Major scales to begin with – is indispensable if you want to understand the analysis of tonal Music. This part's aim is to freshen up your basic knowledge and, maybe, to add information you might not have known about before.

The “classical” scales, Major and minor, keep being academic references in 21<sup>st</sup> century Music, outranking other modes as parent scales – except for modal music – generating chords and cadences to sustain songs and melodies.

The Major scale is the absolute reference, setting the standard, for the numbering of the tonality degrees and mode (or scale) degrees. Remember the numbering of the tonality degrees: **1 – b2 – 2 – b3 – 3 – 4 – #4 – 5 – b6 – 6 – b7 – 7 – (8=1)**

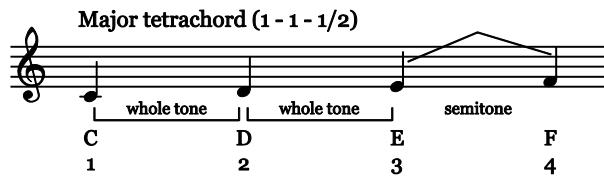
The numbers in bold, i.e. the numbers without flats or sharps, form the Major scale.

In analyzing chords, we'll also use this numbering – i.e. in reference to the Major scale starting on the root of the chord – to indicate the intervals that make up the chord. We'll learn about intervals and chords in this part too.

## The Major Scale

The Major scale is built with two consecutive Major tetrachords – i.e. two groups of 4 consecutive tones each (*tetra* = four, *chord* = string: “string of four”) – separated from one another by one whole tone.

The intervals between the four tones of a Major tetrachord are:



TETRACHORDS CHART <sup>1</sup>			
Tetrachord name	Construction 1 = Whole Tone ½ = semitone	Degree numerals	Alternate names
Major	1 – 1 – ½	1 – 2 – 3 – 4	Ionian

C Major scale

Major tetrachord

C      D      E      F      G      A      B      C  
1      2      3      4      5      6      7      (1)

whole tone

Major tetrachord

With tonal degrees 1, 4, and 5; and modal degrees 2, 3, 6 and 7

<sup>1</sup> The use of tetrachords for building, analyzing and playing scales is a very practical approach to scales. It allows us to narrow down the immense variety of scales we will learn about to just a few tetrachords, remembering the combination of tetrachords for each scale. Therefore, this Tetrachords Chart will accompany us throughout the book, being progressively completed as we learn new tetrachords.

Functions of the degrees:

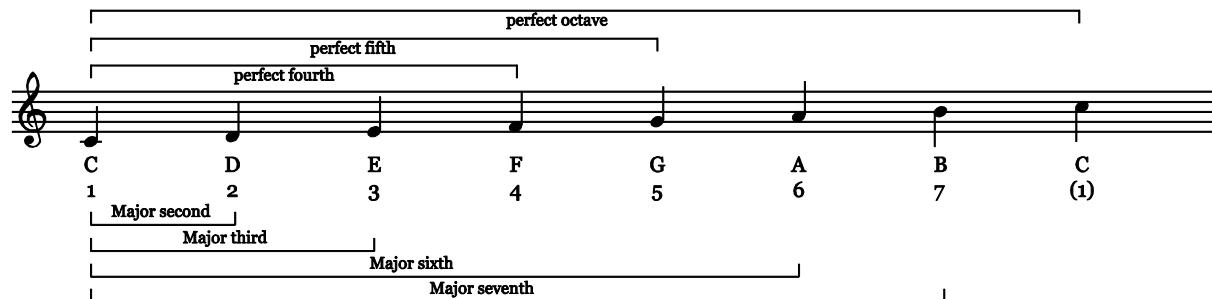
- 1 tonic (central tone)
- 2 supertonic
- 3 mediant
- 4 subdominant
- 5 dominant
- 6 submediant
- 7 leading tone
- 8 tonic

The Major scale (mode) borrows its name, *Major*, from the Major 3<sup>rd</sup> being used in the scale.

## INTERVALS IN THE MAJOR SCALE

All intervals, starting from the tonic (1) and going to the other degrees, are either *Major* when combined with the modal degrees, or *perfect* when combined with the tonal degrees.

### Intervals in C Major



Numbered degrees without flats (♭) or sharps (#) always imply Major or perfect intervals.

1 means:	1 forms a	<i>perfect unison</i>	with the tonic of the scale
2 means:	2 forms a	<i>Major second</i>	with the tonic of the scale
3 means:	3 forms a	<i>Major third</i>	with the tonic of the scale
4 means:	4 forms a	<i>perfect fourth</i>	with the tonic of the scale
5 means:	5 forms a	<i>perfect fifth</i>	with the tonic of the scale
6 means:	6 forms a	<i>Major sixth</i>	with the tonic of the scale
7 means:	7 forms a	<i>Major seventh</i>	with the tonic of the scale
8 means:	8 forms a	<i>perfect octave</i>	with the tonic of the scale

### Altering the Quality of Intervals

The term *Major* applies only to the intervals from tonic to the *modal* degrees of a Major scale. And *Major* implies that those intervals can become *minor* intervals, when lowering the modal degrees. In doing so, we create other modes (or scales) than the Major mode.

When (exceptionally) raising a Major interval, one becomes an *augmented* interval; when (exceptionally) lowering a minor interval, one becomes a *diminished* interval.<sup>1</sup>

<sup>1</sup> Modal degrees are never raised, with the exception of #2: the augmented 2<sup>nd</sup>. The 7<sup>th</sup> degree can be lowered twice, ♭7: the diminished 7<sup>th</sup> (inversion of the augmented 2<sup>nd</sup> – see [Inversion of Intervals](#) on next page).

The term *perfect* applies only to the intervals from tonic to the *fixed tonal* degrees of any scale. And *perfect* implies that those intervals *should* be fixed, otherwise becoming “imperfect”. Lowering the tonal degrees creates *diminished* intervals, raising them creates *augmented* intervals.<sup>1</sup>

## Inversion of Intervals

Knowing how intervals behave when inverted, can be a useful tool. It certainly tells us a lot on how Major/minor intervals behave in comparison to perfect intervals.

When inverted, this is how intervals behave:

a <b>unison</b>	stays	a <b>unison</b>	
a <b>second</b>	becomes	a <b>seventh</b>	and vice versa
a <b>third</b>	becomes	a <b>sixth</b>	and vice versa
a <b>fourth</b>	becomes	a <b>fifth</b>	and vice versa
an <b>octave</b>	stays	an <b>octave</b>	

But, see how the *qualities* of those intervals behave when inverted:

<b>Major</b>	becomes	<b>minor</b>	and vice versa
<b>perfect</b>	stays	<b>perfect</b>	
<b>augmented</b>	becomes	<b>diminished</b>	and vice versa

This helps to understand the differentiation of both types of intervals:

- *perfect* intervals, staying *perfect* when inverted
- *Major* intervals, becoming *minor* when inverted

The inversion of intervals is also most helpful in chord building.

E.g.: When trying to find 7 – the Major seventh – of a chord, it’s easier to look for the minor second – one semitone – below the octave (8 = 1).

Likewise, when trying to find  $\flat 7$  – the minor seventh – of a chord, it’s easier to look for the Major second – one whole tone – below the octave.

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<sup>1</sup> To illustrate this concept: In French *perfect* is called *juste*, meaning “right”, in Dutch one uses *rein*, meaning “pure”. Altering those intervals makes them “wrong”, “false” or “impure”.

## List of intervals most used in chords and chord scales

(Intervals formed from the central tone with *tonal* degrees are highlighted.)

<u>Number</u>	<u>Intervals &gt; Inversions of &gt;</u>	<u>... and their inversions ... intervals</u>	<u>Number</u>
1	Perfect unison	Perfect unison	1
♭2	minor second	Major seventh	7
2	Major second	minor seventh	♭7
#2	Augmented second	diminished seventh	♭♭7
♭3	minor third	Major sixth	6
3	Major third	minor sixth	♭6
♭4	diminished fourth	Augmented fifth	#5
4	Perfect fourth	Perfect fifth	5
#4	Augmented fourth	diminished fifth	♭5
8	Perfect octave	Perfect octave	8

<u>Intervals higher than the octave (combined intervals)</u>			<u>“same as”</u>
♭9	minor ninth	Octave + minor second	♭2
9	Major ninth	Octave + Major second	2
#9	Augmented ninth	Octave + augmented second	#2
11	Perfect eleventh	Octave + Perfect fourth	4
#11	Augmented eleventh	Octave + Augmented fourth	#4
♭13	minor thirteenth	Octave + minor sixth	♭6
13	Major thirteenth	Octave + Major sixth	6



## CIRCLE OF FIFTHS

### Upward Fifths

- Take the C Major scale, with its two Major tetrachords, separated by one whole tone.
- Use the second tetrachord, G – A – B – C, to start a new Major scale, i.e. as first tetrachord.
- Add a new Major tetrachord one whole tone higher. You'll need to raise the 3<sup>rd</sup> degree of this second (new) tetrachord in order to keep the intervals of the Major tetrachord right (1 – 1 – ½) → D – E – F♯ – G

Now you have a new Major scale, the G Major scale, G – A – B – C – D – E – F♯ – G.

The raised degree (F♯) is now the 7<sup>th</sup> degree, the leading tone, of this new scale, and is written in the key signature. The new scale starts one perfect fifth above C.

Keep on doing the same operation with each new scale, and you'll get this:

The diagram illustrates the Circle of Fifths, showing the progression of major scales starting from C Major and moving upwards through G Major, D Major, A Major, E Major, B Major, F# Major, and finally C# Major. Each scale is represented by a staff of music with a specific key signature. Arrows indicate the upward movement between scales, showing how each new scale starts one perfect fifth above the previous one.

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Each new scale needs a raised 7<sup>th</sup> degree – which is added to the key signature – in order to have a **leading tone**, to fit the blueprint of the Major scale.

C Major	-	0 (no raised degrees)
G Major	F#	1# (1 raised degree)
D Major	F# C#	2#
A Major	F# C# G#	3#
E Major	F# C# G# D#	4#
B Major	F# C# G# D# A#	5#
F# Major	F# C# G# D# A# E#	6#
C# Major	F# C# G# D# A# E# B#	7#

Each scale starts one perfect fifth above the previous scale.

Each new leading tone (raised degree) is one perfect fifth above the previous one.

## Downward Fifths

- Take the C Major scale, with its two Major tetrachords, separated by one whole tone.
- Use the first tetrachord, C – D – E – F, to end a new Major scale, i.e. as second tetrachord.
- Add a new Major tetrachord one whole tone lower. You'll need to start (backwards) with a lowered B, in order to respect that whole tone interval between the tetrachords. This B♭ is the 4<sup>th</sup> degree of the first (new) tetrachord (1 – 1 – ½) → F – G – A – B♭

Now you have a new Major scale, the F Major scale, F – G – A – B♭ – C – D – E – F.

The lowered degree (B♭) is the 4<sup>th</sup> degree, the subdominant, of this new scale, and is written in the key signature. The new scale starts one perfect fifth below C.

Keep on doing the same operation with each new scale, and you'll get this:

< Down from here

C Major

F Major

B♭ Major

E♭ Major

A♭ Major

D♭ Major

G♭ Major

C♭ Major

Each new scale needs a lowered 4<sup>th</sup> degree – which is added to the key signature – in order to have a **subdominant**, to fit the blueprint of the Major scale.

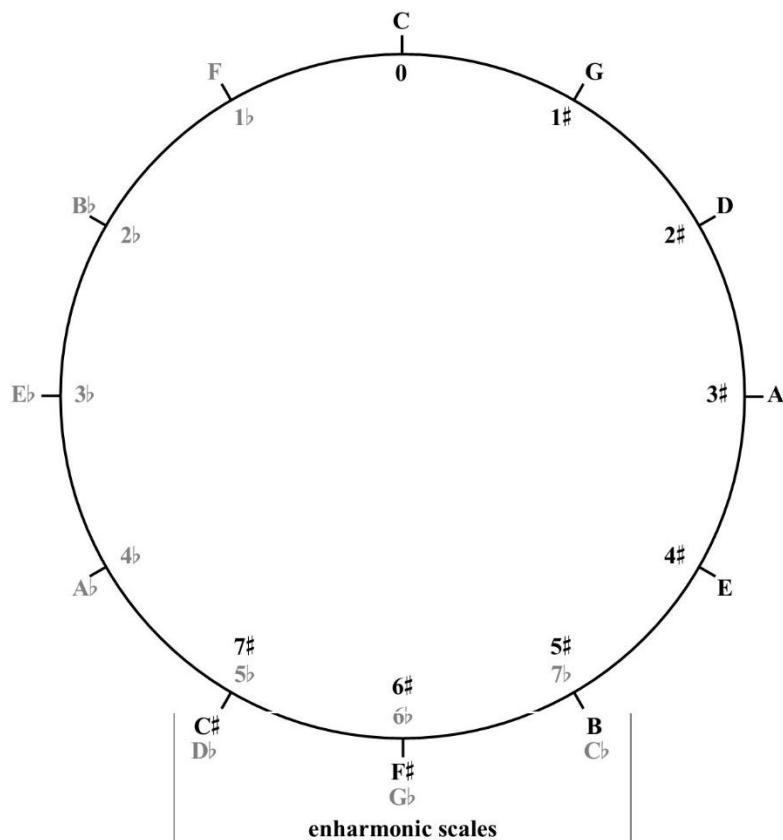
C Major	-	0 (no lowered degrees)
F Major	B♭	1♭ (1 lowered degree)
B♭ Major	B♭ E♭	2♭
E♭ Major	B♭ E♭ A♭	3♭
A♭ Major	B♭ E♭ A♭ D♭	4♭
D♭ Major	B♭ E♭ A♭ D♭ G♭	5♭
G♭ Major	B♭ E♭ A♭ D♭ G♭ C♭	6♭
C♭ Major	B♭ E♭ A♭ D♭ G♭ C♭ F♭	7♭

Each scale starts one perfect fifth below the previous scale.

Each new subdominant (lowered degree) is one perfect fifth below the previous one.

## Full Circle of Fifths

We can now write all these new Major scales in a circular graphic, the circle of fifths, looking just like a clock (12 scales). The circle closes at the *enharmonic scales* (*same sound, different names*). Going clockwise, up the circle, we have scales with sharps. Going counterclockwise, down the circle, we have scales with flats.



A horizontal representation of the circle of fifths offers more information:

C <b>b</b>	G <b>b</b>	D <b>b</b>	A <b>b</b>	E <b>b</b>	B <b>b</b>	F	C	G	D	A	E	B	F#	C#
7 <b>b</b>	6 <b>b</b>	5 <b>b</b>	4 <b>b</b>	3 <b>b</b>	2 <b>b</b>	1 <b>b</b>	0	1#	2#	3#	4#	5#	6#	7#
B <b>b</b>		F#												
E <b>b</b>			C#											
A <b>b</b>				G#										
D <b>b</b>	D <b>b</b>	D <b>b</b>	D <b>b</b>					D#						
G <b>b</b>	G <b>b</b>	G <b>b</b>							A#	A#	A#	A#	A#	A#
C <b>b</b>	C <b>b</b>									E#	E#	E#	E#	E#
F <b>b</b>											B#			
-7	-6	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	+6	+7

Upward fifths, the series of #: F – C – G – D – A – E – B

Downward fifths, the series of b: B – E – A – D – G – C – F

The scales themselves also follow that same order. C Major is “point 0”, having no sharps and no flats (between brackets in the series below).

Upwards: (F**b**) – C**b** – G**b** – D**b** – A**b** – E**b** – B**b** – F – [C] – G – D – A – E – B – F# – C# – (G# ...)

Downwards: (... G#) – C# – F# – B – E – A – D – G – [C] – F – B**b** – E**b** – A**b** – D**b** – G**b** – C**b** – (F**b**)

The last line in the table is an arithmetic translation of the key signatures that allows us to calculate key signatures for parallel minor scales (see further). You can use it to calculate the exact tone composition of *any* parallel scale (or mode), and it can be used for transposition too.

## RELATION BETWEEN MAJOR AND MINOR SCALES

Major and minor scales are related to one another in two different ways.

### Parallel scales

They can be *parallel*, meaning that they start and end on the same tonic (they share the same central tone) – they evolve between the same *parallel* tonics – and are, as such, part of the *same* tonality.

They do not share the same tone composition (or key signature). The one is just *another mode* to the other, *another way* of sounding the *same* tonality. The concept of parallel scales is necessary to understand modal music and modal changes.

To calculate the key signature of the parallel minor scale, one subtracts 3 (3 lowered degrees) to the key signature of the Major scale (see the last line of the circle of fifths table above: arithmetic translation of key signatures). E.g.:

C Major: no ♫, no ♪	= 0	>	0 - 3	= -3	> 3♭	= C minor
A Major:      3♯	= 3	>	3 - 3	= 0	> no ♫, no ♪	= A minor
D Major:      2♯	= 2	>	2 - 3	= -1	> 1♭	= D minor
Bb Major:      2♭	= -2	>	-2 - 3	= -5	> 5♭	= Bb minor

### Relative scales

Major and minor scales can be *relative*, meaning that they start on different tonics (they do not share the same central tone) but that they share the same *key signature* (relative *natural* minor and Major scales actually share exactly the same tone composition, the same “blood” as it were = relative).

They are part of *different* tonalities, but those different tonalities are very *close* to each other. The concept of relative scales is necessary to understand tonal changes – and/or modulations – to a very close, or relative – or sometimes not that close, not relative – tonality.

The minor scale (in the example above, A minor) starts on the 6<sup>th</sup> degree (the Major sixth A) of its relative Major key (C Major). In other words, the tonic of the minor scale is located one Major sixth above – or one minor third below – the tonic of its relative Major scale.

The Major scale (C Major) starts on the  $\flat 3$  degree (the minor third C) of its relative minor scale (A minor). In other words, the tonic of the Major scale is located one minor third above – or one Major sixth below – the tonic of its relative minor scale.

## The minor Scales

### THE NATURAL MINOR SCALE

The natural minor scale is built with a minor tetrachord followed by a Phrygian<sup>1</sup> tetrachord, both separated from one another by one whole tone.

TETRACHORDS CHART			
Tetrachord name	Construction 1 = Whole Tone $\frac{1}{2}$ = semitone	Degree numerals	Alternate names
Major	$1 - 1 - \frac{1}{2}$	$1 - 2 - 3 - 4$	Ionian
minor	$1 - \frac{1}{2} - 1$	$1 - 2 - \flat 3 - 4$	Dorian
Phrygian	$\frac{1}{2} - 1 - 1$	$1 - \flat 2 - \flat 3 - 4$	

With tonal degrees 1, 4, and 5; and modal degrees 2,  $\flat 3$ ,  $\flat 6$  and  $\flat 7$

Functions of the degrees:

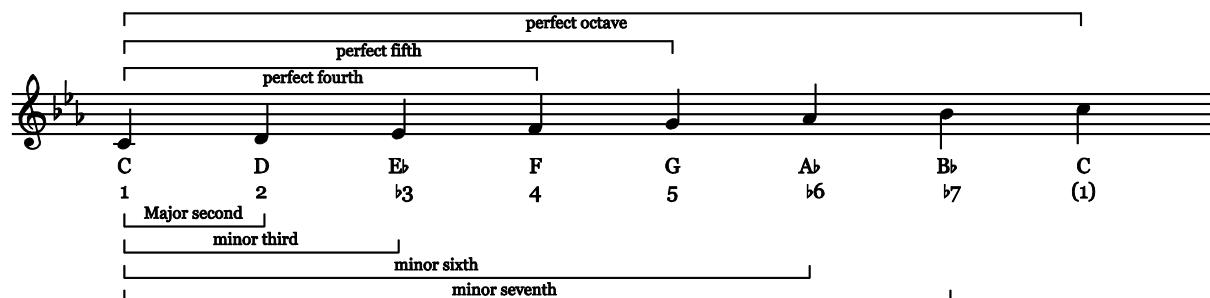
- 1 tonic
- 2 supertonic
- $\flat 3$  (**lowered**) mediant
- 4 subdominant
- 5 dominant
- $\flat 6$  (**lowered**) submediant
- $\flat 7$  **subtonic**
- 8 tonic

The minor scales (or modes: natural, harmonic, melodic, and others) borrow their names, *minor*, from the minor 3<sup>rd</sup> being used in the scale (see intervals below).

<sup>1</sup> The origin of the tetrachords names will become obvious when we'll learn more about all possible modes.

## Intervals in the natural minor scale

The intervals from tonic to the modal degrees are mostly minor, with the exception of the Major second. All intervals from tonic to the tonal degrees are (stay, i.e. as in Major) perfect.



1 means:	1 forms a	perfect unison	with the tonic of the scale
2 means:	2 forms a	Major second	with the tonic of the scale
b3 means:	b3 forms a	minor third	with the tonic of the scale
4 means:	4 forms a	perfect fourth	with the tonic of the scale
5 means:	5 forms a	perfect fifth	with the tonic of the scale
b6 means:	b6 forms a	minor sixth	with the tonic of the scale
b7 means:	b7 forms a	minor seventh	with the tonic of the scale
8 means:	8 forms a	perfect octave	with the tonic of the scale

## THE HARMONIC MINOR SCALE

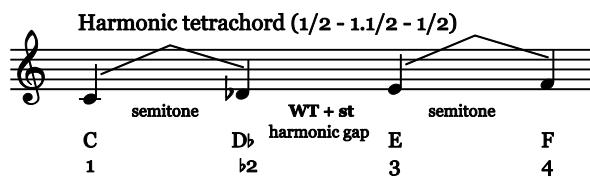
The Harmonic scale is a *synthetic* scale<sup>1</sup>, i.e. a scale with an altered degree with respect to the key signature. It was “invented” to fit the rules of functional harmony<sup>2</sup>, hence the term *Harmonic*. The subtonic of the natural minor scale (b7) is raised to a **leading tone** (7).

The Harmonic minor scale is built with a minor tetrachord followed by a Harmonic tetrachord, both being separated from one another by one whole tone.

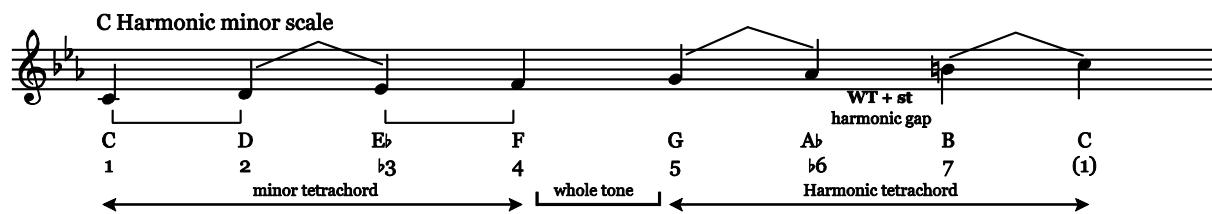
TETRACHORDS CHART			
Tetrachord name	Construction 1 = Whole Tone ½ = semitone 1½ = WT + st	Degree numerals	Alternate names
Major	1 – 1 – ½	1 – 2 – 3 – 4	Ionian
minor	1 – ½ – 1	1 – 2 – b3 – 4	Dorian
Phrygian	½ – 1 – 1	1 – b2 – b3 – 4	
Harmonic	½ – 1½ – ½	1 – b2 – 3 – 4	

<sup>1</sup> As opposed to a *natural* scale. We’ve seen the *natural* minor scale in the previous section, and we’ll learn about the other *natural* modes – Ionian (= Major scale), Dorian, Phrygian, Lydian, Mixolydian, Aeolian (= Natural minor scale) and Locrian – later.

<sup>2</sup> See Harmonic Functions of the Chords (page 56), and also The Harmonic minor Parent Scale (page 172).



The most obvious characteristic of the Harmonic tetrachord is the large gap, called the *Harmonic gap*, of one whole tone + one semitone<sup>1</sup> between  $\flat 2$  and 3 (becoming  $\flat 6$  and 7 in the harmonic scale – see full scale below).

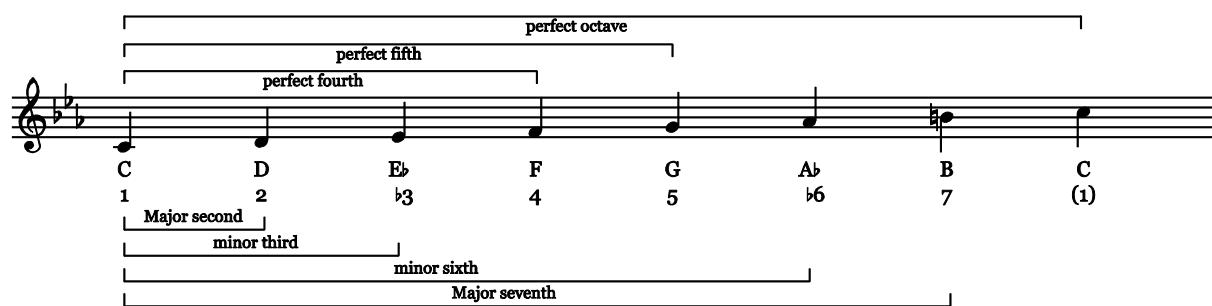


With tonal degrees 1, 4, and 5; and modal degrees 2,  $\flat 3$ ,  $\flat 6$  and 7

- 1 tonic
- 2 supertonic
- $\flat 3$  (lowered) mediant
- 4 subdominant
- 5 dominant
- $\flat 6$  (lowered) submediant
- 7 leading tone
- 8 tonic

### Intervals in the Harmonic minor scale

The intervals from tonic to the modal degrees are mixed: Major second, minor third, minor sixth and Major seventh. All intervals to the tonal degrees are (stay) perfect.



<sup>1</sup> This whole tone + semitone interval is usually, and correctly, called an *augmented second*. I prefer not to use that interval name here, to avoid confusion with degree #2, since all intervals analyzed in this book are intervals formed with, and starting on, the tonic, not intervals between other degrees of the scale.

## THE MELODIC MINOR SCALE

The Melodic minor scale is also a synthetic scale. It was “invented” to fit melodic aesthetic rules, hence the term *Melodic*, avoiding the Harmonic gap between  $\flat 6$  and 7. The lowered submediant ( $\flat 6$ ) of the harmonic minor scale is replaced by the (raised again, or natural) submediant (6).

The Melodic minor scale is built with a minor tetrachord followed by a Major tetrachord, both being separated from one another by one whole tone. Because of this mix of minor and Major elements, this scale is sometimes called a *hybrid* scale, partly minor, partly Major.<sup>1</sup>

TETRACHORDS CHART			
Tetrachord name	Construction 1 = Whole Tone $\frac{1}{2}$ = semitone $\frac{1}{2}$ = WT + st	Degree numerals	Alternate names
Major	1 – 1 – $\frac{1}{2}$	1 – 2 – 3 – 4	Ionian
minor	$\frac{1}{2}$ – 1 – 1	1 – 2 – $\flat 3$ – 4	Dorian
Phrygian	$\frac{1}{2}$ – 1 – 1	1 – $\flat 2$ – $\flat 3$ – 4	
Harmonic	$\frac{1}{2}$ – $1\frac{1}{2}$ – $\frac{1}{2}$	1 – $\flat 2$ – 3 – 4	

With tonal degrees 1, 4, and 5; and modal degrees 2,  $\flat 3$ , 6 and 7.<sup>2</sup>

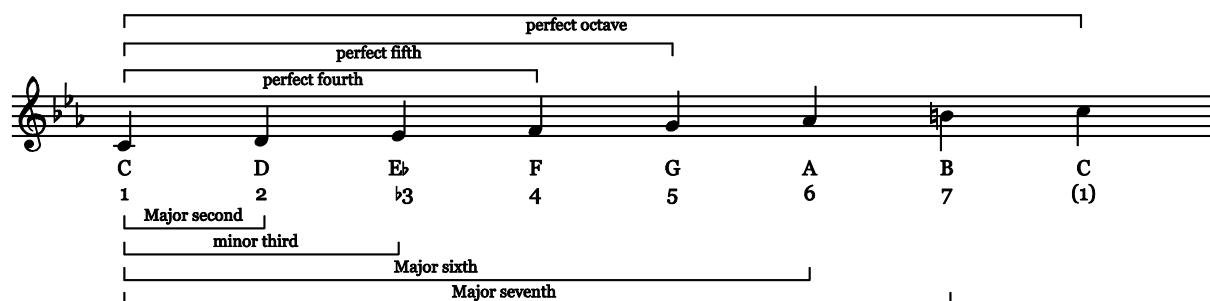
- 1 tonic
- 2 supertonic
- $\flat 3$  (lowered) mediant
- 4 subdominant
- 5 dominant
- 6 (natural)** submediant
- 7 leading tone**
- 8 tonic

<sup>1</sup> The Melodic scale was formerly known in some German schools as the Dür-Moll scale, meaning partly minor, partly Major (or *Hybrid*). The odd Dür-Moll naming, meaning Major-minor – or in fact, just the opposite of the order of the tetrachords – will be explained in the subsection The Melodic-IV7<sup>#11</sup> Subdominant Chord (page 181), and also in the chapter The Majorb6 Parent Scale (page 198).

<sup>2</sup> In Classical tradition it is often said that the melodic scale is *only* an *upward* scale. When going *downward*, one should *always* play the *natural* minor scale. In fact, there are plenty of examples to be found – in Classical music also (e.g. Bach) – of downward melodic scales. The upward melodic minor scale, followed by a downward natural scale, is a practical and “good sounding” exercise: you can practice both scales in only one exercise, and, upward melodic sounds “dominant”, where downward natural sounds “resolved in tonic”.

## Intervals in the Melodic minor scale

The intervals from tonic to the modal degrees are mostly Major, with the exception of the (indispensable<sup>1</sup>) minor third. All intervals to the tonal degrees are (stay) perfect.



## RELATIVE MINOR SCALES IN THE CIRCLE OF FIFTHS

C <sub>b</sub>	G <sub>b</sub>	D <sub>b</sub>	A <sub>b</sub>	E <sub>b</sub>	B <sub>b</sub>	F	C	G	D	A	E	B	F#	C#
7 <sub>b</sub>	6 <sub>b</sub>	5 <sub>b</sub>	4 <sub>b</sub>	3 <sub>b</sub>	2 <sub>b</sub>	1 <sub>b</sub>	0	1#	2#	3#	4#	5#	6#	7#
A <sub>b</sub> m	E <sub>b</sub> m	B <sub>b</sub> m	Fm	Cm	Gm	Dm	Am	Em	Bm	F#m	C#m	G#m	D#m	A#m
B <sub>b</sub>	B <sub>b</sub>	B <sub>b</sub>	B <sub>b</sub>	B <sub>b</sub>	B <sub>b</sub>	B <sub>b</sub>		F#	F#	F#	F#	F#	F#	F#
E <sub>b</sub>	E <sub>b</sub>	E <sub>b</sub>	E <sub>b</sub>	E <sub>b</sub>	E <sub>b</sub>			C#	C#	C#	C#	C#	C#	C#
A <sub>b</sub>	A <sub>b</sub>	A <sub>b</sub>	A <sub>b</sub>	A <sub>b</sub>				G#	G#	G#	G#	G#	G#	G#
D <sub>b</sub>	D <sub>b</sub>	D <sub>b</sub>	D <sub>b</sub>					D#	D#	D#	D#	D#	D#	D#
G <sub>b</sub>	G <sub>b</sub>	G <sub>b</sub>								A#	A#	A#	A#	A#
C <sub>b</sub>	C <sub>b</sub>									E#	E#	E#	E#	E#
F <sub>b</sub>										B#				
-7	-6	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	+6	+7

### Remember:

Upward fifths, the series of #: F – C – G – D – A – E – B

Downward fifths, the series of b: B – E – A – D – G – C – F

Note that the minor scales also follow that same order, A minor is “point 0”, having no sharps and no flats (between brackets in the series below).

Upwards: ... – A<sub>b</sub> – E<sub>b</sub> – B<sub>b</sub> – F – C – G – D – [A] – E – B – F# – C# – G# – D# – A# – ...

Downwards: ... – A# – D# – G# – C# – F# – B – E – [A] – D – G – C – F – B<sub>b</sub> – E<sub>b</sub> – A<sub>b</sub> – ...

The minor scales are located one minor third below their relative Major scales.

<sup>1</sup> Compare this scale with the Major scale: the only lowered degree is the b3. Without this minor third, the scale (or mode) wouldn't be called a “minor” scale (or mode).

## Pentatonic Scales

### THE MAJOR AND MINOR PENTATONIC SCALES

Major and minor **Pentatonic Scales** – meaning scales with only five different tones – are used a lot in Popular Music, Folk Music, Ethnic Music, Blues, Rock and Pop. These scales somehow summarize the Major and minor scales by keeping the essential tones – i.e. the tonic, the (Major or minor) third and the fifth – plus 2 other tones, and leaving out the tones that create semitones in the scale.

Tones left out in Major:

- |             |  |
|-------------|--|
| the fourth  | – one semitone above the Major third ( $\rightarrow$ F in C Major) |
| the seventh | – one semitone below the tonic ( $\rightarrow$ B in C Major)       |

Tones left out in minor:

- |                 |  |
|-----------------|--|
| the second      | – one semitone below the minor third ( $\rightarrow$ B in A minor)         |
| the minor sixth | – one semitone above the fifth ( $\rightarrow$ F in A minor). <sup>1</sup> |

Note that C Major Pentatonic (CMaj5t) is relative to A minor Pentatonic (Am5t)<sup>2</sup> – i.e. they share exactly the same tones – in the same way that the C Major scale is relative to the A minor Natural scale.

The gaps that are left by the missing tones – between 3 and 5, and 6 and 8, in Major pentatonic, between 1 and b3, and 5 and b7, in minor pentatonic – are minor thirds, intervals that are easy to sing because they have a “natural flowing” sound<sup>3</sup> (though less “lyrical”). Consequently, these scales are easy listening, easy singing and easy playing scales. Moreover, they are kind of passe-partout scales, meaning that you can use them as improvisation scales in many different ways and in many different contexts. These scales are therefore interesting to know. Many beginners try their first improvisations using only pentatonic scales.

Since mainly beginners, but also complacent “lazy” musicians – musicians that seek a convenient way of playing – use these scales everywhere, anywhere, every time and anytime, there is a strong tendency in popular culture to an abusive and clumsy use of pentatonic scales. However, many Jazz musicians have developed a creative way of playing with pentatonic scales that is truly artistic.<sup>4</sup>

<sup>1</sup> We'll learn that the 4<sup>th</sup> degree is an “avoid tone” on a Major chord (F is an avoid tone on the C chord), and that the minor 6<sup>th</sup> is an avoid tone on a minor chord (F is an avoid tone on the Am chord), which is one more reason for leaving this tone out in the pentatonic scales.

<sup>2</sup> I will use these useful abbreviations when needed.

<sup>3</sup> In Dutch music theory, minor thirds are called “Cuckoo's Thirds” because they sound like the calling of a cuckoo when they are sung downwards. Many singing lessons for starters begin with learning how to sing a downward minor third.

<sup>4</sup> There are many books to be found on the creative use of Pentatonic Scales that will bring you much further on this matter than is developed in this book.

## BLUES SCALES

Blues scales are pentatonic scales with the addition of so-called **blue notes**, i.e. tones that add a bluesy sound to the scale. We will develop the subject of Blues later in this book<sup>1</sup>, but it's useful to introduce the Blues scales right now because that “bluesy” sound had a major influence on American Popular Music since Blues is at the origin of Jazz<sup>2</sup>, Rhythm & Blues, Soul and Rock & Roll (amongst other styles).

The traditional **Blues Scale** is a minor pentatonic scale with the raised fourth<sup>3</sup> as additional blue note:

**A Blues Scale**

Since that scale is traditionally used in *Major Blues*<sup>4</sup>, the  $b_3$  and  $b_7$  are also called blue notes – by opposition to 3, the *Major 3<sup>rd</sup>*, and 7, the *Major 7<sup>th</sup>* (therefore comprising three blue notes:  $b_3$ ,  $\#4$  and  $b_7$ ).

Its relative Major scale, though not usually called a Blues Scale, is however evenly used a lot in Blues. I will call this, by convenience, the **Major Blues Scale**. It's a Major pentatonic scale with the addition of the lowered third<sup>5</sup> as blue note:

**C Major Blues Scale**

Note that the C Major Blues Scale is relative to the A (minor) Blues Scale, i.e. they share exactly the same tones, D $\sharp$  (#4 of A Blues) being enharmonic to E $\flat$  ( $b_3$  of C Major Blues).

Although the use of blue notes and Blues Scales is also possible, and sometimes even tasty, in other contexts than the Blues, I will usually refer in these contexts to the minor pentatonic (**m5t**) and to the Major pentatonic (**Maj5t**), implicitly meaning “*with or without blue note, to your own liking*”. In Blues contexts, on the other hand, I will refer to the **Blues** (scale) and to the **Maj.Blue**s (scale) respectively.

There's also a so-called “*Extended Blues Scale*” that we'll see later in this book.

<sup>1</sup> See [A Short-Cut to the Blues](#) (page 93).

<sup>2</sup> Think of the well-known Jazz record label, the “Blue Note Records”.

<sup>3</sup> Some books will tell you that this blue note is a lowered fifth.

<sup>4</sup> And in minor Blues also.

<sup>5</sup> Or raised second if you like.

# Chords

## BUILDING CHORDS

A chord is quite easily described as

- a piling up of thirds (Major and/or minor)<sup>1</sup>
  - with a minimum of three different tones, and a maximum of seven different tones<sup>2</sup>
- The number of different tones used determine the *density* of the chord.

The complexity with chords is that once you have built up the chord, there are lots of handlings you can do to the *voicing* of the chord – i.e. how you spread the chord's material (the tones that form the chord) over the different *voices of a choir*, over the different “*voices*” of a horn ensemble, over the different octaves of your keyboard, ...

- You can repeat some, or all, tones. Repeats do not alter the density of the chord. C – E – G – C – E – G – C is still a C Major *triad*, i.e. a three-note chord.
- You can play the tones in whatever order and inversions you want. G – E – C is still a C Major triad.
- You can spread the chord tones separated by narrow, or wide, intervals at your own choice – seconds, fourths, fifths, sixths or sevenths (and even wider).
- You can drop any tone out of the chord, and/or add new tones (new thirds), up to seven (or eight) different ones, as you wish.
- Some tones are to be avoided if one wants to keep the stability and functionality of the chord.

All those handlings are left to the creativity of the composer, arranger, improviser or performer. The writing possibilities, for just one chord, are countless. None of the mentioned handlings, though, alter the function of the chord (or the type of chord). That's why, in Jazz, the chords are analyzed by their *function* (or type) and by their *chord scale*, not by their *voicing* or *density*.

Moreover, a chord is a small tonal system on its own, with its own central tone (the *root* of the chord) and its own degrees. I experienced many times that this is the main pitfall for most students. In analysis, one always needs to be able to see a chord from two different perspectives:

1. To be able to analyze a chord on its own (*chord scale* or *vertical analysis*).
2. To keep track on how the chord, and its chord tones, relate to the tonality of the song (*parent scale* or *horizontal analysis*).

Both perspectives will be studied in the next part. First, we need a set of standards to work with chords.

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<sup>1</sup> Piling up – or a mixed piling up – of seconds, fourths, fifths, sixths or sevenths (and even wider) is definitely an option. But that type of voicing can be reduced, in analysis, to the standard build-up in thirds.

<sup>2</sup> With only two different tones, one does not yet speak of a chord, but only of a part of a yet to define chord. Eight different tones are exceptionally possible too. With more than eight tones, chords become clusters – i.e. too dense – and lose their clarity, losing their function at the same time.

## STRUCTURE OF A CHORD

### The root

The *root* is the actual tonic of the chord. To avoid confusion with the parent scale (see both perspectives needed in analysis above), it's preferable to use the term "root" when speaking of a chord or chord scale. The root gives its name to the chord.

### The Body

The *body*, or *chord tones*, is formed by the third (3), the fifth (5) and the seventh (7) of the chord. In (old) classical tradition, the seventh, is considered a tension. A triad (three-note chord), being (mostly) consonant, is considered a "perfect" chord; a four-note chord, being (mildly to strongly) dissonant, is considered a "tensioned" chord.

Not so in Jazz. Again, the density of the chord is not taken into account. Four-note chords (and four-note chord symbols on the score) are standard as they provide more sounding information (and written information for chord symbols) about the function of the chord.<sup>1</sup>

The **third (3)** and the **seventh (7)** are the *guide tones* of the chord. Those degrees provide the typical sound of the chord type (Major or minor third? Major or minor seventh?), they "guide" our ear into the right color and function. The perfect fifth (5) sounds in open consonance – almost unison – with the root and is therefore expendable and consequently often left out of the chord. This doesn't alter the essential sound, or the function, of the chord.

### The Super Structure

The *super structure* is formed by the *tensions* (T) and *avoids* (Av): the ninth (9), the eleventh (11) and the thirteenth (13).

9, 11 and 13 are exactly the same tones as 2, 4 and 6. But seen in the buildup in thirds, 9, 11 and 13 are the logical numbers for the super structure being above the octave, though, sometimes the use of 2, 4 and 6 in chord symbols instead is justified.

11 is avoid (Av11). (see Chord Scale further on page 54)

For advanced readers: Note that the chord symbol ( $C^\Delta$ ) doesn't reflect the use of tensions 9 and 13. In Jazz common practice it doesn't need to. And this for two main reasons:

1. The use of complex chord symbols with lots of information (in this case it would be  $C^{\Delta 9/13}$ ) is "heavy" on a score and hinders an easy reading by the performer.
2. With some chords, and in some contexts, it's possible to alter certain tensions. In Jazz, it's customary to leave the choice of the tensions (and consequently, the possible modal changes) to the performer. A four-note chord symbol offers that liberty.

<sup>1</sup> The use of triads, instead of four-tone chords, is of course a justified *stylistic* choice. Remember that you can always drop the seventh (or any other degree) if you want to.

## CHORD SYMBOLS

	Degree		Symbols used
ROOT	1	Any tone can be the root of a chord. The root can never be “moved”, since it’s the tonal centre of the chord. Moving the root is changing to another chord, to another tonal system.	the name of the root (e.g. C, C♯ or D♭, D, D♯ or E♭, etc ...)
BODY	3 ♭3	The Major third (3) is the “third by default”. The minor third (♭3) is possible	(no symbol – by default) <b>m</b> or –
	5 ♭5	The perfect fifth (5) is the “fifth by default” The diminished fifth (♭5) is possible	(no symbol – by default) <b>♭5</b> ° (in combination with ♭3 and ♭7)
	#5	The augmented fifth (#5) is possible	<b>#5</b> or +
	♭7	The minor seventh (♭7) is the “seventh by default”	<b>7</b> (default 7 <sup>th</sup> )
	7	The Major seventh (7) is possible	Δ or <b>Maj7</b>
	♭♭7	The diminished seventh (♭♭7) is possible	° (in combination with ♭3 and ♭5)
SUPER STRUCTURE	9	The Major ninth (9) is possible	<b>9</b> (implying ♭7) △ <b>9</b> or <b>Maj9</b> (implying 7) <b>2</b> (not implying any 7 <sup>th</sup> )
	♭9	The minor ninth (♭9) is possible with ♭7	<b>7</b> ⁹
	#9	The augmented ninth (#9) is possible with ♭7	<b>7</b> ⁹
	11	The perfect eleventh (11) is possible, for minor chords for “Major” chords, but <i>leaving out the Major third</i>	<b>m11</b> (implying ♭7 and 9) <b>sus4</b> or <b>sus</b> (no 7 <sup>th</sup> nor 9 <sup>th</sup> )
	#11	The augmented eleventh (#11) is possible	<b>#11</b> (not implying 7 <sup>th</sup> nor 9 <sup>th</sup> )
	13	The Major thirteenth (13) is possible	<b>13</b> (implying ♭7 and 9) or <b>6</b> (not implying 7 <sup>th</sup> nor 9 <sup>th</sup> )
	♭13	The minor thirteenth (♭13) is possible with ♭7	<b>7</b> ⁹¹³ (not implying 9 <sup>th</sup> )

### Special symbols:

- ° diminished combines ♭3, ♭5 and ♭7
- ∅ half diminished combines ♭3, ♭5 and ♭7 (same as **m7**⁹)
- alt altered combines no 5<sup>th</sup>, ♭9, #9, #11 and ♭13 (all **altered** tensions)
- 6/9 sixth-ninth combines 9 and 13 on a triad (not implying any 7<sup>th</sup>)

## Inversion of Chords

A chord can be inversed, i.e. using another *body degree (chord tones 3, 5 or 7)* than the root in the bass. In chord symbols, this is indicated by a “slash chord”.

C7 is in root position, i.e. with the root in the bass.

C7/E, means C7 (chord) with E (tone) – the (Major) third – in the bass (first inversion).

C7/G, means C7 (chord) with G (tone) – the (perfect) fifth – in the bass (second inversion).

C7/Bb, means C7 (chord) with Bb (tone) – the (minor) seventh – in the bass (third inversion).

## Hybrid chords

A hybrid chord is also written as a slash chord. This use of hybrid chords is mostly to avoid “heavy” chord symbols, and/or to provide *some* information about the voicing of the chord.

B $\flat$  $^\Delta$ /C seems to be a B $\flat$  $^\Delta$  chord, with the ninth (C) in the bass.

Gm7/C seems to be a Gm7 chord, with the eleventh (C) in the bass.

E $\flat$  $^\Delta$ /C seems to be a E $\flat$  $^\Delta$  chord, with the thirteenth (C) in the bass.

G $\flat$ 7/C seems to be a G $\flat$ 7 chord, with the (raised) eleventh (C) in the bass.

But, tensions (9, 11 or 13) are “never” used as bass tones. These are all hybrid chords, meaning that the bass tone is the actual root, while the chord is (mostly) the super structure (possibly also 3<sup>rd</sup>, 5<sup>th</sup> or 7<sup>th</sup>).

B $\flat$ $^\Delta$ /C	is a C chord, no 3 <sup>rd</sup> , no 5 <sup>th</sup> , with $\flat$ 7, 9, 11 and 13	→ C13sus4
Gm7/C	is a C chord, no 3 <sup>rd</sup> , with 5, $\flat$ 7, 9 and 11	→ C9sus4
E $\flat$ $^\Delta$ /C	is a C chord, with $\flat$ 3, 5, $\flat$ 7 and 9	→ Cm9
G $\flat$ 7/C	is a C chord, with 3 (F $\flat$ = E), no 5 <sup>th</sup> , with $\flat$ 7, $\flat$ 9 and $\sharp$ 11 (G $\flat$ = F $\sharp$ )	→ C7 $^{\flat}$ 11 or C7alt

The last example, D/C, can be

- either an inversed chord: D7 with  $\flat$ 7 (C) in the bass.
- or a hybrid chord: C, no 3rd, no 5th, no 7th, with 9,  $\sharp$ 11 and 13 → C9 $^{\sharp}$ 11/13 or C $^\Delta$ 9 $^{\sharp}$ 11/13

The context of the song should provide the conclusive answer.

## Other Chord Symbols

“Modern” chord symbols appeared first in the early 20<sup>th</sup> century, and still today some music publishers and musicians tend to redefine the chord symbols according to their own style and/or nationality, to their own understanding of the chords, according to the voicing and/or the density of the chord. This leads to discussions on which chord symbols are “right”.

Moreover, since the internet boom, one sees the most “inventive”, and sadly enough often “incorrect” symbols appear. This creates confusion in the mind of young students in reading as well as in writing. I try to sort things out, as far as I can, below.

Symbols	Used for	Best replaced by
Correct symbols, but “obsolete” and/or “not universal”		
“Latin” relative names:  Do Re Mi Fa Sol La Si	the root of the chord	“Germanic” absolute names:  C D E F G A B
German tone names:  B (very confusing!) H		B $\flat$ B
Cis, Dis, Eis ... <sup>1</sup> Ces, Des, Es ...		C $\sharp$ , D $\sharp$ , E $\sharp$ ... C $\flat$ , D $\flat$ , E $\flat$ ...
min, MI	minor chords	m or –
MA7, M7	Major seventh chords	$\Delta$ or Maj7
dim	diminished seventh chords	°
aug	augmented fifth chords	#5 or +
Correct symbols, but “unnecessary”		
$\Delta$ 7	Major seventh chords	$\Delta$ or Maj7
°7	diminished seventh chords	°
5+	augmented fifth chords	#5 or +
add2, add9	adding tension 9 to a triad	2
add6, add13	adding tension 13 to a triad	6

<sup>1</sup> German and Dutch Music Schools suggest using “is” to replace the word “sharp”, and “es” to replace the word “flat”. By doing so, it is possible to sing, and differentiate by name,  $\flat$  and  $\sharp$  tones in only one syllable, sung on only one tone, e.g. “d – e – fis – e – es – d” to sing “d – e – f $\sharp$  – e – e $\flat$  – d”. It can be a useful system for syllable singing, it *shouldn’t* be used for chord symbols though (I’ve seen it!).

Symbols	Used for	Best replaced by
Correct symbols, but typical “unclear” guitar chords that hopelessly try to say something about the chord’s voicing		
<b>add4, add11</b>	adding tension 11 to a <i>minor</i> triad	<b>m11</b> (+ guitar tabs)
<b>OMIT3, OMIT5, ... no3<sup>rd</sup>, no5<sup>th</sup>, ...</b>	dropping a degree out of the chord	full right <b>functional</b> chord (+ guitar tabs)
<b>5 e.g. C5</b>	“power chord” fifth chord, no 3 <sup>rd</sup> , played on the bass strings of a guitar	full right <b>functional</b> chord (+ guitar tabs)
“Don’ts”		
<b>M</b>	Major triad	no symbol needed
<b>7M, 7+</b>	Major seventh chords	$\Delta$ or <b>Maj7</b>
– and + <b>e.g. 9-, -9, 9+, +9</b>	raising and/or lowering the tensions	$\flat$ and/or $\sharp$
<b>sus2<sup>1</sup></b>	adding tension 9 to a triad	<b>2</b>
<b>add4, add11</b>	adding tension 11 to a <i>Major</i> triad	“not done”, 11 is avoid (unless for modal reasons <sup>2</sup> )

The  $\Delta$ -symbol: Some musicians dismiss the  $\Delta$ -symbol – for Maj7-chords – because the “triangle” originally meant “triad”. This is an odd argument since a triad doesn’t need a special symbol (**C** = Major triad, and **Cm** = minor triad).

In fact, the triangle-symbol (**C $\Delta$**  or **Cm $\Delta$** ) is a very subtle symbol saying in essence:

*“This is a chord on which the 7<sup>th</sup> must be the Major 7<sup>th</sup>,* i.e. if you play a 7<sup>th</sup>. You *might* prefer to hear, and thus play, the triad (**C** or **Cm**), because of the dissonance created by the Major 7<sup>th</sup> against the root of the chord, especially when the root is in the melody. But *if* you like a denser and richer Jazzy sound, you *can* add the Major 7<sup>th</sup> ( $\rightarrow$  **CMaj7** or **CmMaj7**). And, if the 7<sup>th</sup> still sounds disturbing to you, you *can* play the Major 6<sup>th</sup> instead ( $\rightarrow$  **C6** or **Cm6**).”

Another reason invoked to avoid the triangle  $\Delta$  is that, when written with haste, it may appear as a circle  $\circ$  (possible confusion with diminished chords). But, obviously, music should never be written hastily, not even when writing for yourself. Written music always needs discipline, clarity and “lightness”. And the  $\Delta$  is actually much lighter on the score than the full **Maj7**-symbol, and therefore easier to read.

<sup>1</sup> See The V7sus4 Chord (page 85).

<sup>2</sup> See “Typical” Modal Voicings (page 255).

General rule for the use of tensions in chord symbols: Try to avoid writing too many tensions in the chord symbols, unless required by the melody and/or by the arrangement. The context of the music should always provide enough information on which tensions to use, without needing to write these in the chord symbol. And in case of different possible tensions, you should leave the choice of the tensions to the improviser. Writing too many tensions is *heavy* on the score, it *inhibits* the performer, and it's *too rigid* for the improviser.

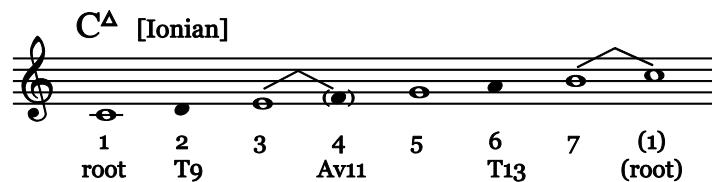
## CHORD SCALE

The chord scale provides us with a scale that can be matched to, and played over, a chord. Chord scales, in this book, will always be written between brackets, symbolizing that the chord scale is limited in time – i.e. [from the very first hit of the chord, until one leaves the chord] – e.g. [Ionian], sometimes abbreviated to [Ion]. These brackets also avoid possible confusion with parent scales.

A chord scale is just a scaled way, by step instead of thirds, of representing a full chord, with its chord tones (1, 3, 5 and 7: the root and body), its tensions and/or avoids (9, 11 and 13: the super structure).

*Tensions* are available extensions of the chord, kind of additional “chord tones”, that color and enrich the chord without altering its intended function, without destabilizing the chord.

*Avoids* are non-available extensions, *non* “chord tones”. They are to be avoided *harmonically*, because they destabilize the chord. They are *melodically* available though, being essentially just an *approach tone* to the chord tone below (in the same way that chromatic approach tones are melodically available – see further). It’s easy to locate avoids in a chord scale: they are one semitone *above* a chord tone.



**1, 3, 5 and 7** are chord tones (root + body) – **2, 4 and 6** form the super structure:

2 and 6 are tensions (T9 and T13) – 4 is avoid (Av11), because a semitone above 3

### Important notes on avoids:

- In the example above, the [Ionian] chord scale, the (upper) root “should” be avoided because it’s a semitone above chord tone 7. Of course, the root *cannot* be avoided. Moreover, the root could be in the melody. A good way to avoid the dissonance created by the Major 7<sup>th</sup> against the root, when the root is in the melody, is to drop 7 out of the chord, playing the triad C or, “Jazzier”, the four-note chord C6 instead. 6-chords are often played instead of Δ-chords, they keep the same function.
- It’s important to remember, and so I repeat, that avoids are *melodically* available, as long as they resolve on a chord tone. “Avoid” doesn’t mean “Do not play” but “Do not add to the chord”.
- On dominant seventh chords there are no avoid tones, except for Av11. Actually, 11 is avoid when the Major third (3) is played OR the Major third is “avoid” if 11 is played (sus4 effect). Other tones that are a semitone above chord tones, i.e. ♭9 or ♯13, are harmonically available, because of the already inherent instability of a dominant seventh chord.
- All *chromatic* tones, the ones that are not listed in the chord scale – the ones that are “out” – are naturally also to be avoided harmonically, but are actually also *melodically* available, as chromatic approaches, upward or downward leading tones, to chord tones and tensions.

## MAJOR FUNCTIONAL HARMONY

Functional Harmony refers to the use of *cadences*, i.e. a sequence of *chords*, each with a specific *function*, which highlights, and eventually resolves to, the *central chord* of the tonality. This is still the most used, or at least heard, harmonic system in music, i.e. “traditional” music, but also in “mainstream”<sup>1</sup> Jazz.

The Major Scale is the present-day cultural reference scale (and has been for a long time), and as such, it sets the standard for Functional Harmony. In this part we’ll learn the basic concepts needed to study and analyze Major Functional Music: parent scale and diatonic chords, harmonic functions of the chords, functional cadences, analysis, modulation, chord scales and modes.

### The Major Parent Scale

A parent scale is a mode that generates chords (and chord scales). Let’s use the Major scale (or Ionian mode<sup>2</sup>) as parent scale.

#### SERIES OF DIATONIC CHORDS IN MAJOR

Pile up thirds, up to four tones (root and body), on every tone of the parent scale, using only tones that are diatonic<sup>3</sup> to the parent scale.

The diagram shows a musical staff with seven chords: C<sup>Δ</sup>, Dm7, Em7, F<sup>Δ</sup>, G7, Am7, and Bm7<sup>b5</sup>. Below each chord is its Roman numeral name: IImaj7, IIIm7, IIIIm7, IVmaj7, V7, VIIm7, and VIIIm7<sup>b5</sup>.

The diatonic chords of the C Major scale are:

- |     |   |   |                   |
|-----|---|---|-------------------|
| I   | is a <b>C</b> chord with 3 – 5 – 7 (in reference to C Major)    | → | C <sup>Δ</sup>    |
| II  | is a <b>D</b> chord with b3 – 5 – b7 (in reference to D Major)  | → | Dm7               |
| III | is a <b>E</b> chord with b3 – 5 – b7 (in reference to E Major)  | → | Em7               |
| IV  | is a <b>F</b> chord with 3 – 5 – 7 (in reference to F Major)    | → | F <sup>Δ</sup>    |
| V   | is a <b>G</b> chord with 3 – 5 – b7 (in reference to G Major)   | → | G7                |
| VI  | is a <b>A</b> chord with b3 – 5 – b7 (in reference to A Major)  | → | Am7               |
| VII | is a <b>B</b> chord with b3 – b5 – b7 (in reference to B Major) | → | Bm7 <sup>b5</sup> |

***Remember the series of Major Diatonic Chords, i.e. of any Major scale:***

I<sup>Δ</sup> – IIIm7 – IIIIm7 – IV<sup>Δ</sup> – V7 – VIIm7 – VIIIm7<sup>b5</sup>

<sup>1</sup> The term “mainstream” is definitely old-fashioned. Present-day “mainstream” Jazz mixes tonal, modal and even sometimes a-tonal characteristics.

<sup>2</sup> See next chapter Chord Scales in Major (page 72).

<sup>3</sup> Diatonic means “included in the scale”.

$I^\Delta$  is the *central chord*, just as scale degree 1 is the *central tone*.

$I^\Delta$ ,  $IV^\Delta$  and  $V7$  – all three of them *Major chords*, the chords build on the *tonal degrees* – are called *main chords* – also *tone generating or tonal chords*<sup>1</sup> – in the classical tradition.

$IIm7$ ,  $IIIm7$ ,  $VIm7$  and  $VIIIm7^b$ <sup>5</sup> – all four of them *minor chords*, the chords build on the *modal degrees* – are sometimes called *parallel chords*<sup>2</sup> in the classical tradition. You might want to call them *substitution chords*<sup>3</sup>.

## HARMONIC FUNCTIONS OF THE CHORDS

There are three possible harmonic functions, depending on which degrees of the parent scale are included in the chord.

### DOMINANT Function – Highly Unstable

Chords that include the Perfect 4<sup>th</sup> degree (subdominant) and the Major 7<sup>th</sup> degree (leading tone) of the parent scale are **Dominant**, meaning that they are *highly unstable*, but *with a strong harmonic function towards the central chord  $I^\Delta$*  (*con-centric function*).

### The Tritone of the Tonality

Remember how we described the 4<sup>th</sup> degree (subdominant) of the tonality as a highly unstable degree, and the 7<sup>th</sup> degree (leading tone) as a strong dissonance in respect to the central tone.

Note also the place of the 7<sup>th</sup> and 4<sup>th</sup> degrees when the parent scale is expressed in the circle of fifths<sup>4</sup>: **B – E – A – D – G – C – F**. This is not just a coincidence. Both tones form what one calls **the tritone of the tonality**.

Every Major scale includes only *one* tritone – two in fact, but the one is just an inversion of the other: the augmented 4<sup>th</sup> > F – B, and the diminished 5<sup>th</sup> > B – F.

Perfect 4th		P4		P4		Augmented 4th (tritone)		P4		P4		P4	
4	5	6	7	1	2	3	4	5	6	7	8	9	10
Degrees	1	2	3	4	5	6	7	8	9	10	11	12	13

Perfect 5th		P5		Diminished 5th (tritone)									
5	6	7	1	2	3	4	5	6	7	8	9	10	11
Degrees	1	2	3	4	5	6	7	8	9	10	11	12	13

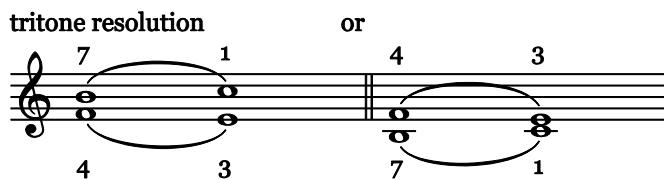
<sup>1</sup> In Dutch: *hoofdakkoorden* – in French: *accords génératrices de ton* or *accords tonals*

<sup>2</sup> In English only – In Dutch: *nevenakkoorden* (= “chords next to the main chords”). I couldn’t find an equivalent concept in French.

<sup>3</sup> See Chord Substitution (page 59) below.

<sup>4</sup> Here expressed in downward fifths, as most cadences will be. See next section.

Because of the instability and the dissonance generated by this tritone, both tones need to be *resolved*, i.e. bring us back to a sense of *rest*, of *stability*. This is how the tritone resolves:



The 4<sup>th</sup> degree resolves down, by semitone – downward leading tone – to the Major 3<sup>rd</sup>.  
The 7<sup>th</sup> degree resolves up, by semitone – upward leading tone – to the central tone 1.

In Jazz, the 7<sup>th</sup> degree doesn't need to resolve to the central tone. It very often stays unresolved as the (typical) Major 7<sup>th</sup> in the following central chord I<sup>Δ</sup>.

Both resolution tones, 1 and 3, form the essence of the central chord I<sup>Δ</sup> (and of the Major parent scale): its root (and also central tone of the tonality) + its Major third.

### ***The Dominant Chord(s)***

**V7** and **VIIIm7<sup>b5</sup>** both include the tritone – 4 and 7 – of the tonality.

The main chord **V7** provides the name – **Dominant (D)** – to this function.  
Both chords are **D (dominant)**.

The tritone, 4 and 7 of the parent scale, are the *guide tones*, b7 and 3 respectively, of V7 <sup>1</sup>.

The tritone, 4 and 7 of the parent scale, are b5 and 1 respectively, of VIIIm7<sup>b5</sup>.

### ***Important note on VIIIm7<sup>b5</sup>:***

The VIIIm7<sup>b5</sup> chord is set between brackets because that chord is almost never used as such, i.e. as a Dominant chord. If (exceptionally) used as Dominant, it merely sounds like an inversion of the V7: V7/3, meaning the V7 inversed chord on its third.

But we will encounter this chord mainly as a relative-II chord in a secondary cadence towards another diatonic chord<sup>2</sup>.

<sup>1</sup> Be very much aware of the two analyzing perspectives, starting from here: (1) analyze the chord on its own (related to the chord scale: vertical, analysis) and (2) keep track on how the chord, and its chord tones, relate to the tonality of the song (related to the parent scale: horizontal analysis).

<sup>2</sup> See The minor IIIm7b5-V7 Cadence (page 114).

## SUBDOMINANT Function – Mildly Unstable

Chords that include the 4<sup>th</sup> degree (subdominant) of the parent scale are *mildly unstable*, with a mild harmonic function away from the central chord I<sup>Δ</sup> (*ex-centric function*).

These chords are (still) unstable because of the presence of the unstable 4<sup>th</sup> degree, but they do not tend towards the central chord, because of the absence of the leading tone 7.

### The Subdominant Chords

IIm7 and IV<sup>Δ</sup> both include the 4<sup>th</sup> degree (without 7).

The main chord IV<sup>Δ</sup> provides the name – **Subdominant (SD)** – to this function.

Both chords are **SD (Sub-Dominant)**.

A musical staff in G major (one sharp) shows six chords: I<sup>Δ</sup> (Tonic), II<sup>m</sup>7 (SD), III<sup>m</sup>7 (SD), IV<sup>maj</sup>7 (SD), V<sup>7</sup> (Dominant), VI<sup>m</sup>7 (Tonic), and VII<sup>m</sup>7<sub>b5</sub> (Dominant). The boxes labeled 'SD' indicate the presence of the 4<sup>th</sup> degree (b3) in the chords II<sup>m</sup>7, III<sup>m</sup>7, and IV<sup>maj</sup>7.

The 4<sup>th</sup> degree of the parent scale is b3 of IIm7.

The 4<sup>th</sup> degree of the parent scale is the root of IV<sup>Δ</sup>.

## TONIC Function – Stable

Chords that do not include the 4<sup>th</sup> degree (subdominant) – but the 3<sup>rd</sup> instead – are *stable*.

They provide a sense of rest, a sense of resolution.

### The Tonic Chords

I<sup>Δ</sup>, III<sup>m</sup>7 and VI<sup>m</sup>7 do not include the 4<sup>th</sup> degree.

The main chord I<sup>Δ</sup> provides the name – **Tonic (T)** – to this function.

All three chords are **T (onic)**.

A musical staff in G major (one sharp) shows six chords: I<sup>Δ</sup> (Tonic), II<sup>m</sup>7 (SD), III<sup>m</sup>7 (Tonic), IV<sup>maj</sup>7 (SD), V<sup>7</sup> (Dominant), VI<sup>m</sup>7 (Tonic), and VII<sup>m</sup>7<sub>b5</sub> (Dominant). The boxes labeled 'T' indicate the presence of the 3<sup>rd</sup> degree (G) in the chords II<sup>m</sup>7, III<sup>m</sup>7, and VI<sup>m</sup>7.

### Important note on III<sup>m</sup>7 and VI<sup>m</sup>7:

III<sup>m</sup>7 and VI<sup>m</sup>7 are Tonic chords, but they can never replace – with “satisfactory result” that is – the only *real finalis centralis* Tonic chord I<sup>Δ</sup> at the end of a song. I<sup>Δ</sup> is the only chord that provides the *real final resolution* to the song.

III<sup>m</sup>7 and VI<sup>m</sup>7 are in fact very often used to replace I<sup>Δ</sup> in a deceptive cadence, a cadence that sounds like “the song is not finished yet”. So, they *can* both replace I<sup>Δ</sup>, but only at the end of a musical *phrase* “somewhere in the middle” of the song. See [Chord Substitution](#) below on the next page.

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## Chord Substitution

Chords that share the same harmonic function can replace one another in a song. This is called chord substitution.<sup>1</sup>

- $I^\Delta$ ,  $IIIIm7$  and  $VIm7$ , all **T**(onic) chords, can *substitute* each other.
- $IIIm7$  and  $IV^\Delta$ , both **SD** (subdominant) chords, can *substitute* each other.
- $V7$  and  $VIIIm7^{\flat 5}$ , both **D**(ominant) chords, *should be able to substitute* each other.  
But,  $VIIIm7^{\flat 5}$  is not very often, almost never, used (see important note on  $VIIIm7^{\flat 5}$  above).  
That leaves us with **V7** as sole **Dominant (Seventh) Chord**.

Some older Classical Schools, thinking triads, suggested substituting the main chords by their parallel chords “at the third”:

- **I** can be substituted by  $IIIm$ , one third higher, and by  $VIm$ , one third lower. That actually says exactly the same as above.
- **V** can be substituted by  $VIIIm^{\flat 5}$ , one third higher (same as above), *and by IIIm, one third lower*. That sometimes – surprisingly – works<sup>2</sup>, but **V** (i.e. the triad) and  $IIIIm7$  (i.e. even with its 7<sup>th</sup>) do not include the tritone of the tonality that is indispensable for the dominant function and sound.  $IIIIm7$  can never sound dominant. When keeping **V** in the bass, it can sound as a **V** chord with tension 13, though without the tritone.
- **IV** can be substituted by  $IIIm$ , one third lower (same as above), *and by VIm, one third higher*. It seems to work, indeed, but  $VIm7$ , in this case, sounds more as an inversion of  $IV^\Delta$  on its third (and without the root).

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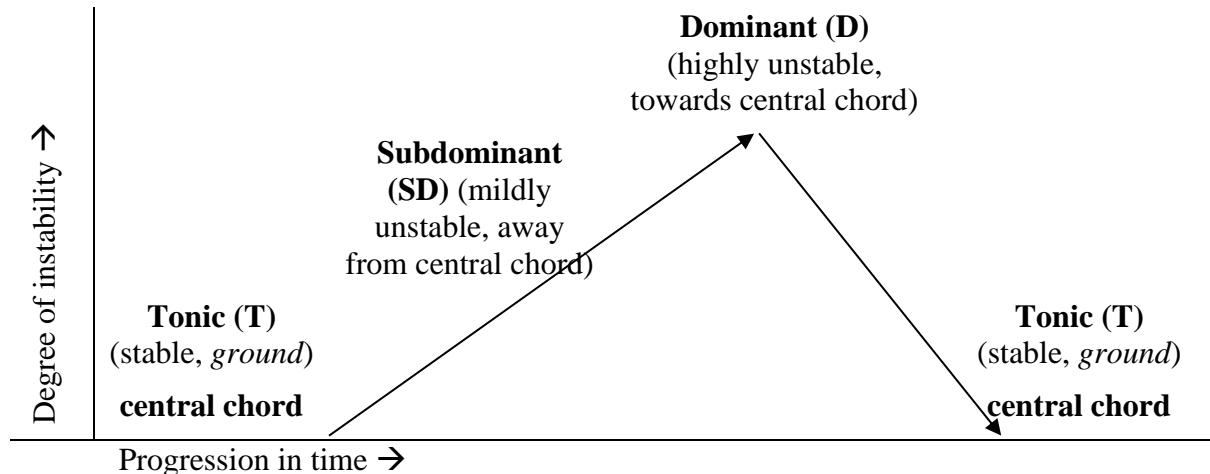
<sup>1</sup> See further Re-harmonization of a Song using Chord Substitutions (page 67) for examples of chord substitutions.

<sup>2</sup> Typically in Modal Non-Functional Harmony (last part of this book – page 249).

## MAJOR FUNCTIONAL CADENCES

Cadences are chord progressions of minimum two chords that “fall” to the central chord (latin: *cadere* = to fall)<sup>1</sup>. By extension, a cadence is also a *conclusion*, the *ending* of a musical phrase, section or song.

The cadences are based on the three harmonic functions – Tonic (T), Subdominant (SD) and Dominant (D) – of the chords. The dynamics of the functions can be (roughly) represented in the following graphic:



When cadences – i.e. when the root motion of the chords forming the cadences – follow the *downward* circle of fifths – B E A D G C F – they are *progressive*. When cadences – the root motion – follow the *upward* circle of fifths – F C G D A E B – they are *retrogressive*.

### The Authentic Cadence



The authentic cadence is, as the name suggests, “the only real” *progressive* way – i.e. going *down* the circle of fifths – of falling to the central chord (or of ending a song). In analysis, this cadence will always be highlighted with an *arrow*, symbolizing the expectation created by the dominant chord, and meaning a *downward resolution, down a perfect fifth, from the V7 chord to the target chord*, which is (here), the central chord  $I^\Delta$ .

Some books use the term *perfect* cadence as a synonym for authentic cadence. In fact, a perfect cadence, in classical tradition, has a more precise meaning depending on the chord’s voicing:

- When an authentic cadence ends with the central tone, i.e. the root of the central chord, in *both* the lowest voice (the bass) and the highest voice (on top of the ending central chord  $I^\Delta$ ) it is called a *perfect* authentic cadence.
- When an authentic cadence doesn’t end with the root in the bass *and* the root on top of the ending central chord  $I^\Delta$ , it is called an *imperfect* authentic cadence.

<sup>1</sup> In Dutch the central chord is often referred to as the “ground chord” (*grondakkoord*) illustrating the idea of the cadence, “falling to the ground”.

perfect authentic cadence      imperfect authentic cadence

As said many times before, in Jazz one doesn't take the chord's voicing into account, leaving it to the personal taste of the performer. As such, Jazz musicians do not differentiate perfect from imperfect authentic cadences.

### The Plagal Cadence

IV <sup>Δ</sup>	I <sup>Δ</sup>
SD	T

The plagal cadence is a *retrogressive* way<sup>1</sup> – i.e. going *up* the circle of fifths – of going back to the central chord (or of ending the song).

This cadence is (was) frequently used on the ending of religious hymns, on the word *Amen* (SD on *A-*, T on *-men*). That is probably the reason why we still hear it a lot at the end of Gospel style songs (originally based on religious hymns) and Blues (influenced by Gospel).

### The Complete IV-V Cadence

IV <sup>Δ</sup>	V7	I <sup>Δ</sup>
SD	D	T

This cadence is an authentic cadence also, since it ends with V7 to I<sup>Δ</sup>. It is *complete* because it uses all three functions – SD, D and T – and because it uses all the tones of the parent scale (even when played with “classical” triads on I and IV)<sup>2</sup>.

IV (triad)	<b>F</b>	C	D	E	F	G	A	B	C
V7	<b>G7</b>				F	G			
I (triad)	<b>C</b>	C		E		G		B	C
		↓	↓	↓	↓	↓	↓	↓	↓
Parent scale		C	D	E	F	G	A	B	C

<sup>1</sup> *Plagal* comes from the image of a wave returning (the reflux - *retrogressive*) to the sea, leaving the beach (*plage* in French) open to the eyes.

<sup>2</sup> The dominant V is mostly played in four-note chord, as V7 (the dominant seventh chord) in Classical music also, since the Renaissance, otherwise missing the *functional* tritone that is needed for dominant chords.

The IV-V complete cadence is not very common in Jazz. It is very common in Classical music and all traditional folk and pop styles though. In Classical music this cadence is often played like this, called an *Italian* cadence:

*Italian complete cadence*

F      C/G      G7      C

IVmaj7    Imaj7/5    V7    Imaj7

IV $\Delta$  goes to I $\Delta/5$  – i.e. inversed with its fifth in the bass as preparation to the V7 chord – before ending with an authentic cadence V7 to I $\Delta$ . (IV $\Delta$  to I $\Delta$ : plagal – V7 to I $\Delta$ : authentic)

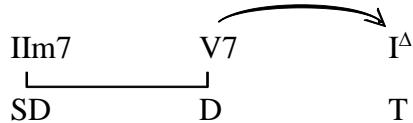
Note the typical “Classical” use of triads instead of four-note chords, except on the dominant seventh G7 needing the tritone to sound dominant. The analysis is written with *functional* (Roman numerals) *four-note* chord symbols, suggesting the possible *extension* of the chords when improvising over this cadence.

### The Complete Plagal Cadence

V7	IV $\Delta$	I $\Delta$
D	SD	T

This cadence is not very common because it is *retrogressive*. We find it in Gospel (see [The Plagal Cadence](#) above on the previous page) and it's very common in Blues, with the Blues chords V7, IV7 and I7 instead.<sup>1</sup>

### The Complete II-V Cadence



The II-V cadence is another complete authentic cadence: it uses all three functions – SD, D and T – and all the tones of the parent scale. This cadence is more *progressive* than the IV-V cadence, because it follows the downward circle of fifths. This is the reason why it is preferred, in Jazz<sup>2</sup>, to the IV-V cadence. In analysis, this cadence will always be highlighted with a *hook* from IIIm7 to V7, meaning a downward resolution, down a perfect fifth, from IIIm7 to V7.

### Half Cadence and Turnaround

The half cadence is a cadence that does not end on the central chord I $\Delta$ , but (mostly) on the dominant chord V7 instead, creating the urge to continue the song. This cadence is typically used at the end of a phrase or section, “somewhere in the middle” of the song, not at the end of the song. However, in Jazz tradition a half cadence is often added to a song immediately after the ending central chord, urging the song to be repeated for improvisation purposes. That half cadence is then called a *turnaround*.

<sup>1</sup> See [Blues Structure](#) (page 94).

<sup>2</sup> And actually, very common in Baroque Music too.

## “Rhythm Changes”

(And other *progressive downward fifths* extensions of the II-V cadence)

<b>Rhythm Changes 1:</b>	I <sup>Δ</sup>	VIm7	IIIm7	V7
	T	T	SD	D

<b>Rhythm Changes 2:</b>	IIIIm7	VIm7	IIIm7	V7
	T	T	SD	D

The *progressive root motion* of the chords is going down the circle of fifths.

C<sup>Δ</sup> Am<sup>7</sup> Dm<sup>7</sup> G<sup>7</sup> Em<sup>7</sup> Am<sup>7</sup> Dm<sup>7</sup> G<sup>7</sup>  
 (p) I<sup>Δ</sup> VIm7 IIIm7 V7 IIIIm7 VIm7 IIIm7 V7  
 Rhythm changes 1    Rhythm changes 2

These are half cadences because they end on the dominant V7, urging the song to be continued. Rhythm changes are often played in loops, repeating themselves “endlessly”. They are also very often used as turnarounds.

These half cadences are commonly called “Rhythm Changes” because they are used in the song “I Got Rhythm” by George Gershwin:

I Got Rhythm - George Gershwin (1898 - 1937)

B<sup>♭Δ</sup> Gm<sup>7</sup> Cm<sup>7</sup> F<sup>7</sup> Dm<sup>7</sup> Gm<sup>7</sup> Cm<sup>7</sup> F<sup>7</sup>  
 I<sup>Δ</sup> VIm7 IIIm7 V7 IIIIm7 VIm7 IIIm7 V7  
 Rhythm changes 1    Rhythm changes 2

<b>“Mozart Changes”:</b>	I <sup>Δ</sup>	IV <sup>Δ</sup>	VIIIm7 <sup>b5</sup>	IIIIm7	VIm7	IIIm7	V7	I <sup>Δ</sup>
	T	SD	D	T	T	SD	D	T

The *progressive root motion* of the chords is going down the circle of fifths, with the exception of the change from IV<sup>Δ</sup> to VIIIm7<sup>b5</sup>. At that point the root motion goes down a *diminished 5<sup>th</sup>* (a tritone) in order to stay diatonic (otherwise going to B♭ and thus leaving the key of C Major).

C<sup>Δ</sup> F<sup>Δ</sup> Bm<sup>7b5</sup> Em<sup>7</sup> Am<sup>7</sup> Dm<sup>7</sup> G<sup>7</sup> C<sup>Δ</sup>  
 I<sup>Δ</sup> IV<sup>Δ</sup> VIIIm7<sup>b5</sup> IIIIm7 VIm7 IIIm7 V7 I<sup>Δ</sup>  
 diminished 5th!

This cadence uses *all the diatonic chords*, even (arguably) the otherwise “never” used VIIIm7<sup>b5</sup>. The name “Mozart Changes” is not a common name. I call it that way because I’ve found this cadence in compositions by Mozart. It’s the only example I’ve found so far using the VIIIm7<sup>b5</sup> as a “regular” diatonic chord.

Piano Sonata n°16 KV545 - 1st movement (2nd theme) - W.A. Mozart (1756 - 1791)

Chord analysis for the 2nd theme:

- I<sup>Δ</sup>
- IV<sup>Δ</sup>
- VIIIm⁷⁵
- IIIIm⁷
- VIIm⁷
- IIIm⁷
- V⁷
- I<sup>Δ</sup>
- Em/G
- Am
- D⁹/F#
- G
- (b⁹)

This sonata is in the key of C Major (no flats or sharps in the key signature). But this is the 2<sup>nd</sup> theme that, according to sonata rules, is modulated one fifth higher, i.e. in G Major. That's why the analysis is in G Major.

Note the typical classical use of triads instead of four-note chords, except on the dominant seventh D7 (very last note) needing the tritone to sound dominant. The analysis is written with *functional* (Roman numerals) *four-note* chord symbols, suggesting the possible *extension* of the chords when improvising over this theme.

Note also the use of lots of chord inversions, also typical for Classical music, creating interesting and smooth melodic bass lines and rich sounding voicings. The *bass* motion is not in downward fifths, though the *root* motion still is.

### The Deceptive Cadence

A deceptive cadence is a cadence that *does not behave as expected*, it does not resolve on the expected chord. The most known – and therefore too often, the only known – deceptive cadence in Classical music is

IV<sup>Δ</sup>    V⁷    VIIm⁷ (instead of I<sup>Δ</sup>)

But the cadence is deceptive *whatever* chord ends the cadence *instead of* I<sup>Δ</sup> (or instead of the target<sup>1</sup> chord) – VIIm⁷, IIIIm⁷ or *any other* chord.

This ends the section on functional Major cadences. At this point, some of my students often ask “Are these the *only possible, or allowed, chord progressions* in music?” NO, of course!

When composing, do not restrain yourself *only* to these cadences. First, because a cadence *falls* back to the central chord, but you can write whatever you want to *leave* the central chord. Second, because at this point we've only seen Major cadences, but we'll learn also about secondary, minor, modal and tritone substitute cadences. Be creative, try other progressions. But you might be amazed that these cadences just keep coming up in your ear – in your, and in other people's, songs.

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<sup>1</sup> We'll see later that the *expected* chord following a dominant chord will not always be the central chord I<sup>Δ</sup>. (See Secondary V7 Dominant Chords on page 99.)

## ANALYSIS OF A SONG IN MAJOR

Lots of Jazz standards are *Choruses* borrowed from (Broadway) musical songs. These songs often start with a *Verse*, a song part usually sung by one of the main characters of the play in a more or less recitative way, followed by a (mostly) strong *Chorus*, a second song part usually sung by a group of characters or by the *choir*, hence the term *chorus*, meaning “choir”. These choruses are (were) usually very popular, and for Jazz musicians they are a good opportunity to give free play to their improvising skills.

The chorus is very often written in AABA form, like ‘Blue Moon’ by Richard Rodgers<sup>1</sup>: the first part (A) is repeated twice, then going to the middle part (B – not analyzed here) before repeating the first part (A) again to end the *chorus*.

### **Blue Moon (A part) - Richard Rodgers (1902 - 1979)**

A  $E^{\flat}\Delta$   $Cm^7$   $Fm^7$   $B^{\flat}7$   $E^{\flat}\Delta$   $Cm^7$   $Fm^7$   $B^{\flat}7$

$I^{\Delta}$   $VIm^7$   $IIIm^7$   $V^7$   $I^{\Delta}$   $VIm^7$   $IIIm^7$   $V^7$

T T SD D T T SD D

$E^{\flat}\Delta$   $Cm^7$   $Fm^7$   $B^{\flat}7sus4$   $E^{\flat}\Delta$   $(Cm^7$   $Fm^7$   $B^{\flat}7)$

$I^{\Delta}$   $VIm^7$   $IIIm^7$   $V^7sus4$   $SD(D)^*$   $I^{\Delta}$   $(VIm^7$   $IIIm^7$   $V^7)$

T T SD D (T SD D)

END of the song (Turnaround)

## Steps for Analyzing a Song

### **Step 1: Arrows → authentic cadences**

Search for dominant 7-chords. They’re easy to find. The dominant chord is the only 7-chord in the diatonic series. All other chords are either  $\Delta$ -chords, m7-chords or  $m7^{\flat 5}$ -chords:

$$I^{\Delta} - IIIm7 - IIIm7 - IV^{\Delta} - \mathbf{V7} - VIm7 - VIIIm7^{\flat 5}$$

Once located, see if the chord resolves down a perfect fifth to the next chord (*whatever type<sup>2</sup> of chord that is*). If so, highlight with an **arrow** going to the following resolution chord, called the *target chord*.

In ‘Blue Moon’, every  $Bb7$  – a 7-chord – resolves a perfect fifth down to  $Eb$  (in this case  $Eb^{\Delta}$ , but *the type of the target chord doesn’t matter*). Every  $Bb7$  is highlighted with an arrow going to the target chord. These arrows all represent authentic cadences.

\* The third  $Bb7$  is actually a  $Bb7sus4$ . This sus4-appendix shouldn’t influence your analysis. A 7sus4-chord is still *some sort of* dominant. This type of chord – the  $V7sus4$  – and its SD(D) function, is extensively explained at the end of next chapter<sup>3</sup>.

<sup>1</sup> © Metro-Goldwyn-Mayer Inc. 1934 (renewed 1961)

<sup>2</sup> This is important! We’ll see that the target chords of dominant chords won’t always be  $I^{\Delta}$ . (See Secondary V7 Dominant Chords on page 99.)

<sup>3</sup> See next chapter, subsection The V7sus4 Chord (page 85).

### **Step 2: Hooks → II-V cadences**

Search for m7-chords (or m $7^{\flat 5}$ -chords<sup>1</sup>). Once located, (1) see if they are followed by a 7-chord, and if so, (2) see if they resolve down a perfect fifth to that 7-chord. If *both* conditions are met, they are highlighted with a **hook** going to the 7-chord.

In ‘Blue Moon’, Cm7 is not followed by a dominant 7-chord. Ignore. Fm7, however, is always followed by B $\flat$ 7, which is down a perfect fifth. Every Fm7 is highlighted with a hook going to the following 7-chord B $\flat$ 7. These hooks all represent II-V cadences.

### **Step 3: Translation of the chords into functional chord symbols (Roman numerals)**

To be able to translate the chords into functional chord symbols, you must first know in what key (or what parent scale) the song is written. This can sometimes be tricky – not so with ‘Blue Moon’ – certainly when you’re a novice analyst. Here are a few clues.

- Look at the key signature.  
In ‘Blue Moon’, there are three flats in the key signature, suggesting that the song is either in E $\flat$  Major or in C minor (remember the circle of fifths).
- Look at the ending chord. Chances are that this is the central *finalis* chord I $^\Delta$ .  
In ‘Blue Moon’, the ending chord is E $\flat$  $^\Delta$ , suggesting that the song is in E $\flat$  Major.

But what to do when your “score” is a hastily written paper, quickly written before starting the rehearsal of the band, with just a few chords written on it?

- The hooks and arrows (step 1 and 2) mostly give us a clue.  
In ‘Blue Moon’, every “hook and arrow” – every II-V cadence, Fm7 B $\flat$ 7 – goes to the target chord E $\flat$  $^\Delta$ , suggesting that Fm7 is II $m$ 7, B $\flat$ 7 is V7, and that E $\flat$  $^\Delta$  is the central chord I $^\Delta$ , which points to a song in E $\flat$  Major.
- If still in doubt, you can look for both the  $\Delta$ -chords. One of them should be I $^\Delta$ , while the other should be IV $^\Delta$ . (Not applicable to ‘Blue Moon’)

In any case, *always transcribe the chord type – Δ, 7, m7 or m7 $^{\flat 5}$  – to the Roman numerals* to check if the chord types correspond with the diatonic chord series. If it does not fit the series, chances are that you made a wrong assumption when deciding in which key the song is.

For this first analysis, I’ve also added the functions – T, SD and D – on the score. We’ll skip that step later assuming that one knows the functions without needing to write these down.

### **Final step: Notes on the analysis**

There will be lots of notes to be made when the analysis gets deeper, and the songs more complicated. For now, with ‘Blue Moon’, the conclusions are still quite easy.

- The song is in E $\flat$  Major.
- All chords used are diatonic chords. There are no “strange” chords, no tonal changes and no modal changes.
- The song is written with Rhythm Changes – I $^\Delta$  VI $m$ 7 II $m$ 7 V7 – that repeat “endlessly”.
- The last Rhythm changes – the chords between brackets in the last two bars – shouldn’t be played at the very ending of the song. These are used only as a *turnaround*, to repeat the song from the “top”.

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<sup>1</sup> See The minor II $m$ 7b5-V7 Cadence (page 114).

## Transposition

One of the main applications of the analysis of a song is the possible transposition. Having translated all the chords into functional chord symbols (Roman numerals), you should now be able to transpose the song easily into any other (Major) key (e.g. because it's too high, or to low, for the singer). You definitely should exercise the transposition to (all) other keys.

## Re-harmonization of a Song using Chord Substitutions

Another interesting application of the analysis is that we are now able to re-harmonize the song, i.e. changing the chords to create new colors, but without changing the essence of the song, without altering the functions of the chords. Remember:

- I<sup>Δ</sup>, IIIm7 and VIm7, all **T**(onic) chords, can *substitute* each other.
- IIm7 and IV<sup>Δ</sup>, both **SD** (subdominant) chords, can *substitute* each other.
- V7 is the only **D**(ominant) chord. (VIIIm7<sup>b5</sup> being “never” used.)

Here is a possible re-harmonization for ‘Blue Moon’<sup>1</sup>:

**Blue Moon (A part) - Richard Rodgers (1902 - 1979)**

Note that the *functions* have not changed, only the chords have.

- **Bar 3:** Gm7 (III<sup>m7</sup>) replaces I<sup>Δ</sup>, both Tonic chords (→ Rhythm Changes 2)  
The original *authentic* cadence – V7 to I<sup>Δ</sup> – is now *deceptive* – V7 to III<sup>m7</sup> – → no more arrow.
- **Bar 5:** Cm7 (VI<sup>m7</sup>) replaces I<sup>Δ</sup>, both Tonic chords.  
The original *authentic* cadence – V7 to I<sup>Δ</sup> – is now *deceptive* – V7 to VI<sup>m7</sup> – → no more arrow.
- **Bar 5:** Cm7/Bb – i.e. an inversion of the chord using the b7 in the bass – replaces Cm7 (in root position) to create a moving bass line going to Ab. This is, of course, not a chord substitution since the chord stays the same as the original chord.
- **Bar 6:** Ab<sup>Δ</sup> (IV<sup>Δ</sup>) replaces II<sup>m7</sup>, both Subdominant chords, in bar 6.  
The original II-V cadence is now a IV-V cadence → no more hook.
- **Bar 7:** I did not replace the ending I<sup>Δ</sup> chord, because using III<sup>m7</sup> or VI<sup>m7</sup> instead wouldn't sound as an ending. I<sup>Δ</sup> is the only possible *finalis* chord.

<sup>1</sup> © Metro-Goldwyn-Mayer Inc. 1934 (renewed 1961)

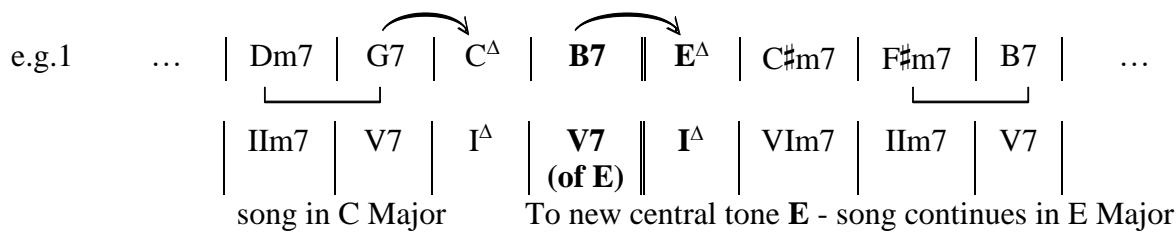
## MODULATION TO OTHER KEYS

A song doesn't always stay in only one key. It can sometimes modulate to another, Major or minor, key<sup>1</sup>, to another central tone. To do so, there are basically two techniques: (1) the “announced modulation” and (2) the “unannounced modulation”.

### The announced modulation

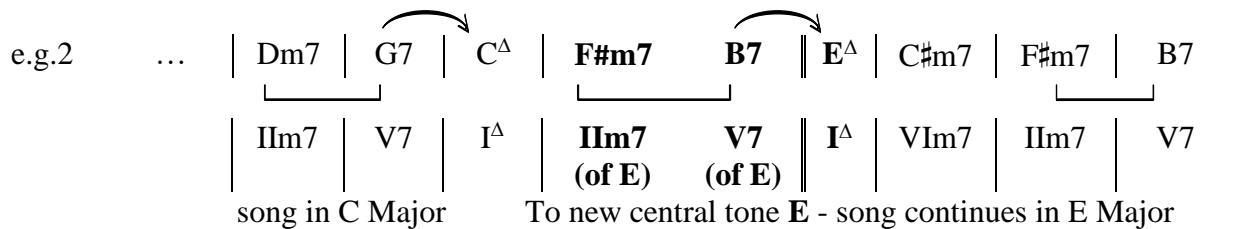
#### *Using an authentic cadence*

The first technique, the announced modulation, is the most common, and also definitely the easiest to use. One announces the new central tone by using an authentic cadence to that new central tone.



In this first example the modulation is announced by, only, the dominant chord of the new key. This does the trick, but it usually sounds a little too direct.

To smoothen up the modulation, it's better to use a *complete* II-V authentic cadence<sup>2</sup>:



#### *Using common “pivotal” chords*

Still smoother is the use of common chords, also called *pivotal* chords. But only *neighboring keys* – i.e. keys close to each other in the circle of fifths<sup>3</sup>, maximum two fifths away – and the

<sup>1</sup> We'll see later that most modulations *can* be seen as *modal changes* also, supporting the theory proposed by Arnold Schönberg (1874-1951) that it's not *that* easy to escape to the attraction of the “very first” *main* central tone, and that most composers actually keep “orbiting around” that main central tone.

<sup>2</sup> The complete IV-V cadence doesn't work as easily as the II-V cadence for modulations. That is because the II-V cadence follows a progressive downward fifths movement, not so with the IV-V cadence. Try, and compare!

<sup>3</sup> Reminder of the Circle of Fifths:

C <sub>b</sub>	G <sub>b</sub>	D <sub>b</sub>	A <sub>b</sub>	E <sub>b</sub>	B <sub>b</sub>	F	C	G	D	A	E	B	F <sup>#</sup>	C <sup>#</sup>
7 <sub>b</sub>	6 <sub>b</sub>	5 <sub>b</sub>	4 <sub>b</sub>	3 <sub>b</sub>	2 <sub>b</sub>	1 <sub>b</sub>	0	1 <sup>#</sup>	2 <sup>#</sup>	3 <sup>#</sup>	4 <sup>#</sup>	5 <sup>#</sup>	6 <sup>#</sup>	7 <sup>#</sup>
A <sub>b</sub> m	E <sub>b</sub> m	B <sub>b</sub> m	Fm	Cm	Gm	Dm	Am	Em	Bm	F <sup>#</sup> m	C <sup>#</sup> m	G <sup>#</sup> m	D <sup>#</sup> m	A <sup>#</sup> m

according relative keys – i.e. keys that are above one another (Major and minor) in the circle of fifths – do have common chords.

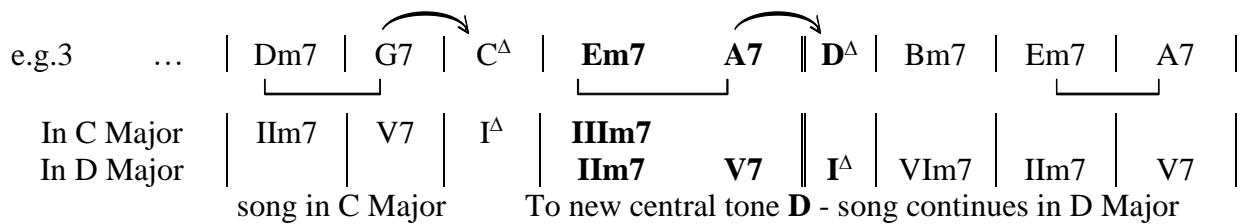
C Major and E Major, the two keys used in the examples above, do not share common chords, because they are too far away – four fifths away – from each other in the circle of fifths:

C <sup>Δ</sup>	Dm7	Em7	F <sup>Δ</sup>	G7	Am7	Bm7 <sup>b5</sup>	(C <sup>Δ</sup> )	(Dm7)	(C Major chords)
	E <sup>Δ</sup>	F♯m7	G♯m7	A <sup>Δ</sup>	B7	C♯m7	D♯m7 <sup>b5</sup>		(E Major chords)

But C Major and D Major – only two fifths away from each other – however do share **one** common chord:

C <sup>Δ</sup>	Dm7	<b>Em7</b>	F <sup>Δ</sup>	G7	Am7	Bm7 <sup>b5</sup>	(C <sup>Δ</sup> )	(C Major chords)
D <sup>Δ</sup>	<b>Em7</b>	F#m7	G <sup>Δ</sup>	A7	Bm7	C#m7 <sup>b5</sup>	(D <sup>Δ</sup> )	(D Major chords)

Moreover, the IIIm7 (Em7) of C Major happens to be the IIm7 of D Major, justifying a very smooth modulation using that common chord:

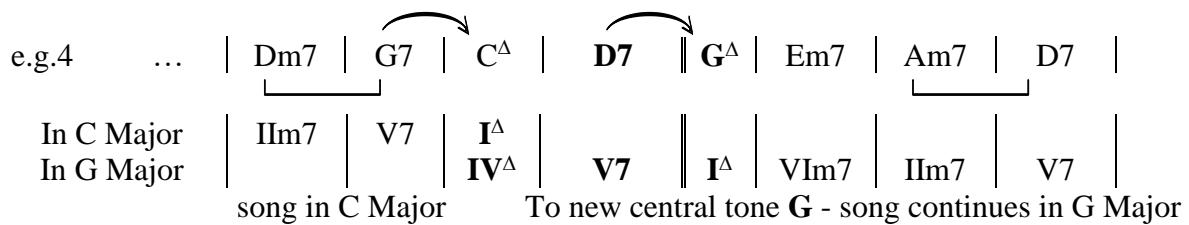


The common chord is said to have a *double function*:

- (1) the *primary* function: III<sup>m</sup>7 in C Major  
 (2) the *secondary* function: II<sup>m</sup>7 in D Major

The primary function always prevails on the secondary function, i.e. one hears the common chord (still) in the original key, because our ear does not hear the common chord in the new key yet. It does so only when the modulation is confirmed by the new dominant chord. It is possible though, but usually harsh, to announce the modulation by letting the secondary function prevail, and by playing the new key immediately from the common chord on.<sup>1</sup>

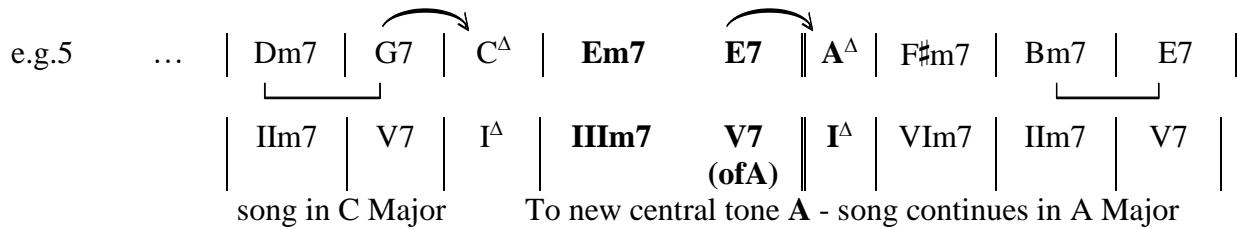
Another “classical” example of a modulation with the use of a pivotal chord:



<sup>1</sup> Announced modulations often occur with intermediate steps, not going suddenly to the new key, but stepwise.

### **Using common “pivotal” bass tones**

The use of a pivotal bass tone is just another way to smoothen up the modulation.



Em7 (III<sup>m</sup>7 in C Major) is played first, followed by E7 (V7 of A). Both chords share the same bass tone.

One can skip the Em7 (III<sup>m</sup>7 in C Major), and play the E7 (V7 of A) immediately, i.e. only *suggesting* the common bass tone, but that brings us back to the very first example, e.g. 1: only using the dominant to modulate.

### **The unannounced modulation**

One can of course also modulate without announcing the new key, using none of the techniques described above. Such an unannounced modulation always comes as a surprise, which can of course be the purpose sought by the composer.

### **Important note on modulations:**

Just like at the end of the section on Major Functional Cadences (page 60) my students sometimes ask “Are these the *only possible, or allowed, modulation techniques* in music?” NO, of course!

When composing, do not restrain yourself *only* to these modulation types. Again, at this point we’ve only seen Major cadences. We’ll learn about secondary, minor, modal and tritone substitute cadences. Be creative, try other progressions.

## Modulation in analysis

Let us now analyze the B-part of ‘Blue Moon’<sup>1</sup>:

### **Blue Moon (B part) - Richard Rodgers (1902 - 1979)**

The musical score shows two staves of music. The top staff is in E♭ Major (parent scale) and the bottom staff is in G♭ Major (parent scale). The harmonic progression is as follows:

- Bar 1: II<sup>m</sup>7 (Fm<sup>7</sup>) → V<sup>7</sup> (B♭<sup>7</sup>) → I<sup>Δ</sup> (E♭<sup>Δ</sup>)
- Bar 2: VI<sup>m</sup>7 (Cm<sup>7</sup>)
- Bar 3: II<sup>m</sup>7 (Fm<sup>7</sup>) → V<sup>7</sup> (B♭<sup>7</sup>) → I<sup>Δ</sup> (E♭<sup>Δ</sup>)
- Bar 4: A♭m<sup>7</sup> (A♭m<sup>7</sup>) → D♭<sup>7</sup> (D♭<sup>7</sup>) → G♭<sup>Δ</sup> (G♭<sup>Δ</sup>)
- Bar 5: B♭/F (B♭/F) → F<sup>7</sup> (F<sup>7</sup>) → B♭<sup>7sus4</sup> (B♭<sup>7sus4</sup>) → B♭<sup>7</sup> (B♭<sup>7</sup>)
- Bar 6: V<sup>7/V\*</sup> (V<sup>7/V\*</sup>) → V<sup>7sus4</sup> (V<sup>7sus4</sup>) → V<sup>7</sup> (V<sup>7</sup>)
- Bar 7: E♭ Major (E♭ Major) → B♭ Major (B♭ Major) → E♭ Major (E♭ Major)

Arrows indicate modulations between keys. The parent scale-line is shown below the staff.

- Bar 5: A♭m7, D♭7 and G♭<sup>Δ</sup> are non-diatonic chords in E♭ Major – A♭, if IV, should be Δ and not m7, and both D♭ and G♭ are not even diatonic tones of E♭ Major. In fact, the song modulates to G♭ Major, using a II-V cadence to announce the modulation.
- Bar 7: the song modulates back to the first key of E♭ Major, using only the V7 chord (here, played as a triad in inversion on its fifth) to announce the modulation.
- Bar 7: V7/V\* in bar 7 is not a “real” modulation, but only a transient, temporary modulation (a *tonal change*). V7/V is a secondary dominant<sup>2</sup>.
- The parent scale-line indicates the modulations.

<sup>1</sup> © Metro-Goldwyn-Mayer Inc. 1934 (renewed 1961)

<sup>2</sup> See Secondary V7 Dominant Chords (page 99).

## Chord Scales in Major

Now, let's build the chord scales for all the diatonic chords, i.e. adding the super structure (tensions and avoids) to the chords, but in a scaled way. To do so, every chord scale is written starting from the root of the chord<sup>1</sup>, using only the diatonic tones of the parent scale to build the chord scale. Every chord scale is named in reference to an ancient church mode, being exactly the same as this mode. The tones that are one semitone above a chord tone are avoid tones (Av). The other super structure tones are tensions (T):

The image displays six musical staves, each representing a different chord scale:

- C<sup>Δ</sup> [Ionian]**: Starting on C, the scale is C, D, E, F, G, A, B. Notes 4 (F) and 6 (A) are labeled as **Av11** and **T13** respectively.
- Dm7 [Dorian]**: Starting on D, the scale is D, E, F, G, A, B, C. Notes 1 (D), 2 (E), 4 (G), 5 (A), 6 (B), and 7 (C) are labeled as **T9**, **b3**, **T11**, **5**, **T13**, and **b7** respectively.
- Em7 [Phrygian]**: Starting on E, the scale is E, F, G, A, B, C, D. Notes 1 (E), 2 (F), 3 (G), 4 (A), 5 (B), 6 (C), and 7 (D) are labeled as **1**, **b2**, **b3**, **T11**, **5**, **Avb13**, and **b7** respectively.
- F<sup>Δ</sup> [Lydian]**: Starting on F, the scale is F, G, A, B, C, D, E. Notes 1 (F), 2 (G), 3 (A), 4 (B), 5 (C), 6 (D), and 7 (E) are labeled as **T9**, **2**, **3**, **#4**, **T#11**, **5**, **T13**, and **7** respectively.
- G7 [Mixolydian]**: Starting on G, the scale is G, A, B, C, D, E, F. Notes 1 (G), 2 (A), 3 (B), 4 (C), 5 (D), 6 (E), and 7 (F) are labeled as **1**, **2**, **3**, **Av11**, **5**, **T13**, and **b7** respectively.
- Am7 [Aeolian]**: Starting on A, the scale is A, B, C, D, E, F, G. Notes 1 (A), 2 (B), 3 (C), 4 (D), 5 (E), 6 (F), and 7 (G) are labeled as **T9**, **2**, **b3**, **T11**, **5**, **Avb13**, and **b7** respectively.
- Bm7**♭**5 [Locrian]**: Starting on B, the scale is B, C, D, E, F, G, A. Notes 1 (B), 2 (C), 3 (D), 4 (E), 5 (F), 6 (G), and 7 (A) are labeled as **1**, **b2**, **b3**, **T11**, **b5**, **Tb13**, and **b7** respectively.

Note that the avoid tones are always:

- The 4<sup>th</sup> degree of the tonality (F) *on all Tonic chords*
- The 1<sup>st</sup> degree of the tonality (C) *on all Dominant chords ...*  
... and on the Tonic III<sup>m</sup>7 (see further)
- Both Subdominant chords have no avoids.

### Natural Scales

All these chord scales are “natural” scales (modes), meaning that they can all be played on any diatonic instrument. A diatonic instrument is an instrument that can play in only one 7-tone tonality (most harmonica’s or mouth harps, some accordions, most bagpipes ...). A good – but, admittedly, slightly absurd – example of a diatonic instrument would be “a piano without the black keys”.

<sup>1</sup> In some theory books, supporting this idea, you might find names like [Major – mode I] meaning: the Major scale starting from the 1<sup>st</sup> degree; [Major – mode II] meaning: the Major scale starting from the 2<sup>nd</sup> degree; [Major – mode III] meaning: the Major scale starting from the 3<sup>rd</sup> degree; and so on ... This method will be handy for chord scales that are too “strange” to name in reference to existing modes.

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## CHARACTERISTICS OF THE CHORD SCALES

### I<sup>Δ</sup> [Ionian]

The chord scale for I<sup>Δ</sup> (C<sup>Δ</sup>) is the *Ionian* scale.

The Ionian scale is exactly the same as the Major scale.

[Ionian] means: Δ-chord with available tensions 9 and 13 – 11 is avoid.

The *characteristic tone*<sup>1</sup> of the [Ionian] *mode* (color) is

**Av11** by opposition to the [Lydian] mode with T#11

### IIm7 [Dorian]

The chord scale for II<sup>m</sup>7 (Dm7) is the *Dorian* scale.

[Dorian] means: m7-chord with available tensions 9, 11 and 13\* – no avoids.

The characteristic tone of the [Dorian] mode is

**T13** by opposition to the [Aeolian] mode with Avb13

\* T13 is often said to be avoid on the II<sup>m</sup>7-chord, not because of the “semitone above chord tone rule”, but because T13, together with b3 of the chord, forms the tritone of the tonality.

Chords that include this tritone are Dominant. Hence, by playing T13 on the II<sup>m</sup>7-chord, one tends to shift its originally Subdominant function to a Dominant function, ending up with an unclear function.

This is definitely true for a [Dorian] II<sup>m</sup>7. Though, sometimes T13 can sound OK, better, *T13 sounds typically Dorian* (modal option). When in doubt, use your ear and personal taste. Moreover, we will encounter other [Dorian] chords (than II<sup>m</sup>7) that, without any doubt, have 13 both as an available tension *and* as a typical Dorian color option.

#### ***Important note:***

This caveat – allowing, or not, chords to include certain tensions, and at the same time tending to shift their original function, is something you'll often need to take into consideration when choosing this or that chord scale for a particular chord. You'll often need to make the choice between a *clear functional sound of the chord*, necessary in *functional harmony*, and the possible *color of the mode*, a modal non (necessary) functional option. It's all really a matter of personal taste. But, be aware that if you mix too many “colors” in your chords at the same time, you might end up with chords that lose their functionality and with a “vague color of grey”.

### III<sup>m</sup>7 [Phrygian]

The chord scale for III<sup>m</sup>7 (Em7) is the Phrygian scale.

[Phrygian] means: m7-chord with available tension 11 – b9 and b13 are avoid.

The characteristic tone of the [Phrygian] mode is

**Avb9** by opposition to the [Aeolian] mode with T9

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<sup>1</sup> The characteristic tone of a mode will be most important for Modal Non-Functional Harmony (page 249). See the last part of this book, section Characteristic Tone on page 250. For now, it's useful to consider it as a typical *target tone* to play in your melodies and improvisations, provided it is *not* an avoid tone (though, an avoid tone can be a *characteristic approach* tone to the chord tone just below).

It's not rare to encounter the III<sup>m</sup>7 chord on a score with its *avoid*  $\flat 13$  in the melody. That actually is – or should be (= it sounds like) – a I $^{\Delta 9}$  chord inversed on its third (I $^{\Delta 9}/3$  or C $^{\Delta 9}/E$ ).

## **IV $^{\Delta}$ [Lydian]**

The chord scale for IV $^{\Delta}$  (F $^{\Delta}$ ) is the Lydian scale.

[Lydian] means:  $\Delta$ -chord with available tensions 9, #11\* and 13 – no avoids.

The characteristic tone of the [Lydian] mode is

**T#11** by opposition to the [Ionian] mode with Av11

\* T#11 is *never* said to be avoid on the IV $^{\Delta}$ -chord, though, the same remark *could*, and *should*, apply as with II<sup>m</sup>7: T#11 forms the tritone with the root of the chord, tending to shift its originally Subdominant function to a Dominant function. But tension #11 is *the* characteristic tone of the Lydian mode, and therefore this tension is often added to the IV $^{\Delta}$  [Lydian].

## **V7 [Mixolydian]**

The chord scale for V7 (G7) is the Mixolydian scale.

[Mixolydian] means: 7-chord with available tensions 9 and 13 – 11 is avoid (or sus4).<sup>1</sup>

The characteristic tone of the [Mixolydian] mode is

**$\flat 7$**  by opposition to the [Ionian] mode with 7, and ...

Another characteristic tone of the [Mixolydian] mode is

**Av11** by opposition to the [Lydian $\flat 7$ ] mode with T#11, which we'll learn about later<sup>2</sup>

## **VI<sup>m</sup>7 [Aeolian]**

The chord scale for VI<sup>m</sup>7 (Am7) is the Aeolian scale.

The Aeolian scale is exactly the same as the natural minor scale.

[Aeolian] means: m<sup>7</sup> with available tensions 9 and 11 –  $\flat 13$  is avoid

The characteristic tone of the [Aeolian] mode is

**Av $\flat 13$**  by opposition to the [Dorian] mode with T13.

## **VII<sup>m</sup>7 $\flat 5$ [Locrian]**

The chord scale for VII<sup>m</sup>7 $\flat 5$  (Bm7 $\flat 5$ ) is the Locrian scale.

[Locrian] means: m7 $\flat 5$  with available tensions 11 and  $\flat 13$  –  $\flat 9$  is avoid.

The characteristic tone of the [Locrian] mode is

**$\flat 5$**  by opposition to the [Phrygian] mode with a perfect 5<sup>th</sup>

### ***Remember the order of the chord scales in the Major parent scale:***

[Ionian] – [Dorian] – [Phrygian] – [Lydian] – [Mixolydian] – [Aeolian] – [Locrian]

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<sup>1</sup> See further [The V7sus4 Chord](#) (page 85).

<sup>2</sup> See [The Four “Lydian” Dominants](#) (page 130).



## PARENT SCALES AND CHORD SCALES IN ANALYSIS

**Blue Moon** - Richard Rodgers (1902 - 1979)

**A**

Harmonic analysis for section A:

- Chord progression: E<sup>b</sup>Δ, Cm<sup>7</sup>, Fm<sup>7</sup>, B<sup>b7</sup>, E<sup>b</sup>Δ, Cm<sup>7</sup>, Fm<sup>7</sup>, B<sup>b7</sup>.
- Chord Scales: I<sup>Δ</sup> [Ion], VIm<sup>7</sup> [Aeol], IIIm<sup>7</sup> [Dor], V<sup>7</sup> [Mixo].
- Parent Scale: E<sup>b</sup>Major.

Continuation of harmonic analysis for section A:

- Chord progression: E<sup>b</sup>Δ, Cm<sup>7</sup>, Fm<sup>7</sup>, B<sup>b7sus4</sup>, E<sup>b</sup>Δ, Cm<sup>7</sup>, Fm<sup>7</sup>, B<sup>b7</sup>.
- Chord Scales: I<sup>Δ</sup> [Ion], VIm<sup>7</sup> [Aeol], IIIm<sup>7</sup> [Dor], V<sup>7sus4</sup> [Mixo].
- Parent Scale: E<sup>b</sup>Major.

**A2**

Continuation of harmonic analysis for section A2:

- Chord progression: E<sup>b</sup>Δ, Cm<sup>7</sup>, Fm<sup>7</sup>, B<sup>b7</sup>, Gm<sup>7</sup>, Cm<sup>7</sup>, Fm<sup>7</sup>, B<sup>b7</sup>.
- Chord Scales: I<sup>Δ</sup> [Ion], VIm<sup>7</sup> [Aeol], IIIm<sup>7</sup> [Dor], V<sup>7</sup> [Mixo].
- Parent Scale: E<sup>b</sup>Major.

Continuation of harmonic analysis for section A2:

- Chord progression: Cm<sup>7</sup>, Cm<sup>7/B<sup>b</sup></sup>, A<sup>b</sup>Δ, B<sup>b7sus4</sup>, E<sup>b</sup>Δ.
- Chord Scales: VIm<sup>7</sup> [Aeol], VIm<sup>7</sup> [Aeol], IV<sup>Δ</sup> [Lyd], V<sup>7sus4</sup> [Mixo].
- Parent Scale: E<sup>b</sup>Major.

**B**

Continuation of harmonic analysis for section B:

- Chord progression: Fm<sup>7</sup>, B<sup>b7</sup>, E<sup>b</sup>Δ, Cm<sup>7</sup>, Fm<sup>7</sup>, B<sup>b7</sup>, E<sup>b</sup>Δ.
- Chord Scales: IIIm<sup>7</sup> [Dor], V<sup>7</sup> [Mixo], I<sup>Δ</sup> [Ion], VIm<sup>7</sup> [Aeol], IIIm<sup>7</sup> [Dor], V<sup>7</sup> [Mixo], I<sup>Δ</sup> [Ion].
- Parent Scale: E<sup>b</sup>Major.

Continuation of harmonic analysis for section B:

- Chord progression: A<sup>b</sup>m<sup>7</sup>, D<sup>b7</sup>, G<sup>b</sup>Δ, B<sup>b/F</sup>, F<sup>7</sup>, B<sup>b7sus4</sup>, B<sup>b7</sup>.
- Chord Scales: IIIm<sup>7</sup> [Dor], V<sup>7</sup> [Mixo], I<sup>Δ</sup> [Ion], VIm<sup>7</sup> [Aeol], IIIm<sup>7</sup> [Dor], V<sup>7/V\*</sup> [Mixo], V<sup>7sus4</sup> [Mixo], V<sup>7</sup> [Mixo].
- Parent Scale: E<sup>b</sup>Major.

**A3**

Continuation of harmonic analysis for section A3:

- Chord progression: E<sup>b</sup>Δ, Cm<sup>7</sup>, Fm<sup>7</sup>, B<sup>b7</sup>, Gm<sup>7</sup>, Cm<sup>7</sup>, Fm<sup>7</sup>, B<sup>b7</sup>.
- Chord Scales: I<sup>Δ</sup> [Ion], VIm<sup>7</sup> [Aeol], IIIm<sup>7</sup> [Dor], V<sup>7</sup> [Mixo].
- Parent Scale: E<sup>b</sup>Major.

Continuation of harmonic analysis for section A3:

- Chord progression: Cm<sup>7</sup>, Cm<sup>7/B<sup>b</sup></sup>, A<sup>b</sup>Δ, B<sup>b7sus4</sup>, E<sup>b</sup>Δ, (Cm<sup>7</sup>, Fm<sup>7</sup>, B<sup>b7</sup>).
- Chord Scales: VIm<sup>7</sup> [Aeol], VIm<sup>7</sup> [Aeol], IV<sup>Δ</sup> [Lyd], V<sup>7sus4</sup> [Mixo].
- Parent Scale: E<sup>b</sup>Major.

END of the song (Turnaround)

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### **Notes on the analysis**

Structure of the song (chorus):

- The first A is the original harmonization.
- The second A2 is a re-harmonization using chord substitution.
- The B includes a modulation in G♭ Major (and a transient modulation\* to B♭ Major).<sup>1</sup>
- The last A3 is the same re-harmonization as A2.

The hooks and arrows:

- Every hook is a II-V cadence.
- Every arrow is an authentic cadence (or a secondary cadence\*).

The Roman numerals:

- Every chord used is translated into a functional Roman numeral, indicating the chord degree in the parent scale, giving us the opportunity to check if all chord types fit the Major diatonic series of chords, and giving us information about the function of the chord.

The chord scales:

- For every chord used, the appropriate chord scale is indicated – between [brackets] – informing us on the available tensions and avoids of the chord.

The parent scales:

- The parent scale-line indicates the modulations, providing us with information about which key should be played over this particular fragment of the song.

## **ANALYSIS OF A MINOR SONG IN ITS RELATIVE MAJOR KEY**

Before we can understand minor Functional Harmony (page 167) in depth, it's useful to see what functional harmony is all about, which possibilities it offers (Tonal Changes page 99, Dominant Chord Scales page 125, Approach Chords and Auxiliary Chords page 145, all subjects that will gradually provide an introduction to minor functional harmony).

But chances are that you'll encounter minor songs that you already wish to work on. Most Jazz musicians will avoid the sheer complexity of minor Functional Harmony by analyzing these minor songs *assuming* that they are written in the relative Major key.

The next song, ‘Autumn Leaves’ (by Joseph Kosma)<sup>2</sup>, is written in G minor. It is possible though to analyze it in B♭ Major, its relative Major key. The results of the analysis will (*almost*) be the same as if analyzed in G minor. We’ll see later how to analyze it in G minor, but for now, the relative Major analysis works just fine.

If one *assumes* that ‘Autumn Leaves’ is in B♭ Major, instead of G minor, this is how the analysis would look like:

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<sup>1</sup> \* See Secondary V7 Dominant Chords (page 99).

<sup>2</sup> © 1947, 1950, 1987 Enoch Et Cie. (renewed 1975, 1978)

**Autumn Leaves - Joseph Kosma (1905 - 1969)**

Chord Scales:  
Parent Scales: Bb major

### Notes on the analysis

Structure of the song:

- This is only the A-part of the song. It is constructed of two phrases that are similar in harmony, each ending on a Gm chord ( $VIm^{(7)}$ ), suggesting that the song is written in G minor. Both phrases differ only at the end of the melody.

The hooks and arrows:

- Every hook is a II-V cadence<sup>1</sup>.
- Every arrow is an authentic cadence (or a secondary cadence\*).

The Roman numerals:

- Every chord used is translated into a functional Roman numeral, indicating the chord degree in the *relative Major* parent scale of *Bb Major*, giving us the opportunity to check if all chord types fit the *Major diatonic series of chords*, and “giving us information about the function of the chord” (this is not *completely* true, since the song is in G minor<sup>2</sup>).

The chord scales:

- For every chord used (but one\*), the appropriate chord scale is indicated – between brackets – informing us on the available tensions and avoids of the chord.

The parent scales:

- The parent scale-line indicates the modulations (or tonal changes) one of which\* is still “unknown” for now.

<sup>1</sup> For advanced readers: There's also another “hidden” II-V cadence that I prefer not to highlight for now. (See The minor IIIm7b5-V7 Cadence on page 114.)

<sup>2</sup> E $\Delta$  in bar 4 and 12 is actually a Tonic chord in G minor, not a Subdominant chord as in B $\flat$  Major.

See the part on minor Functional Harmony (page 167), section Harmonic Functions of the Chords (page 168).

## REMEMBERING THE CHORD SCALES

### Brightness of the Modes (Chord Scales)

An excellent way to remember the chord scales, and their construction, is to order them by their brightness. The notion of brightness is a typical modal concept. Remember that playing modal is playing with colors: modes with raised degrees have a *brighter* color than modes with lowered degrees; the more lowered degrees in the scale, the *darker* the color gets.

Mode starting on	Mode Name	Mode Construction	Number of Altered Degrees	Altered Degrees in Circle of Fifths
F (IV <sup>A</sup> )	Lydian	1 – 2 – 3 – #4 – 5 – 6 – 7	1 # (1 raised)	#4 (4 <sup>th</sup> is raised)
C (I <sup>A</sup> )	Ionian	1 – 2 – 3 – 4 – 5 – 6 – 7	no altered degrees	–
G (V7)	Mixolydian	1 – 2 – 3 – 4 – 5 – 6 – b7	1 b (1 lowered)	b7 (7 <sup>th</sup> is lowered)
D (IIIm7)	Dorian	1 – 2 – b3 – 4 – 5 – 6 – b7	2 b (2 lowered)	b7 – b3
A (VIIm7)	Aeolian	1 – 2 – b3 – 4 – 5 – b6 – b7	3 b (3 lowered)	b7 – b3 – b6
E (IIIIm7)	Phrygian	1 – b2 – b3 – 4 – 5 – b6 – b7	4 b (4 lowered)	b7 – b3 – b6 – b2
B (VIIIm7 <sup>b5</sup> )	Locrian	1 – b2 – b3 – 4 – b5 – b6 – b7	5 b (5 lowered)	b7 – b3 – b6 – b2 – b5

F Lydian, C Ionian, G Mixolydian, D Dorian, A Aeolian, E Phrygian and B Locrian are all *relative scales*: they share the *same tone composition* (being all issued from the same parent scale C Major). Note that the modes, the chord scales, are now ordered following the upward circle of fifths, from *bright* to *dark*:

F            C            G            D            A            E            B  
Lydian      Ionian      Mixolydian      Dorian      Aeolian      Phrygian      Locrian

Note also that the altered degrees, *when applied to the C tonality*, are ordered following the circle of fifths. If we apply the mode constructions on all *parallel scales* of C – scales that share the *same central tone* C – C Lydian, C Ionian, C Mixolydian, and so on ... we find this:

Mode	Number of Altered Degrees	Altered Degrees ...	... in C (in Circle of Fifths)
C Lydian	1 #	#4	F#
C Ionian	–	–	–
C Mixolydian	1 b	b7	Bb
C Dorian	2 b	b7 – b3	Bb – Eb
C Aeolian	3 b	b7 – b3 – b6	Bb – Eb – Ab
C Phrygian	4 b	b7 – b3 – b6 – b2	Bb – Eb – Ab – Db
C Locrian	5 b	b7 – b3 – b6 – b2 – b5	Bb – Eb – Ab – Db – Gb

Just as we had an arithmetic translation of the key signatures for Major scales in the circle of fifths<sup>1</sup>:

C <sub>b</sub>	G <sub>b</sub>	D <sub>b</sub>	A <sub>b</sub>	E <sub>b</sub>	B <sub>b</sub>	F	C	G	D	A	E	B	F <sub>#</sub>	C <sub>#</sub>
7 <sub>b</sub>	6 <sub>b</sub>	5 <sub>b</sub>	4 <sub>b</sub>	3 <sub>b</sub>	2 <sub>b</sub>	1 <sub>b</sub>	0	1 <sub>#</sub>	2 <sub>#</sub>	3 <sub>#</sub>	4 <sub>#</sub>	5 <sub>#</sub>	6 <sub>#</sub>	7 <sub>#</sub>
-7	-6	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	+6	+7

We now also have an arithmetic translation for the number of altered degrees of every mode, in reference to its parallel Major scale:

Lydian	Ionian	Mixolydian	Dorian	Aeolian	Phrygian	Locrian
1 raised	No altered	1 lowered	2 lowered	3 lowered	4 lowered	5 lowered
+1	0	-1	-2	-3	-4	-5

## Calculating the Tone Composition of any Mode

### Relative to a known Major Scale

What's the tone composition of e.g. F<sub>#</sub> Phrygian?

- Phrygian is the mode for the IIIm7 chord of a Major scale.
- F<sub>#</sub> is the third degree of D Major.
- D Major has 2 sharps – F<sub>#</sub>, C<sub>#</sub> – in the key signature.
- Consequently, F<sub>#</sub> Phrygian has also the same 2 sharps – F<sub>#</sub>, C<sub>#</sub> – in its tone composition.

### Parallel to its own Major Scale

What's the tone composition of e.g. F<sub>#</sub> Phrygian?

- F<sub>#</sub> Major has 6 sharps in its key signature:  

1	2	3	4	5	6	7	8=1
F <sub>#</sub>	G <sub>#</sub>	A <sub>#</sub>	B	C <sub>#</sub>	D <sub>#</sub>	E <sub>#</sub>	F <sub>#</sub>
- The Phrygian mode has 4 lowered degrees:  

1	2	3	4	5	6	7	8=1
F <sub>#</sub>	G	A	B	C <sub>#</sub>	D	E	F <sub>#</sub>

Even easier, using the arithmetic translations of key signatures and altered modal degrees:

- 6 (sharps in F<sub>#</sub> Major) – 4 (lowered degrees in Phrygian) = 2 (sharps in F<sub>#</sub> Phrygian)

A few more examples: D Phrygian? E Locrian? B<sub>b</sub> Lydian?

- 2 (sharps in D Major) – 4 (lowered degrees in Phrygian) = -2 (flats in D Phrygian)
- 4 (sharps in E Major) – 5 (lowered degrees in Locrian) = -1 (flat in E Locrian)
- -2 (flats in B<sub>b</sub> Major) +1 (raised degree in Lydian) = -1 (flat in B<sub>b</sub> Lydian)

<sup>1</sup> See [Circle of Fifths](#) (page 34).

## Tetrachords used in the Chord Scales

Reminder: *The use of tetrachords for building, analyzing and playing scales is a very practical approach to scales. It allows us to narrow down the immense variety of scales we will learn about to just a few tetrachords, remembering the combination of tetrachords for each scale.*

To remember the construction of all seven chord scales we only need four tetrachords. We've already learned about three of them<sup>1</sup>, and we need a new one: the Lydian tetrachord.<sup>2</sup>

TETRACHORDS CHART			
Tetrachord name	Construction 1 = Whole Tone $\frac{1}{2}$ = semitone $1\frac{1}{2}$ = WT + st	Degree numerals	Alternate names
Major	1 – 1 – $\frac{1}{2}$	1 – 2 – 3 – 4	Ionian
minor	1 – $\frac{1}{2}$ – 1	1 – 2 – $\flat$ 3 – 4	Dorian
Phrygian	$\frac{1}{2}$ – 1 – 1	1 – $\flat$ 2 – $\flat$ 3 – 4	
Harmonic	$\frac{1}{2}$ – $1\frac{1}{2}$ – $\frac{1}{2}$	1 – $\flat$ 2 – 3 – 4	
Lydian	1 – 1 – 1	1 – 2 – 3 – $\sharp$ 4	

The modes are built with tetrachords connected by either one whole tone (WT) or one semitone (st):

LYDIAN MODE      st      IONIAN MODE      WT

C Lydian tetrachord      G Major tetrachord      C Major tetrachord      G Major tetrachord

MIXOLYDIAN MODE      WT      DORIAN MODE      WT

C Major tetrachord      G minor tetrachord      C minor tetrachord      G minor tetrachord

AEOLIAN MODE      WT      PHRYGIAN MODE      WT

C minor tetrachord      G Phrygian tetrachord      C Phrygian tetrachord      G Phrygian tetrachord

LOCRIAN MODE      st

C Phrygian tetrachord      G♭ Lydian tetrachord

Note that none of these modes have altered *tonal* degrees, with the exception of the Lydian mode with its raised 4<sup>th</sup>, and the Locrian mode with its lowered 5<sup>th</sup>.

<sup>1</sup> We've also learned the Harmonic tetrachord, not relevant here.

<sup>2</sup> Which we've actually seen in the part on Concepts Needed (page 11) – The Lydian Tetrachord (page 20).

## MASTERING THE CHORD SCALES

To become a good improviser, you must *master* all the chord scales. You must be able to play the appropriate chord scale to the right chord degree, and in all tonalities! Confronted with that fact as a young musician, I was overwhelmed by a sense of panic. I thought I'd never be able to remember, let alone *master*, all those chord scales.

Right now, you might feel the same way. At this point, we could use some kind of simplification – some tips and tricks – that allow us to *play* music, not to *think* music, and also to avoid discouragement. Playing the parent scale over *every* diatonic chord, instead of playing the appropriate chord scale to the right chord, is certainly an option. It's definitely much easier. Moreover, when you play the parent scale starting (and ending) on the ...

- |          |                     |  |
|----------|---------------------|--|
| 1, (I)   | or Major [Mode I]   | you actually play the [Ionian] chord scale     |
| 2, (II)  | or Major [Mode II]  | you actually play the [Dorian] chord scale     |
| 3, (III) | or Major [Mode III] | you actually play the [Phrygian] chord scale   |
| 4, (IV)  | or Major [Mode IV]  | you actually play the [Lydian] chord scale     |
| 5, (V)   | or Major [Mode V]   | you actually play the [Mixolydian] chord scale |
| 6, (VI)  | or Major [Mode VI]  | you actually play the [Aeolian] chord scale    |
| 7, (VII) | or Major [Mode VII] | you actually play the [Locrian] chord scale    |

So, why bother thinking chord scales? The big disadvantage of this (over-) simplification is that you lose track of the chord tones, the tensions and the avoid tones for each chord. Being able to locate chord tones, tensions and avoids is essential to a good phrasing, i.e. to a clear construction of your melody.

### Mastering the Chord Tones

Here are a few exercises<sup>1</sup> that should help you to master chord scales and melodic phrasing.

#### ***Target tone***

Select target tones for each chord, e.g. the root, 3<sup>rd</sup>, 5<sup>th</sup> or 7<sup>th</sup> of the chord, and try to hit that target, preferably for this type of exercise, on the first beat of each chord change. You should also aim at that target, playing towards the target.

Choosing the guide tones – i.e. the chord tones that are typical for the chord type and sound, the 3<sup>rd</sup> and the 7<sup>th</sup> – as target tones should give more “direction” to your phrasing.

#### ***Broken chords***

Play broken chords, i.e. the chord tones only, in different possible sequences, e.g. from root to 7<sup>th</sup> (1 – 3 – 5 – 7), or from 7<sup>th</sup> to root (7 – 5 – 3 – 1), or any predefined, upward, downward or random order you wish.

#### ***Chord connections***

Find connections between chords and play these while practicing the previous exercises.

- **The semitone resolution**

Look for the chord tone(s) from chord X that are located only one semitone above or below – i.e. leading tones to – a chord tone from chord Y, and connect these tones at the

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<sup>1</sup> This book is a theory book, not a method for *practicing* improvisation. The proposed exercises are just a few general ideas that should give you a lead on how to put the theory into practice. There are good books for *practicing* improvisation (see [Sources](#) on page 272).

chord change. The semitone resolution is a strong melodic connection, the best way to hear the chord change.

- **The whole tone resolution**

This works just like the semitone resolution above, but the melodic connection is not as strong.

- **The common tones**

Which chord tones are common to two different chords?

These can be held, or repeated, over the chord change. Also, since common tones don't need to be resolved in the new chord, you can jump from them to any other chord tone of the new chord.

## ***Comping***

Musicians with an instrument that can play full chords (pianists, guitarists, accordionists ...) should always practice the chord accompaniment (*comping*) to a song, not just with *tabs* (guitar) or *chord button* (accordion), but with attention to the chord composition (the tones that form the chord). Guitarists can try to make up new tabs to a chord. Accordionists can play the chords with the right hand instead of playing them with the left hand.

## **Mastering the Tensions**

Repeat the above-mentioned exercises but now concentrating on the tensions only, or adding the tensions to the chord tones. Here are a few general rules for tensions that you can use as a starting-kit:

A dominant chord (V7) can take *any* tension<sup>1</sup>, except 11 (avoid), but ...

- It's either 9 or  $\flat 9$ <sup>2</sup> – 11 or  $\sharp 11$  – 13 or  $\flat 13$   
(the *natural* tension or the *altered* tension)
- Avoid 11 *can* actually be part of the chord, but then the Major 3<sup>rd</sup> is left out of the chord (sus4 effect – see The V7sus4 Chord below on page 85)
- When playing a combination with  $\sharp 11$  and  $\flat 13$ , the 5<sup>th</sup> of the chord is (mostly) left out of the chord to avoid consecutive semitones.

For other chord types:

- Tension 9 is always available, on any chord-type ...
- Tension 11 is available only on minor (m) chords ...  
(except sus4-effect on Major chords)
- Tension  $\sharp 11$  is available only on Major seventh ( $\Delta$ ) chords ...
- Tension 13 is always available, on any chord ...  
(though, remember the caveat on the [Dorian] II<sup>m</sup>7: tritone!!)
- Tension  $\flat 13$  is available only on half-diminished (m7<sup>b5</sup>) chords ...
- ... as long as these tensions are diatonic to the parent scale<sup>3</sup>.

These rules are not comprehensive and final, but they'll help you a good way ahead when experimenting with tensions. Use your ear!

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<sup>1</sup> Even non diatonic tensions! We'll learn about this in the following parts and chapters.

<sup>2</sup>  $\flat 9$  and  $\sharp 9$  *can* be combined. But finding a good sounding chord voicing that combines both is not easy. It's *easier* to choose the one, or the other. Either way, both tensions can coexist in the chord scale.

<sup>3</sup> Except when allowing modal changes, actually allowing "new" diatonic tones, see Modal Changes (page 197).

## Playing “in” and “out”

As a pianist, I see **tensions and chord tones** as “**the hot keys**” of my instrument, all harmonically available tones, *the* actual target tones. Using (only) these tones is often called “playing in” (though *avoids* are also “in” the key, “in” the parent scale).

The **avoids and chromatic tones** are all **approach tones** to the chord tones and the tensions. Using (only) these approach tones, these non-harmonically available tones, is often called “playing out” (though *avoids* are still “in” the key, “in” the parent scale).

There are lots of creative theories about “how to play out” and then resolving “in”.<sup>1</sup> Here’s a good way to start.

## Mastering the Avoids

Select avoid tones as target tones, and teach yourself to *hear* how avoid tones need a downward semitone resolution, that avoid tones are in fact *downward leading tones* to a chord tone. Also, you’ll learn that “avoid” tones does not mean “do not play these” tones. You can actually create interesting effects with them.

You can integrate an avoid tone as a *suspension*, i.e. hitting the avoid tone together with the chord, *without* the chord tone that is a semitone below, and then resolve the avoid tone to the missing chord tone – actually *approaching* a chord tone with an avoid tone. That *suspension* effect is known to Classical composers as the *appoggiatura*. It’s not very common with most avoid tones (but you should try, it actually works!). It’s quite common though with avoid tone 11 on Major chords (sus4-effect), especially on the dominant seventh chord. (See [The V7sus4 Chord](#) below on page 85).

The suspension (*sus*) – or *appoggiatura* – was common in Classical music before the 19<sup>th</sup> century, when tensions were not yet considered as being part of the chord, and thus considered “avoid” tones anyway. Usually, the suspended tone is a chord tone held from the former chord, hence the term *suspension*, meaning “kept over the new chord for a while”, but that doesn’t need to be the case. For example:

Little Prelude in C - J.S. Bach (1685 - 1750)

sus = suspension  
res = resolution

modern' chord symbols

C      C/E      Gsus<sup>4</sup>      G      Dm<sup>11</sup>      Dm/F      Am<sup>11</sup>      Am

sus 1: the root of the former chord (C) is suspended in the new chord (G), now 4<sup>th</sup> (sus4) of G.  
res 1: the suspension (sus4) is resolved to the Major 3<sup>rd</sup> (3) of G.

sus 2: the root of the former chord (G) is suspended in the new chord (Dm), now 11 of Dm.  
res 2: the suspension (11) is resolved to the minor third (b3) of Dm.

sus 3: the root of the former chord (Dm) is suspended in the new chord (Am), now 11 of Am.  
res 3: the suspension (11) is resolved to the minor third (b3) of Am.

<sup>1</sup> Not the purpose of this book. We will mainly see “how to play in”, assuming that you consequently should be able to know “how to play out”. Books that tell you “how to play out” though come with interesting ideas that we won’t see in this book.

4 and 11 are – is – actually the same tension. Using *sus4* in the chord symbol indicates the use of an avoid tone that needs a resolution to the Major third<sup>1</sup>. Using 11 in the chord symbol indicates that this is a tension above a minor third, therefore not needing a resolution<sup>2</sup>.

### ***Chromatic approaches***

The suspended tone could also be a non-diatonic tone. Non diatonic tones are tones that are not part of the chord scale (or parent scale), they are “out”, and therefore definitely “*avoid tones*”. But using *non diatonic approaches* – mostly called *chromatic approaches* – can create some interesting effects too, and sometimes even interesting modal changes<sup>3</sup>. “Real” avoid tones are (mostly) downward leading tones towards chord tones, whereas chromatic approaches can also be, and often are, upward leading tones.

Suspended chromatic approaches are never written in the chord symbol. Sometimes though, these chromatic approaches form a so-called *approach chord* or *auxiliary chord*. We’ll learn more about these types of chords further in this book<sup>4</sup>.

### **The V7sus4 Chord**

Suspensions always need to be resolved, i.e. when they are avoid tones or chromatic approaches; when they are tensions, they don’t need a resolution<sup>5</sup>. But over time, one type of suspended chord became a “standard” chord that didn’t *need* a resolution: the dominant seventh suspended fourth chord, in short, V7sus4 (sometimes written V7sus).

The image shows two examples of musical notation. Both examples are in G major (G7sus4) and resolve to CΔ (IΔ). In example 1, the first bar shows G7sus4, followed by a measure line, then G7, another measure line, and finally CΔ. A curved arrow points from the 11th note of the G7sus4 chord to the 3rd note of the CΔ chord. In example 2, the first bar shows V7sus4, followed by a measure line, then CΔ. A curved arrow points from the 11th note of the V7sus4 chord to the 3rd note of the CΔ chord. The notation includes a treble clef, a key signature of one sharp, and a common time signature.

e.g. 1: the avoid 11, actually now a tension, (on top of G7sus4 in bar 1) is resolved to the 3 (Major 3<sup>rd</sup> on top of G7 in bar 2), before going to the central chord I<sup>Δ</sup> (C<sup>Δ</sup> in bar 3).

e.g. 2: there is no resolution to the Major third. Instead, the V7sus4 resolves immediately to the central chord I<sup>Δ</sup>.

<sup>1</sup> And, usually also, that does not imply the use of 7<sup>th</sup> or 9<sup>th</sup>

<sup>2</sup> And, usually also, that implies the use of b7 and 9.

<sup>3</sup> See Modal Changes (page 197).

<sup>4</sup> See Approach Chords and Auxiliary Chords (page 145).

<sup>5</sup> **sus2-chord:** This chord symbol is very often used in Pop Music, meaning the use of tension 9 (= 2) as suspended tone *replacing* the (mostly Major, sometimes minor) 3<sup>rd</sup> of the chord, and *sus* meaning that it needs a resolution towards that 3<sup>rd</sup>.

T9 is actually *never* an avoid tone, but *always* an available tension, and therefore not needing a resolution. It sounds perfectly well together *with* the (Major or minor) 3<sup>rd</sup>. This chord symbol (e.g. Csus2) is misleading and should best be avoided altogether. If you want to announce the use of T9 – i.e. without the 7<sup>th</sup> – a good alternative symbol is C2, i.e. without the *sus*. Remember though that a chord symbol should give information about the *function* of the chord, not about its *voicing* or *density*. C2 is not a very informative symbol, because it doesn’t say which 7<sup>th</sup>, Major or minor (C<sup>Δ</sup>9 or C9?), fits to the chord.

V7sus4-chords are very common and are *functional*. They are “weakened” dominants **SD(D)** when resolving to I<sup>A</sup>, justifying the highlighting with an arrow (see example above), or subdominant **SD** when resolving to any other chord. The appropriate chord scale *stays* [Mixolydian], both for V7 and for V7sus4.

V7-chords are dominant chords because they are built on the dominant degree, but also, because they include the tritone, 4 and 7 of the parent scale (F and B in the example above). V7sus4 does not include the tritone, since C is used in the chord instead of B. That means that the V7sus4 loses one of the main features required for dominant chords, hence SD(D).

The V7sus4 chord is very often written as a hybrid chord, looking like a “complete cadence played in only one chord”:

- **IIIm7 on V**    or Dm7/G       root in the bass – no 3 – 5 –  $\flat$ 7 – T9 – T11
- **IV<sup>A</sup> on V**    or F<sup>A</sup>/G       root in the bass – no 3 – no 5 –  $\flat$ 7 – T9 – T11 – T13

## Melodic Analysis

A melody is *anchored* in the chords that are played below (vertical analysis). It is usually built out of the target tones – the actual chord tones and tensions – that can be approached by avoids or chromatic approaches. Therefore, it’s useful to analyze a melody in reference to the chords – and the chord scales – to understand the full extent of the chord scale concept.

You’ll find a melodic analysis of the melody of the A-part of ‘Blue Moon’ below, followed by a possible “improvised” solo.

Remember:

We’ve seen in the introduction of the 12-Tone Tonality (page 15) that analyzing a particular scale degree as a *functional degree* or merely as a *chromatic approach tone* can be subject to discussion; because it can depend on the musical context and phrasing that can be interpreted in different ways.

The same can actually be said for melodic analysis: whether a particular tone is a *tension* or merely a *diatonic or chromatic approach or passage tone* can also be subject to discussion.

In the analysis below, I’ll analyze the melody tones as being either chord tones 1, 3, 5, 7 (and altered variants), or tensions 9, 11, 13 (and altered variants), or avoids (Av $\flat$ 9, Av11, Av $\flat$ 13), or approach tones (ap $\sharp$ 4, etc ...).

*Example of melodic analysis on ‘Blue Moon’*

**Blue Moon (A part) - Richard Rodgers (1902 - 1979)**

Harmonic analysis for the first section:

- Measure 1: B♭7 (E♭Δ), Cm<sup>7</sup>, Fm<sup>7</sup>. Chords: [Mixo], [Ion], [Aeol]. Tones: 1, 5, b7.
- Measure 2: B♭7 (E♭Δ), Cm<sup>7</sup>, Fm<sup>7</sup>. Chords: [Dor], [Mixo], [Ion], [Aeol]. Tones: b3, 11, 5, b7, 5.
- Measure 3: E♭Δ, Cm<sup>7</sup>, Fm<sup>7</sup>. Chords: [Ion], [Aeol]. Tones: b7, 1, 9, b3, 13, 5, 3.
- Measure 4: E♭Δ, Cm<sup>7</sup>, Fm<sup>7</sup>. Chords: [Dor], [Mixo]. Tones: 1, 9, b3, 13, 5, 3.

Harmonic analysis for the second section:

- Measure 1: E♭Δ, Cm<sup>7</sup>, Fm<sup>7</sup>. Chords: [Ion], [Aeol]. Tones: 5, b7, 1, 9, 11.
- Measure 2: B♭7sus<sup>4</sup>, E♭Δ, Cm<sup>7</sup>, Fm<sup>7</sup>. Chords: [Mixo], [Ion], [Aeol]. Tones: 1, b3, 5, 13, b7, 9.
- Measure 3: solo Fm<sup>7</sup>, B♭7. Chords: [Dor], [Mixo]. Tones: 5, 13, b7, 9, 5, 13, b7, 9.

Harmonic analysis for the third section:

- Measure 1: E♭Δ, Cm<sup>7</sup>, Fm<sup>7</sup>. Chords: [Ion], [Aeol]. Tones: 5, 3, Av11, 13, 11, b3.
- Measure 2: B♭7, E♭Δ, Cm<sup>7</sup>, Fm<sup>7</sup>. Chords: [Dor], [Mixo]. Tones: b3, b7, 1, b7, 3, 9.
- Measure 3: E♭Δ, Cm<sup>7</sup>, Fm<sup>7</sup>, B♭7. Chords: [Ion], [Aeol]. Tones: 5, ap#6, 7, 9, 9, b3, 5, b7.
- Measure 4: Cm<sup>7</sup>, Fm<sup>7</sup>, B♭7. Chords: [Dor], [Mixo]. Tones: 13, 5, ap#4, 5, 13, 5.

Harmonic analysis for the fourth section:

- Measure 1: E♭Δ, Cm<sup>7</sup>, Fm<sup>7</sup>. Chords: [Ion], [Aeol]. Tones: 7, 1, ap#2, 3, ap6, b7, 1, 9.
- Measure 2: B♭7sus<sup>4</sup>, E♭Δ, Cm<sup>7</sup>, Fm<sup>7</sup>. Chords: [Dor], [Mixo]. Tones: b7, 13, 9, 1, 11, 5.
- Measure 3: E♭Δ, Cm<sup>7</sup>, Fm<sup>7</sup>, B♭7. Chords: [Ion], [Aeol], [Dor], [Mixo]. Tones: 3, b3, 5, b7, 13, 5.

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## Using the Pentatonic Scales

### REPLACING THE CHORD SCALES BY PENTATONIC SCALES

A very popular simplification for chord scales is the use of pentatonic scales to replace the chord scales. Remember that pentatonic scales are scales where some tones are left out.

The Major pentatonic scale is a Major scale without 4<sup>th</sup> (11<sup>th</sup>) and 7<sup>th</sup> degree. Therefore, you can use the Major pentatonic scale (with the ♭3 blue note for a bluesy sound, or without) to replace any *Major* chord scale (i.e. a chord scale with a Major 3<sup>rd</sup>):

- [Ionian] scale      1 2 3 5 6      leaving out      7 and Av11
- [Lydian] scale      1 2 3 5 6      leaving out      7 and T♯11
- [Mixolydian] scale      1 2 3 5 6      leaving out      ♭7 and Av11

The minor pentatonic scale is a minor scale without 2<sup>nd</sup> (9<sup>th</sup>) and 6<sup>th</sup> (13<sup>th</sup>) degree. Therefore, you can use the minor pentatonic scale (with the ♯4 blue note for a bluesy sound, or without) to replace any *minor* chord scale (i.e. a chord scale with a minor 3<sup>rd</sup>):

- [Dorian] scale      1 ♭3 4 5 ♭7      leaving out      T9 and T13
- [Phrygian] scale      1 ♭3 4 5 ♭7      leaving out      Av♭9 and Av♭13
- [Aeolian] scale      1 ♭3 4 5 ♭7      leaving out      T9 and Av♭13

To replace the [Locrian] scale you'll need to play the Blues Scale, i.e. the minor pentatonic **with** the ♯4 (or ♭5) blue note, but *leaving out* the *perfect* fifth. This way you'll have the

- [Locrian] scale      1 ♭3 4 ♭5 ♭7      leaving out      Av♭9 and T♭13,  
with ♭5 (blue note) instead of 5

Conclusion:

The Major pentatonic scale (with or without blue note) can replace any Major chord scale. The minor pentatonic scale (with or without blue note) can replace any minor chord scale. Pay attention though when replacing the [Locrian] chord scale!

### DISPLACING PENTATONIC SCALES

By displacing the pentatonic scale you can highlight other degrees (than 1 2 3 5 6 in Major and 1 ♭3 4 5 ♭7 in minor) of the chord scale you want to replace. This is by no means a simplification like above; indeed, you'll need a thorough knowledge of the chord scales, and their available tensions and avoids, to know exactly what you're doing. Here are examples of displaced pentatonic scales:

- [D Major pentatonic] ([DMaj5t]) can replace the C<sup>Δ</sup> [Lydian] chord scale

[DMaj5t]

Cmaj7 [Lydian]

Highlighting:

[Lydian]      T9, 3, T♯11, T13, 7

Leaving out:

1, 5

The next example is not really new, it just gives you an idea on how to think in relative pentatonic scales:

- [E♭Maj5t] (being relative to [Cm5t]) can replace Cm7 [Dorian], [Aeolian] or [Phrygian]

[E♭Maj5t]

1 (b2) (2) b3 4 5 (b6) (6) b7  
Cm7 [Dorian] or [Aeolian] or [Phrygian]

Highlighting:

[Dorian] 1, b3, T11, 5, b7

[Aeolian] 1, b3, T11, 5, b7

[Phrygian] 1, b3, T11, 5, b7

Leaving out:

T9, T13

T9, Avb13

Avb9, Avb13

- [FMaj5t] can replace C7sus4 [Mixolydian] or Cm7 [Dorian]

[FMaj5t]

1 2 (b3) (3) 4 5 6 b7  
C7sus4 [Mixolydian] or Cm7 [Dorian]

Highlighting:

[Mixolydian] 1, T9, sus4, 5, T13

[Dorian] 1, T9, T11, 5, T13

Leaving out:

Av3, b7

b3, b7

- [GMaj5t] can replace C<sup>Δ</sup> [Ionian] or [Lydian]

[GMaj5t]

(b2) 1 2 3 (b4) (4) 5 6 7  
Cmaj7 [Ionian] or [Lydian]

Highlighting:

[Ionian] T9, 3, 5, T13, 7

[Lydian] T9, 3, 5, T13, 7

Leaving out:

1, Av11

1, T#11

- [AbMaj5t] can replace Cm7<sup>b5</sup> [Locrian]

[AbMaj5t]

1 (b2) b3 4 (b5) b6 b7  
Cm7b5 [Locrian]

Highlighting:

[Locrian] 1, b3, T11, Tb13, b7

Leaving out:

Avb9, b5

- [B♭Maj5t] can replace C7sus4 [Mixolydian] or Cm7 [Dorian] or [Aeolian]

[B♭Maj5t]

**C7sus4 [Mixolydian] or Cm7 [Dorian] or [Aeolian]**

Highlighting:

[Mixolydian] 1, T9, sus4, 5, b7

[Dorian] 1, T9, T11, 5, b7

[Aeolian] 1, T9, T11, 5, b7

Leaving out:

Av3, T13

b3, T13

b3, Avb13

All the examples above are possible in Functional Harmony, where one needs to take *allowed* tensions and *avoided* avoids into account to respect the *function* of the chord.

In Modal Non-Functional Harmony<sup>1</sup> (page 249) though, there are no avoids. It's the characteristic tone (CT) of the modes that plays an overall important role to provide the exact modal color to the mode. Next examples of displaced pentatonic scales are consequently also possible in 'Modal Non-Functional Harmony'.

- [D♭Maj5t] can replace Cm7 [Phrygian] or Cm7<sup>b5</sup> [Locrian]

[D♭Maj5t]

**Cm7 [Phrygian] or Cm7<sup>b5</sup> [Locrian]**

Highlighting:

[Phrygian] CTb2, b3, 4, b6, b7

[Locrian] b2, b3, 4, b6, b7

Leaving out:

1, 5

1, CTb5

- [FMaj5t] can replace C<sup>Δ</sup> [Ionian]

[FMaj5t]

**Cmaj7 [Ionian]**

Highlighting:

[Ionian] 1, 2, CT4, 5, 6

Leaving out:

3, 7

<sup>1</sup> See “Typical” Modal Voicings (page 255).

- [G♭Maj5t] can replace Cm7<sup>b5</sup> [Locrian]

[G♭Maj5t]

Cm7<sup>b5</sup> [Locrian]

Highlighting:

[Locrian]      b2, b3, CTb5, b6, b7

Leaving out:

1, 4

- [A♭Maj5t] can replace Cm7 [Aeolian] or [Phrygian]

[A♭Maj5t]

Cm7 [Aeolian] or [Phrygian]

Highlighting:

[Aeolian]      1, b3, 4, CTb6, b7

[Phrygian]      1, b3, 4, b6, b7

Leaving out:

2, 5

CTb2, 5

When we'll see more (new) chord scales (or modes) further on in this book, more "displacing combinations" will of course be possible. I won't continue to list all possibilities assuming that the idea is now understood by the reader.

Interesting to mention though is that some musicians also displace pentatonic scales to create "in-out" or "out-in" sounds, meaning that they alternate pentatonic scales that include more or less *harmonically available tones*, with pentatonic scales that include more or less *non-harmonically available tones*.



## A SHORT-CUT TO THE BLUES

The Blues is always a difficult item to fit in a book on Jazz Harmony. It should come at the very beginning of the book, because this style had (and still has) a major influence on the typical Jazz phrasing of solo's and melodies. But, at the other hand, the Blues Harmony can be at the same time very simple and very complex. It certainly doesn't fit any "common" harmonic patterns.<sup>1</sup>

The reason for this is that Blues is a collection of licks, and tricks, and riffs, and colors, all played on a basic "vamp" – i.e. a repeating musical figure or chord accompaniment that may consist of a single chord, or a sequence of chords, played in a repeated rhythm. The result of the different layers played almost always consists of a "clash" between Major and minor components. Originally, in the old country Blues, the vamp included only one, or sometimes two, chord(s). Then it gradually evolved to the still most commonly played typical 12-bar Blues sequence with the three main chords of the Major tonality, all played as 7-type chords: I7, IV7 and V7. Later, under influence of the growing complexity of the Jazz harmony, it still evolved to yet more complex vamps and chord sequences.

In this book the Blues is presented as some kind of "parallel" harmonic system – parallel to the Major Functional Harmony, for now. All along the coming chapters I'll regularly come back at it to show how Blues may have affected the Jazz harmony, or how it was itself affected by it.

To fully understand the Blues, one needs to take as much interest in the social and historical context in which this style originated as one needs to analyze its music<sup>2</sup>. The Blues is indeed as much about attitude as it is about music (in the stricter sense). Moreover, to learn how to play the Blues requires a thorough knowledge of all orally transmitted licks, tricks and riffs that are so typical to the Blues. The purpose of this book however is to strip down all music – the Blues also – of its stylistic characteristics, to understand the harmonic building stones that are used in it. That's why this part is titled '*A Short-Cut to the Blues*'. I recommend readers who might have a particular interest in the Blues to read specialized books on the subject.

## Blues Chords and Blues Scale

To summarize decades of evolution of the Blues, it's useful to imagine (the somehow typical depreciating caricature of) an older illiterate affranchised Afro-American slave in the Mississippi of the late nineteenth century, who might have received an old guitar from his former master, together with the few first quick guitar lessons involving the three main Major I, IV and V chords – typically in A Major on the guitar, with the chords A (I), D (IV) and E (V) which are very easy to play. Enjoying for the first time in his life a few spare moments of leisure, but in his still miserable existence, this man learns to play some music, all by himself, without teacher or book. He tries out the Major chords he learned from his master on his guitar, playing them on some kind of trance rhythm, and sings about his daily sorrows on an improvised melody inspired by the work songs he stills hears on the cotton fields. That typical

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<sup>1</sup> We'll see how Blues can best be described as functional music using Modal Interchange chords, or as modal non-functional music. See the last parts on Modal Changes (page 197) and on Modal Non-Functional Harmony (page 249).

<sup>2</sup> The same can of course, and should, be said of Jazz music.

Actually, all music styles are rooted in their historic and social context.

melancholic traditional African melody is based on the minor pentatonic scale, with an additional typical bluesy passage tone between the 4<sup>th</sup> and 5<sup>th</sup> degree.

The result is a “vamp” built on chords that suggest a Major parent scale (A Major), that clashes with a melody that suggest a minor parent scale. The “clash” between the  $\flat 3$ ,  $\sharp 4$  and  $\flat 7$  in the melody against 3, 4 and 7 in the harmony creates the typical Blues sound.

The minor third ( $\flat 3$ ), the augmented fourth ( $\sharp 4$ ) and the minor seventh ( $\flat 7$ ) are called **blue notes**. Over time the “blue seventh” ( $\flat 7$ ) and the “blue third” ( $\flat 3$ ) were added to the I and IV chords respectively to create the typical *functional* Blues seventh chords:

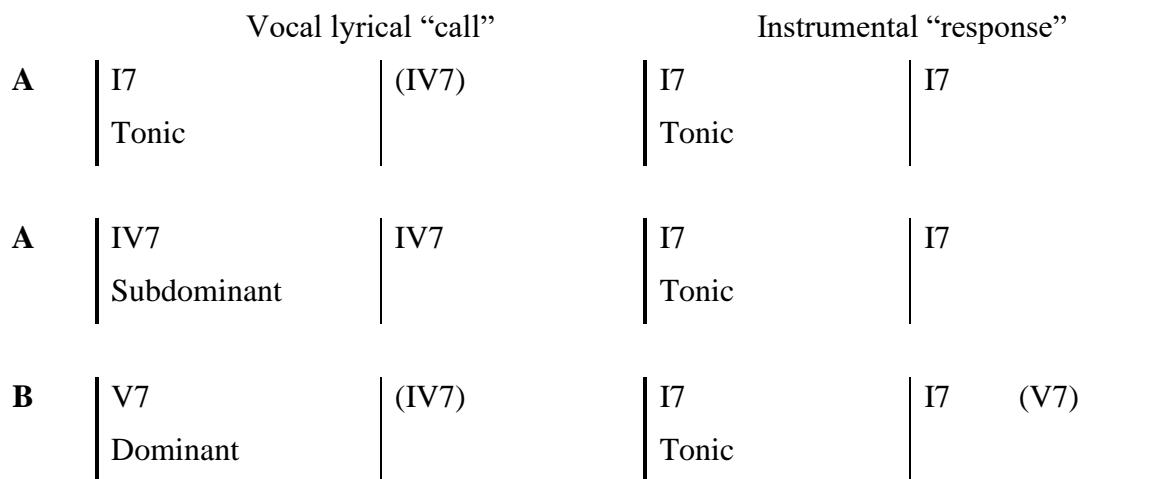
**I7** (Tonic), **IV7** (Subdominant) and **V7** (Dominant).

# Blues Structure

In the beginning of the twentieth century the Blues vamp stabilized into the so-called typical 12-bar Blues, a “Chorus” existing of 3 phrases (AAB) of 4 bars each.

Each phrase alternates a 2-bar short vocal lyrical “call”, sometimes fixed, sometimes improvised, with a 2-bar, usually improvised, short instrumental “response”.

The first lyrical call is sung on the Tonic chord (I7) on the first phrase, on the Subdominant chord (IV7) on the second phrase, and on the Dominant chord (V7) on the third phrase (that later evolved into the plagal cadence V7 – IV7). The instrumental responses are all on the Tonic chord.



The chords between brackets – IV7 in bar 2 and in bar 10, and V7 (as turnaround) in bar 12 – are very frequently used variations on the original 12-bar Blues format. Traditionally, after two lyrical choruses, the instrument players start to alternate improvised solos of (mostly) two choruses each, often punctuated by breaks.

There are, of course, also other possible Blues structures, but this 12-bar chorus is definitely the most frequently played, and has been the format for hits – Blues, Rhythm & Blues, Rock & Roll, Pop, and other styles – all over the world.

## Improvising on Blues

### TRADITIONAL BLUES

In traditional Blues, the basic Blues Scale<sup>1</sup> – the minor pentatonic with the added ♯4 – is used throughout the whole chorus to improvise both vocal and instrumental parts, with the resulting clashes between blue notes (and avoid tones) and chords. To smoothen up these clashes, Blues musicians (typically guitarists) and singers bend<sup>2</sup> the blue notes towards the “regular” diatonic chord tones, depending on which chords they are playing, only to let them slide<sup>3</sup> back again into blue notes.

Blues chords in C    Blues scale degree    bent towards scale degree    = chord degree

<b>C7</b>	1	(no need)	(= root)
	♭3	→ 3	→ Major third
	4	→ 3	→ Major third
	4	→ ♯4 <sup>4</sup>	→ augmented fourth
	♯4	→ 5	→ perfect fifth
	5	(no need)	(= perfect fifth)
	♭7	(no need)	(= minor seventh)
<b>F7</b>	1	(no need)	(= perfect fifth)
	♭3	(no need)	(= minor seventh)
	4	(no need)	(= root)
	♯4	→ 4	→ root
	♯4	→ 5	→ Major ninth
	5	(no need)	(= Major ninth)
	♭7	→ 6	→ Major third
<b>G7</b>	1	→ 7	→ Major third
	♭3	→ 2	→ perfect fifth
	4	(no need)	(= minor seventh)
	♯4	→ 4	→ minor seventh
	♯4	→ 5	→ root
	5	(no need)	(= root)
	♭7	→ 7	→ Major third

<sup>1</sup> See [Blues Scales](#) (page 46).

<sup>2</sup> Blue notes are sometimes called “bent notes”.

<sup>3</sup> The “slide” guitar, with the use of a bottle neck, provides an easy way not only for bending the blue notes – in melody and solo – but often also for bending the whole chord – in comping the Blues.

<sup>4</sup> ♯4 here is considered stable, as the most typical blue note. Remember also [The Lydian Concept](#) (page 20).

## BLUES “CHORD SCALES”

When the Blues became a piano style – with the successful Boogie Woogie style – the improvisation style had to be adjusted because pianists cannot bend their notes. So, pianists introduced the Major Blues scales – i.e. the Major pentatonic with the added  $\flat 3$  – as “chord scales” to the Blues chords.<sup>1</sup>

C7                      F7                      G7  
 1 2 b3 3 5 6 8=1    1 2 b3 3 5 6 8=1    1 2 b3 3 5 6 8=1  
 C Major pentatonic + blue note b3    F Major pentatonic + blue note b3    G Major pentatonic + blue note b3

They also came up with “regular” Blues scales – i.e. the minor pentatonic with the added ♯4 – for a more bluesy sound, played as “chord scales” – i.e. transposed to the chord’s root – in which the minor third is, as it should, regularly solved – “bent” if you want – towards the Major third of the chord. That way, the Blues scale includes all the chord tones.

**C7**                    **F7**                    **G7**  
 1   b3   3   4   #4   5   b7   8=1      1   b3   3   4   #4   5   b7   8=1      1   b3   3   4   #4   5   b7   8=1  
**C Blues + Major third**      **F Blues + Major third**      **G Blues + Major third**

To enhance the hybrid Major-minor sound of the blues, the chords are also sometimes played C7<sup>#9</sup>, F7<sup>#9</sup> and G7<sup>#9</sup>, including both their Major thirds AND their blue third ( $\#9 = \flat3$ ) in more recent Blues styles – e.g. Funk Blues, Jazz Blues.

This resulted in a multiple options system, choosing either to stick to the traditional sound of the original (C) Blues scale, or opting for the better adjusted Major Blues “chord scales”, or yet opting for the more bluesy sound of the Blues “chord scales”.

The abbreviations below stand for

- **Blues** represents the traditional Blues scale (minor pentatonic with added 3 and #4)
  - **Maj.Blue**s represents the Major Blues scale (Major pentatonic with added b3)

Blues chords in C	Optional scales
<b>C7</b>	C Blues – [C Maj. Blues]
<b>F7</b>	C Blues – [F Maj. Blues] – [F Blues]
<b>G7</b>	C Blues – [G Maj. Blues] – [G Blues]

<sup>1</sup> See Replacing the Chord Scales by Pentatonic Scales (page 88).

This finally led to the concept of *Extended Blues Scale*, as “chord scale”, which is a mix of both the Blues scale and the Major pentatonic scale:

**C7**

C extended Blues scale

**F7**

F extended Blues scale

**G7**

G extended Blues scale

This [extended Blues] scale can also be seen as the [Mixolydian]<sup>1</sup> scale with the added blue notes  $b3$  and  $\#4$ . This scale though, with its 9 different tones<sup>2</sup>, doesn't provide an as easy, or clearly bluesy, phrasing as the (“pentatonic”) [Blues] or [Major Blues] scales do.

### **Remember**

- There's no (one) parent scale to the Blues chords, since the original Major I and IV chords were “enriched” with the blue notes  $b7$  and  $b3$  respectively. We'll learn later that there is a possible modal approach to the Blues, providing “real” parent scales to these chords.<sup>3</sup>
- The traditional improvising scale is the “main” Blues scale (i.e. of I) throughout the whole chorus, i.e. over every Blues chord. Though there's always the possibility to use both the [Major Blues] scale and/or the [Blues] scale (enriched with the Major third), or possibly a mix of both called the [Extended Blues] scale, as “chord scales”.

<sup>1</sup> We'll see in the part on Modal Changes (page 197) how this leads to A Modal Approach to the Blues (page 222).

<sup>2</sup> The only three tones missing for a full chromatic scale (or 12-tone tonality) are  $b2$ ,  $b6$  and 7.

<sup>3</sup> See A Modal Approach to the Blues (page 222).



## TONAL CHANGES

I use the terms *Tonal Change* as opposed to *Modulation*. Both concepts mean “a shift towards another central tone”, but a Tonal Change is only a transient, temporary, modulation to a *secondary* central tone that quickly falls back into the main key of the song, while a “real” Modulation is supposed to last, at least for a while, in another new key. Tonal changes are much more common than “real” modulations in Jazz standards.

But the terms *Tonal Changes* are also opposed to *Modal Changes*. A Modal Change does not shift towards another central tone, a Tonal Change does.

## Secondary V7 Dominant Chords

Tonal changes always occur with *Secondary Dominants*, or Secondary V7-chords. The “rule” with secondary dominants is really quite simple:

Every chord used in a song can be introduced by its own dominant chord.

Example: In a song written in C Major, the diatonic chord Dm7 (II<sup>m</sup>7) is used. To introduce this chord, i.e. to “target” this chord (arrow!), the composer uses the (secondary) dominant of D (notation in analysis: V7/II, read **V7 of II**) which is the A7-chord (A is the V<sup>th</sup> degree of D).

Let’s list all the possible secondary dominants for a song in C Major:

(G7 → C <sup>Δ</sup> )	(V7 → I <sup>Δ</sup> )	(“primary” <sup>1</sup> dominant)
A7 → Dm7	V7/II → II <sup>m</sup> 7	secondary dominant of D (II)
B7 → Em7	V7/III → III <sup>m</sup> 7	secondary dominant of E (III)
C7 → F <sup>Δ</sup>	V7/IV → IV <sup>Δ</sup>	secondary dominant of F (IV)
D7 → G7	V7/V → V7	secondary dominant of G (V) <sup>2</sup>
E7 → Am7	V7/VI → VI <sup>m</sup> 7	secondary dominant of A (VI)
F#7 → Bm7 <sup>b5</sup>	V7/VII → VII <sup>m</sup> 7 <sup>b5</sup>	secondary dominant of B (VII)

All these Secondary Dominant Chords are borrowed from the key of their target chords, hence they are *Tonal Changes* shifting towards *another* central tone than 1 (or central chord I<sup>Δ</sup>).

But all *target* chords are – and mostly stay<sup>3</sup> – diatonic chords. Therefore, there’s no real modulation.

<sup>1</sup> I’ll always include this “primary” dominant to have a complete list of all possible dominants and cadences.

<sup>2</sup> The “dominant of the dominant” is often called the *double dominant*.

<sup>3</sup> See further Tonal Changes on Diatonic Chords (page 105).

## CHORD SCALES FOR SECONDARY DOMINANTS

### Residual Tones

To determine what chord scales can be used on secondary dominants, one good method<sup>1</sup> – i.e. the method that fits the best a “traditional” or “classical” ear – is what I call the “*residual tones method*”. The secondary dominant is not exactly a real modulation. Therefore, there is still a link to the main key of the song. The *residual tones* are tones in between the chord tones of the secondary dominant, tones that are still diatonic to the main key of the song. They are *residual*, meaning they still “linger on” from the main key of the song, and therefore they still sound “right” in the ear.

Example: Let’s take the V7/II in the key of C Major – A7.

The chord tones are: A                    C#                    E                    G

The residual tones, in between the chord tones, are diatonic to C Major:

A      B      C#      D      E      F      G

The chord scale is: 1      T9      3      Av11      5      Tb13      b7 = [Mixolydian<sup>b13</sup>]

Let’s list all the possible chord scales for secondary dominants in C Major, using the residual tones method, introducing two new chord scale that are variants of the Mixolydian scale:

- the [Mixolydian<sup>b13</sup>] scale (see example above)
- the [Mixolydian<sup>b9/b13</sup>] better known as the [Spanish Phrygian] scale

<sup>1</sup> We’ll see later that there are actually multiple options for (secondary) dominant chord scales. This is just a start. See Dominant Chord Scales (page 125).

### **Important notes**

- $\flat 9$  and  $\flat 13$  are available *tensions* on dominant chords, not avoids.
- All dominant chord scales that target a Major chord – i.e. the primary V7/I, and the secondary V7/IV and V7/V – are [Mixolydian] scales: they include T9 and T13, and Av11 (sometimes written V13 on the score).
- Most dominant chord scales that target a minor chord – i.e. V7/III, V7/VI and V7/VII – are [Spanish Phrygian] scales: they include T $\flat$ 9 and T $\flat$ 13, and Av11 (sometimes written V7 $^{\flat 9/\flat 13}$  or, more often, V7 $^{\flat 9}$  on the score).
- The dominant chord scale that targets the II $m$ 7-chord – V7/II – is a [Mixolydian $^{\flat 13}$ ] scale: it includes T9 and T $\flat$ 13, and Av11 (sometimes written V7 $^{\flat 13}$  on the score).
- All these chord scales<sup>1</sup> include the avoid 11. We'll see how this has a great influence on altered – or “Lydian” – dominants in the next part.

## PARENT SCALES FOR SECONDARY DOMINANTS

Now let's see where – i.e. from which parent scale – these secondary dominants come from.

Let's consider the V7/II [Mixolydian $^{\flat 13}$ ]. It's obvious that this dominant, including a C $\sharp$  tone, does not relate to the main key of C. But how does it relate to its target chord Dm7?

If one takes all the tones included in the chord scale [A Mixolydian $^{\flat 13}$ ] and order them starting on the D – i.e. the root of the target chord Dm7 (II $m$ 7) – this is the resulting scale:

D melodic minor

The musical staff shows the notes of D melodic minor in a specific order. The notes are: (A), (B), (C $\sharp$ ), D, E, F, G, A, B, C $\sharp$ . The staff is in common time with a treble clef. The notes are separated by vertical stems and horizontal bar lines. Below the staff, the notes are labeled with their corresponding letter names and numbers: (A), (B), (C $\sharp$ ), D (1), E (2), F (3), G (4), A (5), B (6), C $\sharp$  (7).

The V7/II is actually the Melodic-V7 of D minor, i.e. the parent scale of this secondary dominant is D Melodic minor<sup>2</sup>. This doesn't come as a complete surprise: the V7/II, a [Mixolydian $^{\flat 13}$ ] dominant targeting the minor chord II $m$ 7, is a Tonal Change to the key of D minor (Melodic).

### **Important note**

From now on, the parent scale that generates a *chord* will often be different from the (original) parent scale in which the *song* is written.

In order to stay as clear as possible I'll use the following notation standards:

Melodic–V7 [Mixo $^{\flat 13}$ ] = Parent Scale of the chord–Chord Degree [Chord Scale]

Possibly with the correct tonal change, as for the example above, Dm Melodic–V7 [Mixo $^{\flat 13}$ ] and even D Melodic–V7 [Mixo $^{\flat 13}$ ] assuming that one knows that the Melodic scale is a minor scale.

<sup>1</sup> For the build-up in tetrachords, see Dominant Chord Scales (page 125).

<sup>2</sup> See The Melodic-V9 Dominant Chord (page 180).

Now, let's take all the tones included in the V7/III chord scale [B Spanish Phrygian] and order them starting on the E – i.e. the root of the target chord Em7 (IIIm7) – this is the resulting scale:

E harmonic minor

The musical staff shows the notes of E harmonic minor. The notes are: (B), (C), (D#), E (1), F# (2), G (b3), A (4), B (5), C (b6), D# (7). The staff has a treble clef and a key signature of one sharp.

The V7/III is the Harmonic-V7 of E minor, i.e. the parent scale of this secondary dominant is E Harmonic minor.<sup>1</sup>

[Spanish Phrygian] dominants – V7/III, V7/VI and V7/VII – all targeting minor chords – IIIIm7, VIIm7 and VIIIm7<sup>5</sup> – are Tonal Changes to the (Harmonic) minor key of their target chords.

Let's take all the tones included in the V7/IV chord scale [C Mixolydian] and order them starting on the F – i.e. the root of the target chord F<sup>Δ</sup> (IV<sup>Δ</sup>) – this is the resulting scale:

F Major

The musical staff shows the notes of F Major. The notes are: (C), (D), (E), F (1), G (2), A (3), Bb (4), C (5), D (6), E (7). The staff has a treble clef and a key signature of no sharps or flats.

The V7/IV is the Major-V7 of F Major, i.e. the parent scale of this secondary dominant is F Major.<sup>2</sup>

[Mixolydian] dominants – (V7/I), V7/IV and V7/V – all targeting Major chords – (I<sup>Δ</sup>), IV<sup>Δ</sup> and V7 – are Tonal Changes to the Major key of their target chords.

To summarize:

Secondary Dominants	Chord Scale	Parent Scale (Tonal Change to)
(V7/I) – V7/IV – V7/V	[Mixolydian]	Major of target
V7/II	[Mixolydian <sup>b13</sup> ]	Melodic minor of target
V7/III – V7/VI – V7/VII	[Spanish Phrygian]	Harmonic minor of target

<sup>1</sup> See [The Harmonic-V7b9 Dominant Chord](#) (page 173).

<sup>2</sup> See [Series of Diatonic Chords in Major](#) (page 55).

## EXTENDED DOMINANTS

If *every chord used in a song can be introduced by its own dominant chord*, then (secondary) dominants can also be introduced by their own dominant. This can lead to (extreme) situations like below, called *extended dominants*:



This will affect the way we hear these dominants. The first<sup>1</sup> option for the chord scales (and parent scales) will be different than mentioned above. Let's use the residual tones method to determine the chord scales, i.e. keeping all the tones as played – and heard – in the previous chord, altering only those tones that are asked for by the new chord.

### Example 1

- Coming from a C Major context, we still hear the F#7-chord as a V7/VII, i.e. as a [Spanish Phrygian] chord. But its resolution to B7 sounds (a little) as a deceptive cadence, because the expected chord Bm7<sup>b5</sup> (VIIIm7<sup>b5</sup>) is replaced by B7 (V7/III).
- We don't hear the B7 as V7/III anymore, or the E7 as V7/VI, and so on, because of the residual tones. Gradually the chord scales brighten up, first towards [Mixolydian<sup>b13</sup>] (= Melodic minor of target), then towards [Mixolydian] (= Major of target).
- At the end, the resolution IV<sup>Δ</sup>-chord (F<sup>Δ</sup>) sounds as a modulation to F Major.

### Example 2

<sup>1</sup> Once again, we'll see later that there are multiple options for (secondary) Dominant Chord Scales (page 125).

Exactly the same happens:

- Coming from a C Major context, we still hear the B7-chord as a V7/III, i.e. as a [Spanish Phrygian] chord. But its resolution to E7 sounds deceptive, because the expected chord Em7 (III<sup>m</sup>7) is replaced by E7 (V7/VI).
- We don't hear the E7 as V7/VI anymore, or the A7 as V7/II, and so on, because of the residual tones. Gradually the chord scales brighten up, first towards [Mixolydian<sup>b13</sup>] (= Melodic minor of target), then towards [Mixolydian] (= Major of target).
- At the end, the resolution IV<sup>A</sup>-chord (F<sup>A</sup>) sounds as a modulation to F Major.

### Example 3

The diagram illustrates a harmonic sequence across four staves, connected by curved arrows indicating the progression from one chord to the next. The chords are: C<sup>A</sup>, E7, A7, D7, G7, C7, and F<sup>A</sup>. Below each staff, the corresponding chord scale is shown with note names and mode information.

- Staff 1 (C<sup>A</sup>):** Imaj7 [Ion] / C Major. Scale: 1 2 3 4 5 6 7.
- Staff 2 (E7):** V7/VI [Sp.Phr] / Am Harmonic. Scale: 1 b2 3 4 5 b6 b7.
- Staff 3 (A7):** V7/(II) [Mixo b13] / Dm Melodic. Scale: 1 2 3 4 5 b6 b7.
- Staff 4 (D7):** V7/(V) [Mixo] / G Major. Scale: 1 2 3 4 5 b6 b7.
- Staff 5 (G7):** V7/(I) [Mixo] / C Major. Scale: 1 2 3 4 5 b6 b7.
- Staff 6 (C7):** V7/(IV) [Mixo] / F Major. Scale: 1 2 3 4 5 b6 b7.
- Staff 7 (F<sup>A</sup>):** (IVmaj7) [Ion] / F Major. Scale: 1 2 3 4 5 6 7.

When starting the sequence of extended dominants on E7 (V7/VI), the same happens again. The chord scale types follow each other in the exact same order as mentioned in both previous examples (and now, also as proposed in the conclusion of the previous section): V7/VI – [Spanish Phrygian], V7/II – [Mixolydian<sup>b13</sup>], V7/V – [Mixolydian] and so on ...

### Conclusion

Extended Dominants	Type	Chord Scale (parent scale)
First dominant in sequence	V7/minor V7/II V7/Major	[Sp.Phr] (Harmonic minor of target) [Mixo <sup>b13</sup> ] (Melodic minor of target) [Mixo] (Major of target)
If preceded by [Sp.Phr] dominant		[Mixo <sup>b13</sup> ] (Melodic minor of target)
If preceded by [Mixo <sup>b13</sup> ] dominant		[Mixo] (Major of target)
If preceded by [Mixo] dominant		[Mixo] (Major of target)

## TONAL CHANGES ON DIATONIC CHORDS

As stated in the beginning of this chapter, and now also demonstrated above, all the secondary dominant chords are borrowed from the key of their target chords, hence they are *Tonal Changes* (only transient modulations) shifting towards *another* central tone than 1 (or central chord  $I^\Delta$ ). But all target chords are – and mostly stay – diatonic chords (except with extended dominants). Therefore, there's no “real” modulation.

Two, and arguably four, targeted diatonic chords though can behave differently and sound as if a modulation occurred when introduced by their dominants, even if the song quickly falls back to the main key on the following chord(s), suggesting that there's only been a Tonal Change, and no *real* modulation, after all.

### Tonal Change on $IV^\Delta$

When introduced by its dominant, due to the residual tones, the Subdominant  $IV^\Delta$  ( $F^\Delta$ ) sounds as a Tonic  $I^\Delta$ , or as if a modulation occurred towards F Major.

That is because the original central chord  $C^\Delta$  has been “transformed” into a dominant chord  $C7$  towards the subdominant chord  $F^\Delta$ , now *seemingly* the new Tonic chord. The  $B\flat$  tone of the [C Mixolydian] chord scale still sounds right, as a residual tone, to our ears when played on the target chord  $F^\Delta$ , changing its original [Lydian] chord scale into [Ionian].<sup>1</sup>

This confirms the inherent instability of the subdominant (4<sup>th</sup> degree) of the Major scale, and of the subdominant  $IV^\Delta$  diatonic chord, *wanting to become Tonic instead of the Tonic*, and doing so at the first possible opportunity.

Jazz musicians though tend to play the  $IV^\Delta$ -chord as such – i.e. as a [Lydian] subdominant chord, not allowing the “modulation” – notwithstanding the fact it has been introduced by its dominant. That is because the otherwise [Ionian] chord scale comes with an avoid 11 instead of the available tension #11 in the [Lydian] chord scale.<sup>2</sup>

Anyhow, even when played as an [Ionian] chord – i.e. allowing the modulation – the song usually falls back in the original *main* key on the following chord(s), supporting the idea that this was not a real modulation after all, but merely a *transient* modulation or Tonal Change.

<sup>1</sup> I.e. to “traditional” ears. The discovery of  $B\flat$  as the first derivative tone (see the footnotes in the beginning of this book in the chapter on Basic Concepts – Relative and Absolute Tone Names on page 11) reinforces the idea that the “easiest” modulation – or, in this chapter, we might say “the unavoidable modulation” – is the modulation towards the subdominant.

<sup>2</sup> See Avoid the Avoids (page 230).

## Tonal Change on III<sup>m</sup>

When introduced by its dominant, due to the residual tones, the (substitution) Tonic chord III<sup>m</sup>7 (Em7) sounds as a Tonic Im<sup>7</sup>, or as if a modulation occurred towards E minor. The residual F# tone of the B7 [Sp.Phr] chord scale still sounds right when played over the target chord Em7 (now Em9), changing its original [Phrygian] chord scale into [Aeolian]:

The diagram shows a musical staff in C major (G clef, no sharps or flats). It features a dominant 7th chord (B7) and a target chord (Em7). Below the staff, note numbers 1 through 7 are listed under three categories: 'Imaj7 [Ion]' (C Major), 'V7/III [Sp.Phr]' (Em Harmonic), and 'IIIIm7 [Aeo]' (Em Natural). A curved arrow points from B7 to Em7, indicating the tonal change.

If one leaves the (minor) 7<sup>th</sup> degree out of the target chord – Em – we can also hear the residual D# tone of the B7 [Sp.Phr] chord scale as a possible major 7<sup>th</sup> on the target chord (now Em<sup>A</sup>), changing its original [Phrygian] chord scale into [Harmonic]:

The diagram shows a musical staff in C major (G clef, no sharps or flats). It features a dominant 7th chord (B7) and a target chord (Em). Below the staff, note numbers 1 through 7 are listed under three categories: 'Imaj7 [Ion]' (C Major), 'V7/III [Sp.Phr]' (Em Harmonic), and 'IIIImMaj7 [Harm]' (Em Harmonic). A curved arrow points from B7 to Em, indicating the tonal change.

And if the III<sup>m</sup> is preceded by B9 [Mixo<sup>b13</sup>]<sup>1</sup> (or, less common but possible also, [Mixo]), it will sound [Dorian] when played Em7 (or Em6),

The diagram shows a musical staff in C major (G clef, no sharps or flats). It features a dominant 7th chord (B7) and a target chord (Em7). Below the staff, note numbers 1 through 7 are listed under three categories: 'Imaj7 [Ion]' (C Major), 'V7/III [Mixo b13]' (Em Melodic), and 'IIIIm7 [Dor]' (Em Dorian). A curved arrow points from B7 to Em7, indicating the tonal change.

... or even [Melodic] if we leave the (minor) 7<sup>th</sup> degree out of the target chord (now Em<sup>A</sup> or Em6).

The diagram shows a musical staff in C major (G clef, no sharps or flats). It features a dominant 7th chord (B7) and a target chord (Em). Below the staff, note numbers 1 through 7 are listed under three categories: 'Imaj7 [Ion]' (C Major), 'V7/III [Mixo b13]' (Em Melodic), and 'IIIImMaj7 [Mel]' (Em Melodic). A curved arrow points from B7 to Em, indicating the tonal change.

All four options – [Aeolian], [Harmonic], [Dorian] and [Melodic] – are actual minor parent scales<sup>2</sup>, meaning that they all sound as a modulation towards the minor key of the targeted chord. Most musicians will tend to play the III<sup>m</sup>-chord as an [Aeolian] chord when introduced by its V7-[Sp.Phr] dominant or [Dorian] when introduced by its V7-[Mixo<sup>b13</sup>] (or V7-[Mixo]) dominant. Anyhow, the song usually falls back in the original *main* key on the

<sup>1</sup> As said before, Dominant chords come with multiple optional chord scales. We'll see how that is possible in the next part on Dominant Chord Scales (page 125).

<sup>2</sup> See minor Functional Harmony (page 167).

following chord(s), supporting the idea that this was not a real modulation after all, but merely a *transient* modulation or Tonal Change.

### Tonal Change on VIm

Arguably, when introduced by its dominant, the (substitution) Tonic VIm7 [Aeolian] chord (Am7) sounds as Tonic Im7 [Aeolian] chord, or as if a modulation occurred to A minor (Natural). But, since A minor Natural is the relative minor key of C Major, meaning that they share exactly the same tones, it really depends on the performer himself how he hears the chord: as a (substitution) Tonic VIm7 – i.e. without Tonal Change – or as a Tonic Im7 – i.e. with Tonal Change.

If one hears (and allows) a Tonal Change, we end up with the same options as previously with the IIIIm-chord, depending on how we play with the 7<sup>th</sup> degree of the target chord at the one hand, and how we play with the 9<sup>th</sup> degree of its preceding dominant at the other hand:

[Aeolian]

A musical staff in G clef and common time. It shows three segments: 1. C Major (Ionian mode) with notes C, D, E, F, G, A, B. 2. V7/VI [Sp.Phr] (Am Harmonic) with notes E, G, B, D, F#, A, C. 3. VIm7 [Aeolian] (Am Natural) with notes A, C, E, G, B, D, F. An arrow points from the B note in the second segment to the A note in the third segment, indicating a tonal change.

[Harmonic] when leaving the (minor) 7<sup>th</sup> degree out of the target chord

A musical staff in G clef and common time. It shows three segments: 1. C Major (Ionian mode) with notes C, D, E, F, G, A, B. 2. V7/VI [Sp.Phr] (Am Harmonic) with notes E, G, B, D, F#, A, C. 3. VImMaj7 [Harm] (Am Harmonic) with notes A, C, E, G, B, D, F. An arrow points from the B note in the second segment to the A note in the third segment, indicating a tonal change.

[Dorian] when introduced by its V9 dominant

A musical staff in G clef and common time. It shows three segments: 1. C Major (Ionian mode) with notes C, D, E, F, G, A, B. 2. V7/VI [Mixo b13] (Am Melodic) with notes E, G, B, D, F#, A, C. 3. VIm7 [Dor] (Am Dorian) with notes A, C, E, G, B, D, F. An arrow points from the B note in the second segment to the A note in the third segment, indicating a tonal change.

[Melodic] when introduced by its V9 dominant, and leaving the (minor) 7<sup>th</sup> degree out the target chord

A musical staff in G clef and common time. It shows three segments: 1. C Major (Ionian mode) with notes C, D, E, F, G, A, B. 2. V7/VI [Mixo b13] (Am Melodic) with notes E, G, B, D, F#, A, C. 3. VImMaj7 [Mel] (Am Melodic) with notes A, C, E, G, B, D, F. An arrow points from the B note in the second segment to the A note in the third segment, indicating a tonal change.

## Tonal Change on II<sup>m</sup>

Even more arguably, when introduced by its dominant, the Subdominant II<sup>m7</sup> [Dorian] chord (Dm7) can be heard as a Tonic Im7 [Dorian] chord, or as if a modulation occurred to D minor Dorian. Since D minor Dorian is a relative minor scale of C Major, it depends on the performer himself how he hears the chord: as a Subdominant II<sup>m7</sup> (most likely) – i.e. without Tonal Change – or as a Tonic Im7 – i.e. with Tonal Change.

If one hears (and allows) a Tonal Change, we end up with the same options as previously with the III<sup>m</sup> and VI<sup>m</sup> chords, depending on how we play with the 7<sup>th</sup> degree of the chord at the one hand, and how we play with the 9<sup>th</sup> degree of its preceding dominant at the other hand:

[Dorian] when introduced by its V9 dominant

A musical staff in C Major (G clef) shows a progression from C Major to Dm Dorian. The first section is labeled "Imaj7 [Ion] C Major". The second section, indicated by an arrow, is labeled "V7/II [Mixo b13] Dm Melodic". The third section is labeled "IIm7 [Dor] Dm Dorian". The notes are numbered 1 through 7 below the staff, corresponding to the scale degrees of each mode.

[Melodic] when introduced by its V9 dominant and leaving the 7<sup>th</sup> degree out of the target chord

A musical staff in C Major (G clef) shows a progression from C Major to Dm Melodic. The first section is labeled "Imaj7 [Ion] C Major". The second section, indicated by an arrow, is labeled "V7/II [Mixo b13] Dm Melodic". The third section is labeled "IImMaj7 [Mel] Dm Melodic". The notes are numbered 1 through 7 below the staff, with the 7<sup>th</sup> degree omitted in the target chord.

[Aeolian] when introduced by its V7<sup>b9</sup> dominant

A musical staff in C Major (G clef) shows a progression from C Major to Dm Natural. The first section is labeled "Imaj7 [Ion] C Major". The second section, indicated by an arrow, is labeled "V7/II [Sp.Phr] Dm Harmonic". The third section is labeled "IIm7 [Aeol] Dm Natural". The notes are numbered 1 through 7 below the staff, with the 7<sup>th</sup> degree omitted in the target chord.

[Harmonic] when introduced by its V7<sup>b9</sup> dominant, and leaving the 7<sup>th</sup> degree out of the target chord

A musical staff in C Major (G clef) shows a progression from C Major to Dm Harmonic. The first section is labeled "Imaj7 [Ion] C Major". The second section, indicated by an arrow, is labeled "V7/II [Sp.Phr] Dm Harmonic". The third section is labeled "IImMaj7 [Harm] Dm Harmonic". The notes are numbered 1 through 7 below the staff, with the 7<sup>th</sup> degree omitted in the target chord.

## Multiple Options for Diatonic Chords

Secondary Dominants can change the way we hear the diatonic chords, as demonstrated above. For the purpose of that demonstration, to come to all the available options, we used the residual tones method, because that method follows, in our ear, a natural flow (too natural perhaps, meaning “without surprise”). Creative musicians are actually not depending on these residual tones to make their choice. The residual tones are (only) what we expect to hear, but creativity also comes with the art of surprise. You can actually “bend” the residual tones to your liking, altering them to the tone of your choice with a good musical phrasing, by choosing the right leading tones and target tones. It all comes down to what color – what chord scale – you want to give the diatonic chords (and the secondary and/or extended dominants for that matter<sup>1</sup>).

That provides us with new, multiple, options for the chord scales of diatonic chords, allowing the “transient modulation” or Tonal Change, or not. The options listed below are (more or less) in order of priority, depending of course on your personal musical ear and liking, hearing and giving in to the residual tones, or not.

When introduced by their secondary dominants ...

Diatonic Chord	Optional Chord Scales	Parent Scales	Tonal Change <sup>2</sup>	Possible Chord Symbol
IIm (Dm)	[Dorian] [Dorian] [Melodic] [Aeolian] [Harmonic]	C Major (Dm Dorian) Dm Melodic Dm Natural Dm Harmonic	NO (YES) YES YES YES	IIm7 IIm7 or IIm6 IIm <sup>Δ</sup> or IIm6 IIm7 IIm <sup>Δ</sup>
IIIIm (Em)	[Aeolian] [Dorian] [Harmonic] [Melodic] [Phrygian]	Em Natural Em Dorian Em Harmonic Em Melodic C Major	YES YES YES YES NO	IIIIm7 IIIIm7 or IIIIm6 IIIIm <sup>Δ</sup> IIIIm <sup>Δ</sup> or IIIIm6 IIIIm7
IV <sup>Δ</sup> (F <sup>Δ</sup> )	[Ion] [Lydian]	F Major C Major	YES NO	F <sup>Δ</sup> F <sup>Δ#11</sup>
VIm (Am)	[Aeolian] [Aeolian] [Dorian] [Harmonic] [Melodic]	C Major (Am Natural) Am Dorian Am Harmonic Am Melodic	NO (YES) YES YES YES	VIm7 VIm7 VIm7 or VIm6 VIm <sup>Δ</sup> VIm <sup>Δ</sup> or VIm6

Note that all the minor chords – IIm, IIIIm and VIm – in the first column are listed without 7<sup>th</sup> degree, allowing you to choose either option (m7, m<sup>Δ</sup> or m6 – see last column). This is exactly how you might encounter these chords on the score, hinting you that you have the choice between all the available chord scales.

<sup>1</sup> See next part on Dominant Chord Scales (page 125).

<sup>2</sup> Some of these Tonal Changes can also be interpreted, or heard, as just Modal Changes (page 197).

## Tonal Change on V and VII<sup>m</sup>

A Tonal Change on V, when introduced by the double dominant V7/V, becoming an [Ionian] V<sup>Δ</sup>, is sometimes possible, though rare. It's only possible when we can miss the dominant V7 – for example when V isn't followed by I<sup>Δ</sup> – and when we leave the (minor) 7<sup>th</sup> degree out of the chord.

The diagram shows a musical staff in C Major (Imaj7 [Ion], C Major). A double dominant chord, D7, is played, consisting of notes 1, 2, 3, 4, 5, 6, and 7. An arrow points from the D7 chord to the next staff, which is in G Major (Vmaj7 [Ion], G Major). The notes in G Major are 1, 2, 3, 4, 5, 6, and 7.

This type of modulation though is currently used when one wants to establish a “real” modulation – not only a “transient” modulation or Tonal Change – towards the dominant, as is (was) very common in 18<sup>th</sup> and 19<sup>th</sup> century Classical Music.

The Tonal Change on VII<sup>m</sup>, becoming VII<sup>m</sup>7, VII<sup>m</sup><sup>Δ</sup> or VII<sup>m</sup>6 – [Aeolian], [Harmonic], [Dorian] or [Melodic] – is also rare, but it happens. In this case the VII<sup>m</sup> chord needs to be played with a perfect 5<sup>th</sup> (VII<sup>m</sup>) instead of the expected ♯5 (VII<sup>m</sup>7♯5). We'll see how that possibility can be explained later, when we'll learn about Modal Changes (page 197).

The diagram consists of four vertical sections, each showing a tonal change from C Major (Imaj7 [Ion], C Major) to a different mode via a V7/VII chord.

- Top Section:** Shows a V7/VII chord (F#7) leading to Bm Harmonic (VII<sup>m</sup>7 [Aeol], Bm Natural). The notes in Bm Harmonic are 1, 2, ♭3, 4, 5, ♯6, and ♭7.
- Second Section:** Shows a V7/VII chord (F#7) leading to Bm Harmonic (VII<sup>m</sup>Maj7 [Harm], Bm Harmonic). The notes in Bm Harmonic are 1, 2, ♭3, 4, 5, ♯6, and 7.
- Third Section:** Shows a V7/VII chord (F#7) leading to Bm Melodic (VII<sup>m</sup>7 [Dor], Bm Dorian). The notes in Bm Melodic are 1, 2, ♭3, 4, 5, ♯6, and ♭7.
- Bottom Section:** Shows a V7/VII chord (F#7) leading to Bm Melodic (VII<sup>m</sup>Maj7 [Mel], Bm Melodic). The notes in Bm Melodic are 1, 2, ♭3, 4, 5, ♯6, and 7.

## ANALYSIS OF A SONG WITH SECONDARY DOMINANTS

Let's first review the B-part of 'Blue Moon'<sup>1</sup> (by Richard Rodgers)

**Harmonic Analysis:**

- Staff 1 (B-flat major):**
  - Chord: Fm<sup>7</sup> (IIm<sup>7</sup>) [Dor]
  - Chord: B<sup>b7</sup> (V<sup>7</sup>) [Mixo]
  - Chord: E<sup>bΔ</sup> (I<sup>Δ</sup>) [Ion]
  - Chord: Cm<sup>7</sup> (VIIm<sup>7</sup>) [Aeol]
  - Chord: Fm<sup>7</sup> (IIm<sup>7</sup>) [Dor]
  - Chord: B<sup>b7</sup> (V<sup>7</sup>) [Mixo]
  - Chord: E<sup>bΔ</sup> (I<sup>Δ</sup>) [Ion]
- Staff 2 (G major):**
  - Chord: A<sup>b7</sup> (IIm<sup>7</sup>) [Dor]
  - Chord: D<sup>b7</sup> (V<sup>7</sup>) [Mixo]
  - Chord: G<sup>bΔ</sup> (I<sup>Δ</sup>) [Ion]
  - Chord: B<sup>b/F</sup> (V<sup>7</sup>) [Mixo]
  - Chord: F<sup>7</sup> (V<sup>7/V\*</sup>) [Mixo]
  - Chord: B<sup>b7sus4</sup> (V<sup>7sus4</sup>) [Mixo]
  - Chord: B<sup>b7</sup> (V<sup>7</sup>) [Mixo]

V7/V\* in bar 7 is not a real modulation, but a *tonal change* towards the Major key of V (B<sup>b</sup>).

Now, let's review the "relative Major" analysis of 'Autumn Leaves'<sup>2</sup> here in B<sup>b</sup> Major (but actually in G minor).

**Autumn Leaves - Joseph Kosma (1905 - 1969)**

3

**Harmonic Analysis:**

- Staff 1:** Chord Scales: Cm<sup>7</sup> (IIm<sup>7</sup>) [Dor], F<sup>7</sup> (V<sup>7</sup>) [Mixo], B<sup>bΔ</sup> (I<sup>Δ</sup>) [Ion], E<sup>bΔ</sup> (IV<sup>Δ</sup>) [Lyd]. Parent Scales: B<sup>b</sup> major.
- Staff 2:** Chord Scales: Am<sup>7bs</sup> (VIIIm<sup>7bs</sup>) [Locr], D<sup>7</sup> (V<sup>7/VI\*</sup>) [Mixo b13], Gm (VIIm<sup>1</sup>) [Gm Melodic]. Parent Scales: B<sup>b</sup> major.
- Staff 3:** Chord Scales: Cm<sup>7</sup> (IIm<sup>7</sup>) [Dor], F<sup>7</sup> (V<sup>7</sup>) [Mixo], B<sup>bΔ</sup> (I<sup>Δ</sup>) [Ion], E<sup>bΔ</sup> (IV<sup>Δ</sup>) [Lyd]. Parent Scales: B<sup>b</sup> major.
- Staff 4:** Chord Scales: Am<sup>7bs</sup> (VIIIm<sup>7bs</sup>) [Locr], D<sup>7</sup> (V<sup>7/VI\*</sup>) [Sp.Phr], Gm (VIIm<sup>1</sup>) [Gm Harmonic]. Parent Scales: B<sup>b</sup> major.

**Annotations:**

- Staff 2:** [multiple options] G minor
- Staff 4:** [multiple options] G minor

<sup>1</sup> © Metro-Goldwyn-Mayer Inc. 1934 (renewed 1961)

<sup>2</sup> © 1947, 1950, 1987 Enoch Et Cie. (renewed 1975, 1978)

V7/VI\* in bar 6 and 14 (not counting the pick-up bar) is not a real modulation, but a *tonal change* towards the (expected) key of G minor – Melodic in bar 6, because of the E natural tone in the melody, and Harmonic in bar 14, as expected “first option” for V7/VI.

VIm in bar 7-8 and 15-16 can be played as a tonal change towards the (expected) key of G minor, offering multiple options: [Aeolian], [Harmonic], [Melodic] and/or [Dorian].

Finally, let's analyze another Jazz standard with lots of Secondary Dominants.

## All Of Me

Simons &amp; Marks

The musical score for "All Of Me" consists of four staves of music in 4/4 time, primarily in C major. The analysis below each staff identifies various chords and their implied scales:

- Staff 1 (Measures 1-8):**
  - Measure 1: C<sup>A</sup> (Imaj7 [Ion] C Major)
  - Measure 2: E7 (V7/VI [Sp.Phr] Am Harmonic)
  - Measure 3: A7 (V7/(II) [Sp.Phr]\* Dm Harmonic)
  - Measure 4: Dm (IIIm [multiple options] C Major or Dm)
- Staff 2 (Measures 9-16):**
  - Measure 9: E7 (V7/VI [Sp.Phr] Am Harmonic)
  - Measure 10: Am (VIm [multiple options] C Major or Am)
  - Measure 11: D7\* (V7/V [Mixo] G Major)
  - Measure 12: Dm7 (IIIm7 [Dor] C Major)
  - Measure 13: G7 (V7/I [Mixo] C Major)
- Staff 3 (Measures 17-24):**
  - Measure 17: C<sup>A</sup> (Imaj7 [Ion] C Major)
  - Measure 18: E7 (V7/VI [Sp.Phr] Am Harmonic)
  - Measure 19: A7 (V7/II [Sp.Phr]\* Dm Harmonic)
  - Measure 20: Dm (IIIm [multiple options] C Major or Dm)
- Staff 4 (Measures 25-32):**
  - Measure 25: F (IV6 [Lyd] C Major)
  - Measure 26: Fm (?)
  - Measure 27: C<sup>A</sup> (Imaj7 [Ion] C Major)
  - Measure 28: Em7 (IIIIm7 [Phr] C Major)
  - Measure 29: A7 (V7/(II) [Mixo b13] Dm Melodic)
  - Measure 30: Dm7 (IIIm7 [Dor] C Major)
  - Measure 31: G7 (V7/I [Mixo] C Major)
  - Measure 32: C<sup>6</sup> (I6 [Ion] ?)
  - Measure 33: Eb<sup>o</sup> (IIIm7 [Dor] ?)
  - Measure 34: Dm7 (V7/I [Mixo] C Major)
  - Measure 35: G7 (IIIm7 [Dor] ?)

### **Notes on the analysis**

- The song is in C Major.  
The structure is AB (A from bar 1 to bar 16 – B from bar 17 to end).
- Every arrow is an authentic (primary or secondary) cadence from V7 towards its target chord.
  - Bar 13 – D7\* (V7/V)  
This arrow jumps over the first chord (IIm7) in a hook (or II-V cadence).  
This *indirect* cadence is *very common*, and will always appear exactly in this same way, i.e. jumping over the first chord of a hook.
- Every hook is a II-V cadence.
- All chord scale choices follow the conclusions of the previous chapters.
  - Except, Bar 5/6 (and bar 21/22) – extended dominant A7 (V7(II)) [Sp.Phr]\*  
The “first” chord scale option for an extended dominant following a [Sp.Phr] dominant – E7 (V7/VI) [Sp.Phr] in bar 3 to 4 (and bar 19 to 20) – should be [Mixo<sup>b13</sup>] (and so it should when analyzed as the “regular” V7/II). But here, the B<sup>b</sup> tone in bar 6 (and 22) suggests that the chord scale should be played [Sp.Phr] instead.  
Another option would be to play [Mixo<sup>b13</sup>] in bar 5 (and bar 21) and then to change to [Sp.Phr] in bar 6 (and 22). Still other options will be available after we’ve learned about all Dominant Chord Scales in the next part (page 125).  
The analysis here keeps [Sp.Phr] over both bars for reasons of convenience only.
  - Bar 7/8 (and bar 23/24) – Dm (IIm), and Bar 11 to 12 – Am (VIm)  
The minor *triads* written on the score, without 7<sup>th</sup> degree, suggest the multiple options for these chords – [Dorian], [Aeolian], [Harmonic] or [Melodic] – staying in C Major, or allowing tonal changes to Dm or Am (Natural, Harmonic, Melodic or Dorian) respectively.
- Bar 25 – F (IV6) [Lyd]  
The IV-chord is analyzed here as IV6 because of the D tone in the melody. IV6 is a justified alternative for IV<sup>A</sup>. It doesn’t change the chord scale.
- Bar 26 – Fm (?) and bar 31 – Eb<sup>°</sup> (?)  
These chords still need to be explained in the next chapters.

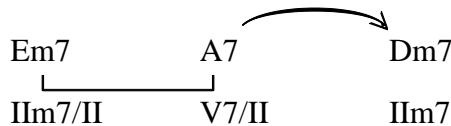
## Relative-II Chords and Secondary II-V Cadences

Secondary Dominants, with their tonal changes, create authentic cadences, not to the central chord (primary cadence), but to *any other chord* (secondary cadence).

With **relative-II chords** we can create complete **secondary II-V cadences**, not to the central chord (primary cadence), but to *any other chord* (secondary cadence).

*Every Dominant used in a song can be preceded by its Relative-II chord.*

Example: In a song written in C Major, the chord Dm7 (IIIm7) is introduced by its own secondary dominant chord A7. This secondary dominant can be preceded by Em7 creating a secondary IIIm7 – V7 cadence towards the Dm7.



### DOUBLE FUNCTION OF RELATIVE-II CHORDS

Due to the residual tones these relative-II chords sometimes<sup>1</sup> have a double function:

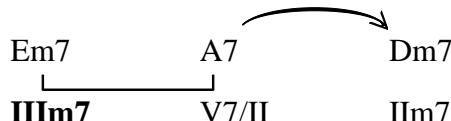
- They have a secondary function towards the target chord, i.e. IIIm7 of the target.
- But they also have a primary function in the main key of the song (or fragment), i.e. in relation to the central tone.

The primary function prevails: A song is linear in time, so, when playing the relative-II chord for the first time, we haven't yet heard the resolution to the following dominant, and then to the following target chord. Therefore, we hear the *primary function* of the chord, i.e. *still* in the main key of the song, and *not yet* as a tonal change.

Though, when repeating the phrase, we already know where that chord is going to. So, we *can* hear the secondary function, i.e. as a tonal change to the key of the target chord.

Therefore, when analyzing a song, it's useful to

- Write its secondary function, using the hook highlighting the II-V cadence.
- Write its primary function, if any, using the Roman numeral as related to the main key. If there's no primary function, we'll just write a question mark (for now).



### THE MINOR IIIm7<sup>b5</sup>-V7 CADENCE

We've seen in the previous chapter that some secondary dominants are a tonal change to a Major key (or chord), while others are a tonal change to a minor key (or chord). So, logically, a secondary II-V cadence targeting a Major chord will use the Major IIIm7-V7 cadence, while, when targeting a minor chord, it will use the *minor IIIm7<sup>b5</sup>-V7 cadence*<sup>2</sup> instead.

<sup>1</sup> Often, if one considers modal changes too. See Modal Changes (page 197).

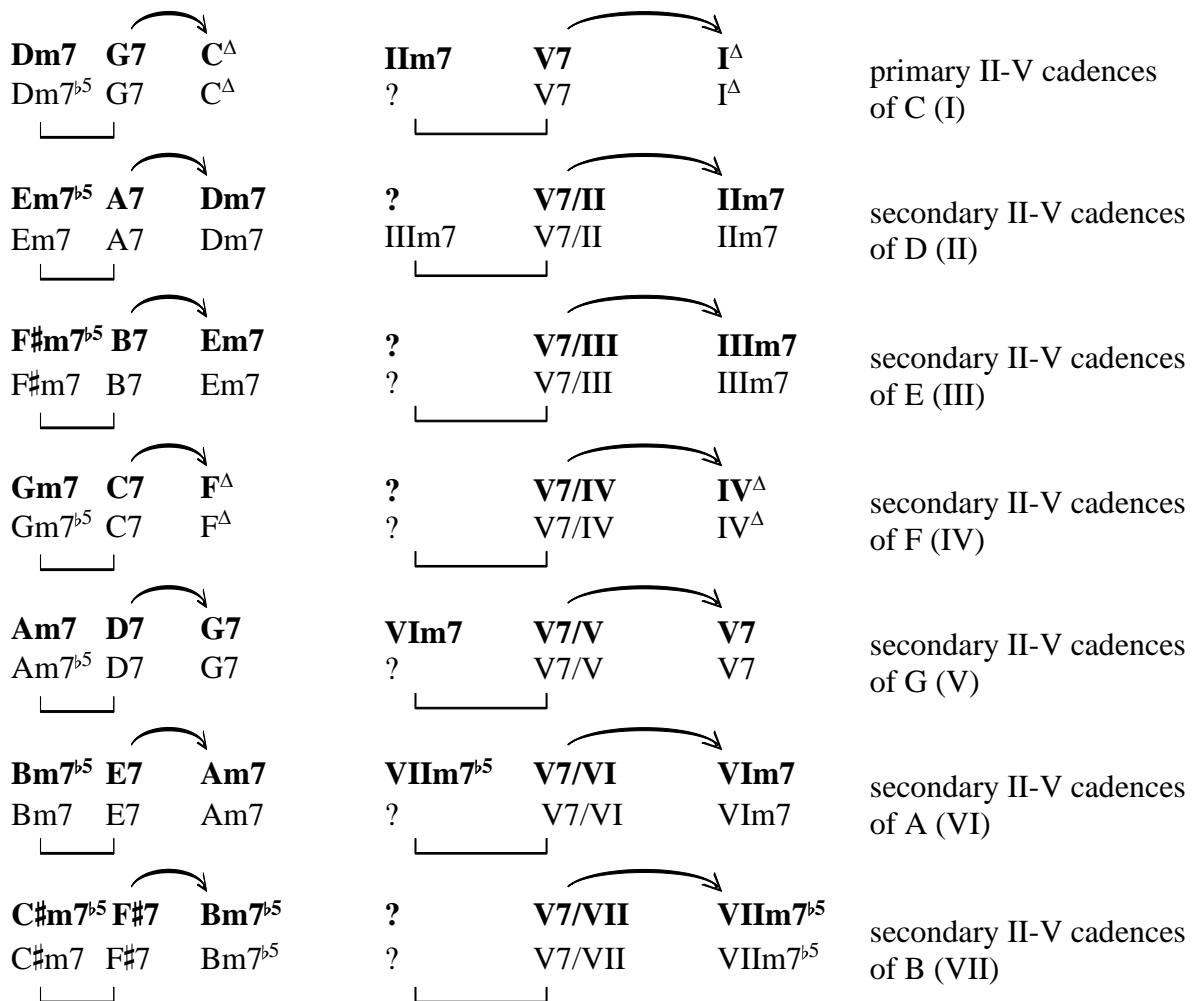
<sup>2</sup> We'll learn about the IIIm7<sup>b5</sup>-chord in the part on minor Functional Harmony (page 167), but it's useful to introduce this chord right now.

However, considering available modal changes, the Major II<sup>m</sup>7-V7 cadence can also be used to target a minor chord, and the minor II<sup>m</sup>7<sup>b5</sup>-V7 cadence alike can be used to target a Major chord.

Every Relative-II chord (the primary II also) can be either II<sup>m</sup>7 or II<sup>m</sup>7<sup>b5</sup>.

## LIST OF SECONDARY II-V CADENCES

Considering the double function of the Relative-II chords, and the minor cadences, let's list all the possible relative-II chords for a song in C Major. The bold cadences are the ones most commonly used: Major cadences to Major chords, minor cadences to minor chords. Though, the other cadences are perfectly available alternatives.



### Notes

Most question marks in the analysis will be replaced later by modal chords, though these will mostly confirm the chord scale options proposed below.

I've stated before that the (primary) VII<sup>m</sup>7<sup>b5</sup>-chord is (almost) never used, except, as confirmed here, as a relative-II<sup>m</sup>7<sup>b5</sup> chord towards the VI<sup>m</sup>7 (II<sup>m</sup>7<sup>b5</sup>/VI).

## CHORD SCALES AND PARENT SCALES FOR RELATIVE-II CHORDS

II-V cadences are functional dominant-like structures<sup>1</sup>. It's important to give them a clear sound, preferably without ambiguity concerning their function. Therefore, in most cases the chord scale choice will be:

[Dor] – [Mixo]<sup>2</sup> for Major II-V cadences

[Locr] – [Sp.Phr]<sup>3</sup> for minor II-V cadences

So, the chord scales for relative-IIIm7 chords are mostly [Dorian], *except* when the primary function contradicts this.

The chord scales for relative-IIIm7<sup>b5</sup> chords are [Locrian], the chord scale for the primary VIIIm7<sup>b5</sup> is, of course, also [Locrian].

Relative-II chords	Chord Scale	Parent Scale (tonal change to)
All relative-IIIm7 except ...	[Dorian]	Major of target
IIIm7/II, actually the primary IIIIm7	[Phrygian] prevails <i>[Dorian] is an option</i>	Main Major key <i>Major of target</i>
IIIm7/V, actually the primary VIIm7	[Aeolian] prevails <i>[Dorian] is an option</i>	Main Major key <i>Major of target</i>
All relative-IIIm7 <sup>b5</sup> (and primary VIIIm7 <sup>b5</sup> )	[Locrian]	Natural minor of target

<sup>1</sup> Indeed, you'll often find a dominant – e.g. G7 – replaced by its equivalent II-V cadence – Dm7 G7 or Dm7<sup>b5</sup> G7 – in the re-harmonization of a song (and vice versa).

<sup>2</sup> Not taking into account the possible alternatives that we'll see in the next part on Dominant Chord Scales (page 125).

<sup>3</sup> Not taking into account the possible alternatives that we'll see in the next part on Dominant Chord Scales.

## Introducing minor Functional Harmony

As we can notice, the parent scale for a Major cadence is homogenous – II<sup>m</sup>7 issued from the Major parent scale of the target and V7 issued from the same Major parent scale – whereas the parent scale for a minor cadence is not – II<sup>m</sup>7<sup>b5</sup> issued from the minor *Natural* parent scale of the target and V7 issued from the minor *Harmonic* parent scale of the target.

This shouldn't be a problem, but it can be when the tempo of the song is too high for a swift switch of chord scales, and/or when the improviser is focusing on the parent scale instead of the chord scales. To avoid that problem, some musicians opt for this solution:

[Locr<sup>13</sup>] – [Sp.Phr] for minor II-V cadences<sup>1</sup>

And, as we've seen in the previous sections, sometimes the secondary dominant (V7/II) comes with a [Mixo<sup>b13</sup>] chord scale, i.e. the Melodic-V7, instead of the [Sp.Phr] chord scale (or Harmonic-V7). In that case the next (less common) option is also possible:

[Dor<sup>b9</sup>] – [Mixo<sup>b13</sup>] for *minor* II-V cadences<sup>2</sup> (that *look* like Major II-V cadences)

<sup>1</sup> We'll learn about the [Locr<sup>13</sup>] chord scale, and its tetrachords, in the part on minor Functional Harmony (page 167).

<sup>2</sup> We'll learn about the [Dor<sup>b9</sup>] chord scale, and its tetrachords, in the part on minor Functional Harmony.

## Introducing the Major<sup>b6</sup> Parent Scale

Finally, there is also a variant of the *Major II-V* cadence – that *looks* like a minor cadence – that is worth introducing here already to be complete. The following chord scales – and the according Major<sup>b6</sup> parent scale – will be seen more extensively in the parts on Dominant Chord Scales (page 125) and Modal Changes (page 197). Let's just mention, at this moment, that the Major<sup>b6</sup> scale is a Major hybrid scale (or the Major equivalent to the minor Melodic scale, a minor hybrid scale).<sup>1</sup>

[Dor<sup>b5</sup>] – [Mixo<sup>b9</sup>] for *Major II-V* cadences (that *look* like minor II-V cadences)

A musical staff in G clef shows notes for two scales. Above the staff, 'Dm7<sup>b5</sup>' is written above the first two notes, and 'G7' is written above the last note. Below the staff, the notes are numbered 1 through 7 under the heading '[Dor <sup>b5</sup>]'. To the right, the notes are numbered 1 through 7 under the heading '[Mixo <sup>b9</sup>]'. A curved arrow points from the end of the Mixo scale back to the beginning of the Dor scale.

1	2	<sup>b</sup> 3	4	<sup>b</sup> 5	6	<sup>b</sup> 7	1	<sup>b</sup> 2	3	4	5	6	<sup>b</sup> 7
[Dor <sup>b5</sup> ]							[Mixo <sup>b9</sup> ]						
C Major <sup>b6</sup>							C Major <sup>b6</sup>						

With this Major<sup>b6</sup> scale we've now seen the four main parent scales – 2 Major scales and 2 minor scales – that include the tritone of the tonality, and that consequently can generate a functional dominant V7 chord:

Major / Major<sup>b6</sup> // minor Harmonic / minor Melodic

## Conclusion

The “stricter rule”, i.e. ignoring the multiple options, tells you that the [Dorian] and the [Locrian] chord scales are the first options for IIIm7 and for IIIm7<sup>b5</sup> respectively (probably the most convenient options too). However, considering ...

1. the residual tones and the consequently possible primary functions of the Relative-II chords (and also the primary functions as *modal changes*<sup>2</sup>)
  2. the possible alternative chord scales for Relative-II chords, issued from the minor Harmonic, the minor Melodic and the Major<sup>b6</sup> parent scales
  3. the possibility to combine either Relative-II chord scale with either V7 chord scale<sup>3</sup>, i.e. *not necessarily* keeping the same parent scale over the whole (secondary) II-V cadence
- ... the possible chord scales for Relative-II chords and for (secondary) II-V cadences can be plentiful. Your personal musical hearing and liking will be the only judge.

<sup>1</sup> The Major<sup>b6</sup> scale, also known as the Moll-Dür scale, combines a Major tetrachord followed by a Harmonic tetrachord, therefore *hybrid*, meaning partly Major, partly minor. The odd Moll-Dür naming, meaning minor-Major – or in fact, just the opposite of the order of the tetrachords – will be explained later.

See minor Sub-Dominant chords (SDm chords) (page 199).

See also the related The Melodic-IV7<sup>#11</sup> Subdominant Chord (page 181).

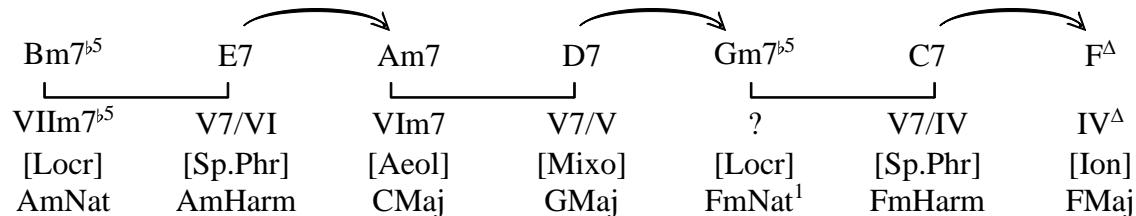
<sup>2</sup> The chords that, for now, are analyzed with a question mark. See Modal Changes (page 197).

<sup>3</sup> See next part on Dominant Chord Scales (page 125).

## EXTENDED II-V CADENCES

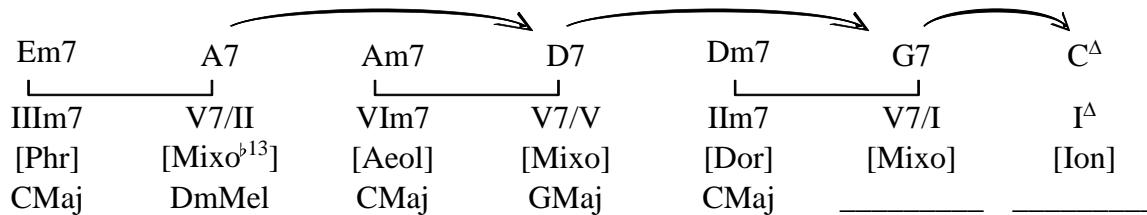
Since *every chord used in a song can be introduced by its own dominant chord*, it's quite common to see extended secondary II-V cadences (just like extended dominants). They come in two, and by extension three, different ways, using ...

- secondary dominants targeting the relative-IIIm7 or IIIm7<sup>b5</sup> (first chord in the hook)



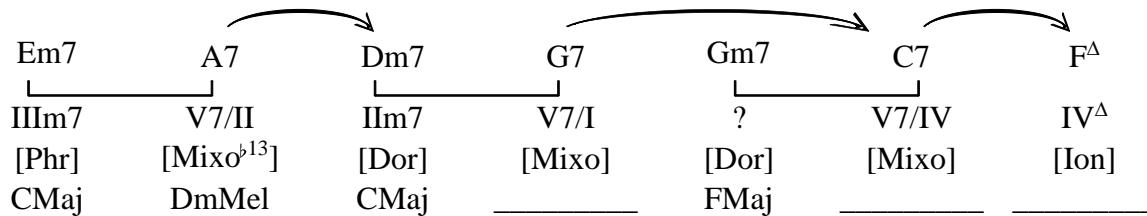
These cadences have the “standard” progressive root motion in downward fifths. But, striking, they follow a *downward whole step pattern*, each cadence being one whole tone below the former.

- secondary dominants resolving *indirectly* to the V7 (second chord in the hook – arrow jumping over the first chord in the hook)



These cadences follow a *downward fifths pattern*, each cadence being a perfect fifth below the former. Note the use of pivotal bass tones in the root motion, each time the dominant changes to the next relative-II chord.

- secondary dominants targeting either the relative II-chord, or the V7-chord, following either the downward whole steps pattern, or the downward fifths pattern.



The choice of chord scales, as mentioned in the examples above, mostly follow the residual tones method. It can be an option though to stick to the “stricter rule”, using [Dor] – [Mixo] for Major cadences and [Locr] – [Sp.Phr] for minor cadences, giving the cadences a more homogenous parent scale at the same time (though still minor *Natural* – minor *Harmonic* for minor cadences).

<sup>1</sup> I've inserted a modal change – minor cadence instead of Major cadence – just for illustration.

## CONTIGUOUS II-V CADENCES

It's not rare to encounter II-V cadences that don't resolve to each other, i.e. that are deceptive cadences, but that follow each other either in *upward whole steps pattern* or in *upward half steps pattern*. These cadences are called *contiguous* cadences. This type of construction is sometimes also called *parallel harmony*, and to reinforce this parallelism it's common to stick to the “stricter rule”, [Dor] – [Mixo] for Major cadences and [Locr] – [Sp.Phr] for minor cadences<sup>1</sup>.

### 1. contiguous II-V cadences in *upward whole steps pattern*

Dm7	G7	Em7	A7	F#m7	B7
<u>  </u>					
IIm7	V7/I	IIIIm7	V7/II	?	V7/III
[Dor]	[Mixo]	[Dor]	[Mixo]	[Dor]	[Mixo]

Dm7 <sup>b5</sup>	G7	Em7 <sup>b5</sup>	A7	F#m7 <sup>b5</sup>	B7
<u>  </u>	<u>  </u>	<u>  </u>	<u>  </u>	<u>  </u>	<u>  </u>
?	V7/I	?	V7/II	?	V7/III
[Locr]	[Sp.Phr]	[Locr]	[Sp.Phr]	[Locr]	[Sp.Phr]

CmNat	CmHarm	DmNat	DmHarm	EmNat	EmHarm
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### 2. contiguous II-V cadences in *upward half steps pattern*

Dm7	G7	Ebm7	A♭7	Em7	A7
<u>  </u>					
IIm7	V7/I	?	V7/?	IIIIm7	V7/II
[Dor]	[Mixo]	[Dor]	[Mixo]	[Dor]	[Mixo]

Dm7 <sup>b5</sup>	G7	Ebm7 <sup>b5</sup>	A♭7	Em7 <sup>b5</sup>	A7
<u>  </u>	<u>  </u>	<u>  </u>	<u>  </u>	<u>  </u>	<u>  </u>
?	V7/I	?	V7/?	?	V7/II
[Locr]	[Sp.Phr]	[Locr]	[Sp.Phr]	[Locr]	[Sp.Phr]

Going *down* by whole steps brings us back to the extended II-V cadences – with secondary dominants targeting the relative-II chords – we've seen in the previous section<sup>2</sup>.

Going *down* by half steps is also possible. We'll see in the next part (chapter on Substitution Dominants) that these are in fact Extended II-V Cadences with Sub-Cadences (page 140).

<sup>1</sup> But always remember that there are multiple options and that the choice is yours, according to your personal musical hearing and taste.

<sup>2</sup> See Extended II-V Cadences (page 119) above, first example.

## ANALYSIS OF A SONG WITH SECONDARY II-V CADENCES

First, let's review the analysis of 'Autumn Leaves'<sup>1</sup> (by Joseph Kosma), a song in G minor, but still analyzed in its relative key of B♭ Major.

**Autumn Leaves - Joseph Kosma (1905 - 1969)**

Chord Scales:  
Cm<sup>7</sup> [Dor]  
IIIm<sup>7</sup> [Mixo]  
V<sup>7</sup> [Mixo b13]  
I<sup>Δ</sup> [Ion]  
IV<sup>Δ</sup> [Lyd]

Parent Scales:  
B♭ major  
VIIIm<sup>7b5</sup> [Locr]  
Gm Melodic  
[multiple options]  
G minor

Chord Scales:  
IIIm<sup>7</sup> [Dor]  
V<sup>7</sup> [Mixo]  
I<sup>Δ</sup> [Ion]  
IV<sup>Δ</sup> [Lyd]

Chord Scales:  
Am<sup>7b5</sup> [Sp.Phr]  
V<sup>7/VI\*</sup> [Gm Harmonic]  
VIm [multiple options]  
G minor

Bar 5-6 (to 7-8) and 13-14 (to 15-16): The Am<sup>7b5</sup> – D7 to Gm now has a hook indicating that this is a secondary, *expected minor*, cadence (IIIm<sup>7b5</sup> – V7) towards the VIm chord.

The numeral analysis for Am<sup>7b5</sup> stays VIIIm<sup>7b5</sup>, because this Roman numeral indicates the (admittedly, theoretical only<sup>2</sup>) *primary* function of the chord.

The *secondary* function is indicated by the *hook*, meaning IIIm<sup>7b5</sup> of VIm.

Let's now analyze a new song, 'I Should Care' (by Cahn/Stordahl/Weston).

<sup>1</sup> © 1947, 1950, 1987 Enoch Et Cie. (renewed 1975, 1978)

<sup>2</sup> True! This is not "really" the primary VIIIm<sup>7b5</sup>, but *actually* the relative-IIIm<sup>7b5</sup> of VIm. But if one wants to keep a *rigorous* analysis method, the *strict* way is to analyze this relative-II chord as you would for *any* relative-II chord → the *hook* indicating the *secondary* function; the *Roman numeral* indicating the *primary* function.

**I Should Care** (Cahn/Stordahl/Weston)

Sheet music for "I Should Care" showing harmonic analysis and tonal changes across 12 staves.

**Harmonic Analysis:**

- M1: Dm7, G7, Em7, A7, Dm7, G7, C<sup>A</sup>
- M2: IIIm<sup>7</sup> [Dor], V<sup>7</sup> [Mixo], IIIIm<sup>7</sup> [Dor], V<sup>7/II</sup> [Mixo], IIIm<sup>7</sup> [Dor], V<sup>7</sup> [Mixo], I<sup>A</sup> [Ion]
- M3: C Maj, D Maj, C Maj
- M4: Em<sup>7b5</sup>, A<sup>7sus</sup>, A7, Dm7, Fm7, Bb7
- M5: ? [Locr], V<sup>7sus/II</sup> [Sp.Phr], V<sup>7/II</sup>, IIIm<sup>7</sup> [Dor], ? [Dor], ? [Mixo]
- M6: Dm Nat, Dm Harm, C Maj
- M7: C<sup>A</sup>, Bm<sup>7b5</sup>, E7, Gm7, C7, F<sup>A</sup>
- M8: I<sup>A</sup> [Ion], VIIIm<sup>7b5</sup> [Locr 13], V<sup>7/VI</sup> [Sp.Phr], ? [Dor], V<sup>7/IV</sup> [Mixo], IV<sup>A</sup> [Ion]
- M9: C Maj, Am Harm, F Maj
- M10: Bm<sup>7b5</sup>, E<sup>7b9</sup>, Am, Am7, D7, Dm7, G7
- M11: VIIIm<sup>7b5</sup> [Locr], V<sup>7/VI</sup> [Sp.Phr], VIm [Mel], VIIIm<sup>7</sup> [Dor], V<sup>7/V</sup> [Mixo], IIIm<sup>7</sup> [Dor], V<sup>7</sup> [Mixo]
- M12: Am Nat, Am Harm, Am Mel, G Maj, C Maj
- M13: F#m<sup>7b5</sup>, B<sup>7b9</sup>, Em7, A7, Dm7, G7, C<sup>A</sup>
- M14: ? [Locr], V<sup>7/III</sup> [Sp.Phr], IIIIm<sup>7</sup> [Dor], V<sup>7/II</sup> [Mixo], IIIm<sup>7</sup> [Dor], V<sup>7</sup> [Mixo], I<sup>A</sup> [Ion]
- M15: Em Nat, Em Harm, D Maj, C Maj
- M16: Em<sup>7b5</sup>, A<sup>7sus</sup>, A7, Dm7, Fm7, Bb7
- M17: ? [Locr], V<sup>7sus/II</sup> [Sp.Phr], V<sup>7/II</sup>, IIIm<sup>7</sup> [Dor], ? [Dor], ? [Mixo]
- M18: Dm Nat, Dm Harm, C Maj
- M19: Am7, Bm<sup>7b5</sup>, E<sup>7b9</sup>, Am, Am/G, D7/F#, Fm<sup>6</sup>
- M20: VIIm<sup>7</sup> [Aeol], VIIIm<sup>7b5</sup> [Locr], V<sup>7/VI</sup> [Sp.Phr], VIm [Mel], VIIm<sup>7</sup> [Dor], V<sup>7/V</sup> [Mixo], ?
- M21: C Maj, Am Nat, Am Harm, Am Mel, G Maj, ?
- M22: C/E, Eb<sup>o</sup>, Dm7, G7, C<sup>6</sup>, F7, Em7, A7
- M23: I<sup>A</sup> [Ion], IIIm<sup>7</sup> [Dor], V<sup>7</sup> [Mixo], I<sup>6</sup> [Ion], IV<sup>7</sup> [?], IIIIm<sup>7</sup> [Dor], V<sup>7/II</sup> [Mixo]
- M24: C Maj, ?
- M25: C Maj, C Maj, (C Blues), D Maj

### **Notes on the analysis:**

The very first note – and definitely the most important – is that this analysis is merely an illustration of what *could* be played. The chord scales options are in most cases multiple:

1. Most relative-II chords, even the primary II<sup>m</sup>7, come with multiple options as we've seen in the previous sections of this chapter.
2. Every dominant chord comes with multiple options, as we'll see in the next part on Dominant Chord Scales (page 125).
3. Even the plain diatonic chords come with multiple options as we've seen in the section on Tonal Changes on Diatonic Chords page 105 (and as we'll see in the part on Modal Changes further page 197).

When preparing this analysis, I often felt quite undecided on what options I should make – and force the reader to make at the same time – to illustrate what we've learned so far. Other choices might have been made just as well. So, let me explain the choices I've made in '*I Should Care*'.

- Bar 2 (and 18): I've opted for the “stricter rule” – i.e. [Dor] [Mixo] (instead of [Phr] [Mixo<sup>b13</sup>]) – to reinforce the harmonic parallelism of the contiguous II-V cadence following bar 1.
- Bar 6 (and 22): V7/II “usually” comes with a [Mixo<sup>b13</sup>] chord scale. In this case, I've opted to give in to the residual tone B♭ – the diminished 5<sup>th</sup> of the previous Em7<sup>b5</sup> chord – and to keep that tone in the V7 chord scale, hence [Sp.Ph].
- Bar 8 (and 24): Fm7 B♭7 definitely *looks* like a II-V cadence, and is analyzed as such with a hook, hence [Dor] [Mixo].  
It's less logic though to explain how this II-V cadence of E♭ Major suddenly appears in a song in C Major while E♭ is nowhere to be found (as modulation or else), hence the question marks in the analysis. The E♭ *parent* scale does the trick though, for now.  
Actually, these particular chords will be seen and explained later as minor Sub-Dominants in the part on Modal Changes (page 197).
- Bar 10: I've opted for the [Locr<sup>13</sup>] on the Bm7<sup>b5</sup> chord (instead of [Locr]) only to illustrate the option we've seen in the previous sections, i.e. opting for a homogenous minor Harmonic parent scale over this whole II-V cadence. (Not so in bar 26.)
- Bar 12: IV<sup>Δ</sup>-[Ion] instead of [Lyd], because when IV<sup>Δ</sup> is introduced by its secondary dominant (and/or secondary II-V cadence) it sounds as if a modulation occurred. Most Jazz musicians might play it [Lyd] though, as we'll see in the chapter on Avoid the Avoids (page 230).
- Bar 14: VI<sup>m</sup>-[Mel] instead of [Aeol] to illustrate how a diatonic chord can sound as if a modulation occurred when introduced by its secondary dominant (and/or secondary II-V cadence).
- Bar 15: VI<sup>m</sup>7-[Dor] instead of [Aeol], because I've opted to give in to the residual tone F♯ included in the previous [Mel] chord scale of the “same” chord. The only altered tone, going from [Mel] to [Dor], is the G♯ changed to G natural. And, of course also, [Dor] [Mixo] is the “stricter rule” for Major II-V cadences.
- Bar 18: I've opted for the “stricter rule” [Dor] [Mixo] as a reminder of bar 2.

- Bar 22: V7/II-[Sp.Phr] – see bar 6 above.
- Bar 24: Fm7 B♭7 – see bar 8 above.
- Bar 27: VIm-[Mel] – see bar 14 above, this time the choice is reinforced by the G♯ in the melody. VIm7-[Dor] – see bar 15 above.
- Bar 28: Fm6 still needs to be seen and explained (see part on Modal Changes page 197).
- Bar 29: E♭° still needs to be seen and explained (see part on Approach Chords and Auxiliary Chords page 145).
- Bar 31: F7 is analyzed here as the Blues-IV7 chord<sup>1</sup>. There's no particular chord scale, though you could use the F Maj.Bluess, the F Blues and/or the F Ext.Bluess "chord scale". But I've opted for the C Blues scale (between brackets, because this is not a "real" parent scale) as improvisation scale, for a "true" bluesy sound.  
There's yet another possible analysis for this chord that still needs to be seen and explained (see Substitution Dominants page 134).
- Bar 32: I've opted for the "stricter rule" [Dor] [Mixo] as a reminder of bar 2 and 18.

## Conclusion

From now on, after this part on 'Tonal Changes', the chord scale choices – and consequently the parent scale choices – are open to multiple options. The next parts of this book will only confirm this fact. The choices made will depend – and should depend – on personal musical hearing and taste, and on musical style (sometimes, the musical style can be imposed by "the mission statement" in a "professional" context, instead of being a strictly personal choice).

But choices are also often dictated by convenience or habit, only because these are the choices we (already) know (and/or master). Moreover, guitarists for example do not always make the same choices as pianists do, only because the *technical* convenience can be different on the one, or the other, instrument. This can be a justified choice, because it's definitely better to sound strong and confident in a convenient choice, than it is to sound weak and unsure in another less convenient choice.

However, one should always be mindful not to be too complacent with one's own convenience. You should at least try out all options, better, practice until you master all the possible options and get familiar with their available tensions and avoids. Only so will you be able to hear and recognize all the possibilities and to base your choices consciously, on knowledge, instead of convenience or habit. And most importantly, it will increase your personal flexible creativity.

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<sup>1</sup> See Improvising on Blues (page 95).

# DOMINANT CHORD SCALES

## The Eight Dominant Chord Scales

When reading on Dominant Chord Scales in other books and/or on the internet, you might find plenty of possible scales. All these scales can actually be reduced to only **eight different Dominant Chord Scales**<sup>1</sup>: the *four “Basic” Dominants* which we’ve learned about in the previous part (one of which was only briefly mentioned in the chapter on secondary II-V cadences), and *four “Lydian” Dominants*<sup>2</sup> which we’re going to study in this part. We’ll first mention and categorize all eight scales, after which we’ll go over each chord scale in depth.

### CHARACTERISTICS OF DOMINANT V7 CHORDS

Dominant V7 chords

- are built on the 5<sup>th</sup> degree of the tonality (... of the target chord), being the root of the dominant chord itself,
- include the tritone – 4<sup>th</sup> and 7<sup>th</sup> degree – of the tonality (... of the target chord), being the ♭7<sup>th</sup> and 3<sup>rd</sup> degree respectively of the dominant chord itself,
- have no avoid tones – with the exception of Avoid 11 – and, due to their already inherent instability, they can have *any* tension, even non diatonic ones
  - “natural” Tension 9      OR      “altered” Tension ♭9 together with #9 <sup>3</sup>
  - “natural” Avoid 11      OR      “altered” Tension #11
  - “natural” Tension 13      OR      “altered” Tension ♭13.

Important notes on the use of the tensions

- When the chord includes the “avoid 11”, the Major 3<sup>rd</sup> of the chord is left out, becoming a chord with “tension 11” (or sus4) and “avoid 3” as it were. This is called the suspended 4<sup>th</sup> (sus4) effect. Because the Major 3<sup>rd</sup> is indispensable to the tritone, and that the tritone is a needed characteristic for the dominant function, when the Major 3<sup>rd</sup> is left out, the chord loses its dominant function and becomes a sub-dominant chord. Since it’s still built on the 5<sup>th</sup> degree (or dominant) of the parent scale, some theoreticians, like myself, name this function SD(D) (= sub-dominant with “some dominant-like” sound).

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<sup>1</sup> The much larger amount of dominant scales you find in other sources is due to the addition of variants of these eight scales, some with added chromatic passage tones, others with tones left out of the scale. I’ll mention some variants, if common, linked to their “original” chord scale. However, since many musicians seem to reinvent new dominant scales that fit their musical hearing, their instrument or their fingering, it’s impossible to be complete. Also, I’ll leave the possible pentatonic scales out. Please refer to the chapter on Using the Pentatonic Scales (page 88).

<sup>2</sup> The subdivision in “Basic” dominants and “Lydian” dominants is useful to fit the logic buildup in this book. It’s not a universal theoretical concept, and it shouldn’t be understood as such.

<sup>3</sup> Not only can tension 9 be lowered to ♭9, or raised to #9, it can actually split into ♭9 and #9.

- The 5<sup>th</sup> of the chord is expendable. Therefore, when tension  $\flat 13$  is used together with tension  $\sharp 11$ , the 5<sup>th</sup> of the chord is usually left out of the chord scale to avoid consecutive semitones and/or a cluster-like sound.<sup>1</sup>

Moreover, dominant V7 chords usually (but not necessarily)

- include the Major 3<sup>rd</sup> of the Major *parent* scale (or Major target chord), being the tension 13 (or natural 6<sup>th</sup> degree of the *chord* scale) of the dominant chord itself, when targeting a Major chord,
- include the minor 3<sup>rd</sup> of the minor *parent* scale (or minor target chord), being the tension  $\flat 13$  (or lowered 6<sup>th</sup> degree of the *chord* scale) of the dominant chord itself, when targeting a minor chord.

But deceptive cadences and modal changes are possible. It's imaginable to play a dominant V7 with Tension 13, which calls for a Major target chord, and *deceptively* resolve to a minor chord. Just as it is imaginable to play a dominant V7 with Tension  $\flat 13$ , which calls for a minor target chord, and *deceptively* resolve to a Major chord.

## LIST OF DOMINANT CHORD SCALES

When trying all the possible combinations with the tensions, this is what we get:

V7 TYPE	CHORD SCALE	PARENT SCALE (OF TARGET)	CHORD TONES	TENSIONS	AVOID (OR SUS4)
<b>“Basic” Dominants – with avoid 11 (or sus4)</b>					
V7 <sup>13</sup>	[Mixolydian]	Major (Major target)	1 3 5 $\flat 7$	9 13	11
V7 <sup><math>\flat 9-13</math></sup>	[Mixolydian <sup><math>\flat 9</math></sup> ]	Major <sup><math>\flat 6</math></sup> <sup>2</sup> (Major target)	1 3 5 $\flat 7$	$\flat 9 \sharp 9$ 13	11
V7 <sup><math>\flat 9-\flat 13</math></sup>	[Spanish Phrygian]	minor Harmonic (minor target)	1 3 5 $\flat 7$	$\flat 9 \sharp 9 \flat 13$	11
V7 <sup>9-<math>\flat 13</math></sup>	[Mixolydian <sup>13</sup> ]	minor Melodic (minor target)	1 3 5 $\flat 7$	9 $\flat 13$	11

The four “Basic” dominants all share these characteristics:

- They all include avoid 11, and consequently can be played as sus4-chords.
- They are all issued from an existing parent scale (of the target chord): Major, Major <sup>$\flat 6$</sup> , minor Harmonic or minor Melodic.

<sup>1</sup> In my experience though, the 5<sup>th</sup> *can* sound alright even together with T $\sharp 11$  and T $\flat 13$ .

<sup>2</sup> This parent scale was only briefly introduced in the part on Tonal Changes – Introducing the Majorb6 Parent Scale (page 118). It will be studied more extensively in the part on Modal Changes – The Majorb6 Parent Scale (page 198).

V7 TYPE	CHORD SCALE	PARENT SCALE (OF TARGET)	CHORD TONES	TENSIONS	AVOID (OR SUS4)
<b>“Lydian” Dominants – with tension #11</b>					
V7 <sup>#11</sup>	[Lydian <sup>b7</sup> ] <sup>1</sup>	(no parent scale) Major target	1 3 5 b7	9 #11 13	no avoids
V7 <sup>b9-13</sup>	[Diminished ½-1]	(no parent scale) Major target	1 3 5 b7	b9 #9 #11 13	no avoids
V7alt	[Altered] <sup>2</sup>	(no parent scale) minor target	1 3 (5) b7	b9 #9 #11 b13	no avoids
V7 <sup>b13</sup>	[Whole Tone] <sup>3</sup>	(no parent scale) minor target	1 3 (5) b7	9 #11 b13	no avoids

The four “Lydian” dominants all share these characteristics:

- They all include tension #11 (hence “Lydian”) and consequently have no avoid tones.
- None of them is issued from an existing parent scale (of the target chord).

Now, let’s go over each of these dominant chord scales in depth.

### ***Reminder***

In order to stay as clear as possible I’ll use the following notation standards:

Melodic–V7 [Mixo<sup>b13</sup>] = Parent Scale of the chord–Chord Degree [Chord Scale]

When there’s no parent scale (as for the “Lydian” dominants), you’ll find V7 [Alt] only.

In analysis though, I’ll mention NPS (No Parent Scale).

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<sup>1</sup> This is the only dominant that is commonly called *The Lydian Dominant*.

<sup>2</sup> “alt” is a standard chord symbol that stands for “all altered tensions”.

<sup>3</sup> The Whole Tone dominant – and sometimes the Altered dominant too – is very often written V7<sup>#5</sup> or V7+ on the score, meaning a dominant with an augmented fifth. That common chord symbol confuses the tension b13 as being an augmented fifth, since the “real” fifth is left out.

## THE FOUR “BASIC” DOMINANTS

### The Major-V7 [Mixolydian]

The [Mixolydian] chord scale, used for the Major-V7, usually targeting a Major chord, is a dominant chord (1 – 3 – 5 –  $\flat$ 7) with available tensions 9 and 13, and with avoid 11 (or sus4) → V7<sup>13</sup> or V7sus4<sup>13</sup>

G7 [Mixolydian]

1      T9      3      Av11      5      T13       $\flat$ 7

When played V7sus4, the chord scale stays [Mixolydian], a SD(D) chord (1 – 4 – 5 –  $\flat$ 7) with available tensions 9, 11 (= 4) and 13, and with “avoid” 3.

Possible variants:

The [Bebop Dominant] chord scale is a variant of the [Mixolydian] scale with the addition of the chromatic passage tone (p.t.) 7.

G7 [Mixolydian] + passage tone 7 = [Bebop Dominant]

1      T9      3      Av11      5      T13       $\flat$ 7      p.t. 7

### The Major $\flat$ 6-V7 [Mixolydian $\flat$ 9]

The [Mixolydian $\flat$ 9] chord scale, used for the Major $\flat$ 6-V7, usually targeting a Major chord, is a dominant chord (1 – 3 – 5 –  $\flat$ 7) with available tensions  $\flat$ 9,  $\sharp$ 9 and 13, and with avoid 11 (or sus4) → V7 $^{\flat 9-13}$  or V7sus4 $^{\flat 9-13}$

G7 [Mixolydian  $\flat$ 9]

1      T $\flat$ 9      T $\sharp$ 9      3      Av11      5      T13       $\flat$ 7

Because of the double tension  $\flat$ 9 and  $\sharp$ 9, this scale is an octotonic scale, meaning that it includes eight different tones. Therefore, the avoid 11 is often left out, avoiding the consecutive semitones (A $\sharp$ , B, C) at the same time. Other common variants are scales that leave one, or the other, 9<sup>th</sup> out of the scale.

When played V7sus4 though, it's better to leave the Major 3<sup>rd</sup> out of the scale, also avoiding the consecutive semitones.

## The Harmonic-V7 [Spanish Phrygian]

The [Spanish Phrygian] chord scale, used for the Harmonic-V7, usually targeting a minor chord, is a Dominant chord (1 – 3 – 5 –  $\flat$ 7) with available tensions  $\flat$ 9,  $\sharp$ 9 and  $\flat$ 13, and with avoid 11 (or sus4) → V7 $^{\flat 9+\sharp 13}$  or V7sus4 $^{\flat 9+\flat 13}$

G7 [Spanish Phrygian]

1      T<sub>9</sub>      T<sub>#9</sub>      3      Av11      5      T<sub>#13</sub>       $\flat$ 7

Because of the double tension  $\flat$ 9 and  $\sharp$ 9, this scale is an octotonic scale, meaning that it includes eight different tones. Therefore, the avoid 11 is often left out, avoiding the consecutive semitones (A $\sharp$ , B, C) at the same time. Other common variants are scales that leave one, or the other, 9<sup>th</sup> out of the scale.

When played V7sus4 though, it's better to leave the Major 3<sup>rd</sup> out of the scale, also avoiding the consecutive semitones. The resulting scale is the exact enharmonic copy of the [Phrygian] scale:

G7sus4 [Phrygian]

1      T<sub>9</sub>      T<sub>#9</sub>      sus4      5      T<sub>#13</sub>       $\flat$ 7

$\frac{1}{G \text{ Phrygian}}$        $\frac{2}{\flat}$        $\frac{3}{\flat}$       4      5       $\frac{6}{\flat}$        $\frac{7}{\flat}$

## The Melodic-V7 [Mixolydian $^{\flat 13}$ ]

The [Mixolydian $^{\flat 13}$ ] chord scale, used for the Melodic-V7, usually targeting a minor chord (targeting IIIm7), a dominant chord (1 – 3 – 5 –  $\flat$ 7) with available tensions 9 and  $\flat$ 13, and with avoid 11 (or sus4) → V7 $^{9+\flat 13}$  or V7sus4 $^{9+\flat 13}$

G7 [Mixolydian  $\flat$ 13]

1      T<sub>9</sub>      3      Av11      5      T<sub>#13</sub>       $\flat$ 7

When played V7sus4, the chord scale stays [Mixolydian $^{\flat 13}$ ].

## THE FOUR “LYDIAN” DOMINANTS

### Tension #11

To “*avoid the avoid 11*”<sup>1</sup>, it’s common, certainly in Jazz, to alter it to **tension #11**, which actually is the *raised Tonic* (central tone) of the original parent scale (or targeted chord).

By doing so, one kind of implicitly denies the existence of the targeted central tone (the Tonic of the parent scale), treating the dominant chord as an emancipated, independent, “*Lydian*” tonal system on its own.<sup>2</sup>

Those “Lydian” dominants are consequently *not issued from any parent scale that is related to the targeted chord*, i.e. there is no scale to be found that is built on the Tonic (or root) of their targeted chord.<sup>3</sup>

Yet, they still function “tonally” as dominant towards the targeted chord, mainly because of the powerful *con-centric* function of the bass and the tritone. That means that the central tone of the tonality – the root of the targeted chord – still keeps its “central role”. These dominants are consequently at the limits of what is “tonally” possible.

If we alter the avoid 11 of each of the four previous “Basic” Dominants to tension #11, one becomes the four “Lydian” Dominants with their specific chord scales.

### The ‘Lydian’ Dominant

When altering the avoid 11 of the Major-V7<sup>13</sup> [Mixolydian] chord to tension #11, one becomes the [Lydian Dominant]<sup>4</sup> chord scale, more commonly known as the [Lydian<sup>b7</sup>] chord scale<sup>5</sup>, usually targeting a Major chord, with available tensions 9, #11 and 13 – no avoids!

G7 [Lydian  $\flat$ 7]

1      T9      3      T $\sharp$ 11      5      T13       $\flat$ 7

### *Important note*

The adjectives used for this (and the coming) dominant(s) do NOT refer to the parent scale, as they did for the “Basic” Dominants, since there is none. The *Major*-V7 – *Major* being the parent scale – becomes a ‘*Lydian*’ V7 – *Lydian* being the “type” of dominant.

These ‘typical adjectives’ are commonly used by Jazz musicians.

<sup>1</sup> See Avoid the Avoids (page 230).

<sup>2</sup> Remember The Lydian Concept (page 20).

<sup>3</sup> Some theoreticians classify those dominants and their chord scales, as issued from yet another parent scale, i.e. not built on the Tonic of the targeted chord, but built on *some* other tone (as we’ll see in The Melodic minor Parent Scale on page 179). I find this intuitively hard to follow, because the relation between the dominant and its targeted chord is completely lost. But it can be a good way to remember these chord scales.

<sup>4</sup> This is the only “Lydian” Dominant commonly known as *the ‘Lydian’ Dominant*.

<sup>5</sup> Also called [Acoustic], [Overtone], [Bartók], and in French [Naturelle] ... We’ll see that this chord scale is also used for SubV7-chords and for some subdominant chords further on.

## The ‘Symmetrical’ Dominant

When altering the avoid 11 of the Major<sup>b6</sup>-V7<sup>b9-13</sup> [Mixolydian<sup>b9</sup>] chord to tension #11, one becomes the [Symmetrical Dominant] chord scale, more commonly known as the [Diminished ½ - 1]<sup>1</sup> chord scale, usually targeting a Major chord, an octotonic scale with available tensions b9, #9, #11 and 13 – no avoids!

G7 [Dim 1/2 - 1]

1      T9      T#9      3      T#11      5      T13      b7

## The ‘Altered’ Dominant

When altering the avoid 11 of the Harmonic-V7<sup>b9-b13</sup> [Spanish Phrygian] chord to tension #11, one becomes the [Altered] chord scale<sup>2</sup>, usually targeting a minor chord, with available “all altered tensions” (hence the naming of the scale) b9, #9, #11 and b13 (no 5<sup>th</sup>) – no avoids!

G7 [Altered]

1      T9      T#9      3      T#11 (no 5th)      T13      b7

The 5<sup>th</sup> degree of the chord scale is “squeezed out” by T#11 and T13.

## The ‘Whole Tone’ Dominant

When altering the avoid 11 of the Melodic-V7<sup>b9-b13</sup> [Mixolydian<sup>b13</sup>] chord to tension #11, one becomes the [Whole Tone] chord scale<sup>3</sup>, usually targeting a minor chord, a symmetrical hexatonic scale, meaning that it includes only six different tones, with available tensions 9, #11 and b13 (no 5<sup>th</sup>) – no avoids!

G7 [Whole Tone]

1      T9      3      T#11 (no 5th)      T13      b7

The 5<sup>th</sup> degree of the chord scale is “squeezed out” by T#11 and T13.<sup>4</sup>

<sup>1</sup> The term symmetrical refers to the specific symmetrical build-up of the scale, alternating one semitone with one whole tone throughout the whole scale. Other existing symmetrical scales are the

- [Symmetrical Diminished] or [Diminished 1-½], alternating whole tones with semitones throughout the whole scale, which we’ll see in the chapter on Diminished Chords (page 145).
- [Whole Tone] scale, repeating whole tones one after the other, which we’ll see very soon.
- [Chromatic] scale, repeating semitones one after the other

<sup>2</sup> Some theoreticians call this scale the [Super Locrian] scale, but, as we’ll see in the part on minor Functional Harmony (page 167), the [Super Locrian] scale is actually an enharmonic equivalent of, but not completely the same as, the [Altered] scale. Moreover, the [Super Locrian] scale is not, strictly speaking, a *dominant* scale.

<sup>3</sup> Sometimes this scale is also called the [Augmented] scale, though it’s better to avoid that ambiguous name since I’ve seen other scales named [Augmented] also. [Whole Tone] has the advantage of being unambiguous.

<sup>4</sup> Reminder: The Whole Tone dominant – and sometimes the Altered dominant too – is very often written V7<sup>#5</sup> or V7+ on the score, meaning a dominant with an augmented fifth. That common chord symbol confuses the tension b13 as being an augmented fifth, since the “real” fifth is left out.

## Tetrachords Used in the Chord Scales

TETRACHORDS CHART			
Tetrachord name	Construction 1 = Whole Tone $\frac{1}{2}$ = semitone $1\frac{1}{2}$ = WT + st	Degree numerals	Alternate names
Major	1 – 1 – $\frac{1}{2}$	1 – 2 – 3 – 4	Ionian
minor	1 – $\frac{1}{2}$ – 1	1 – 2 – $\flat$ 3 – 4	Dorian
Phrygian	$\frac{1}{2}$ – 1 – 1	1 – $\flat$ 2 – $\flat$ 3 – 4	
Harmonic	$\frac{1}{2}$ – $1\frac{1}{2}$ – $\frac{1}{2}$	1 – $\flat$ 2 – 3 – 4	
Lydian	1 – 1 – 1	1 – 2 – 3 – $\sharp$ 4	
Lydian <sup>b9</sup>	$\frac{1}{2}$ – $1\frac{1}{2}$ – 1	1 – $\flat$ 2 – 3 – $\sharp$ 4	Hungarian Spanish

Both the Harmonic and the Lydian<sup>b9</sup> tetrachords are displayed below with an added tone<sup>1</sup> –  $\sharp$ 2 or Tension  $\sharp$ 9 – to fill up the “harmonic gap” of  $1\frac{1}{2}$  (whole tone + semitone gap).

**Major dominant: C7 or C7sus4 [Mixolydian]**

WT

1 T9 3 Av11 5 T13 b7 (1)  
Major tetrachord      minor tetrachord

**Major  $\flat$ 6 dominant: C7 or C7sus4 [Mixolydian  $\flat$ 9]**

WT

1 T $\flat$ 9 T $\sharp$ 9 3 Av11 5 T13 b7 (1)  
Harmonic tetrachord +  $\sharp$ 9      minor tetrachord

**Harmonic dominant: C7 or C7sus4 [Spanish Phrygian]**

WT

1 T $\flat$ 9 T $\sharp$ 9 3 Av11 5 T $\flat$ 13 b7 (1)  
Harmonic tetrachord +  $\sharp$ 9      Phrygian tetrachord

**Melodic dominant: C7 or C7sus4 [Mixolydian  $\flat$ 13]**

WT

1 T9 3 Av11 5 T $\flat$ 13 b7 (1)  
Major tetrachord      Phrygian tetrachord

**Lydian dominant: C7 [Lydian b7]**

st

1 T9 3 T $\sharp$ 11 5 T13 b7 (1)  
Lydian tetrachord      minor tetrachord

**Symmetrical dominant: C7 [Dim 1/2 - 1]**

st

1 T $\flat$ 9 T $\sharp$ 9 3 T $\sharp$ 11 5 T13 b7 (1)  
Lydian b9 tetrachord +  $\sharp$ 9      minor tetrachord

**Altered dominant: C7 [Altered]**

st

1 T $\flat$ 9 T $\sharp$ 9 3 T $\sharp$ 11 (5) T $\flat$ 13 b7 (1)  
Lydian b9 tetrachord +  $\sharp$ 9      Phrygian tetrachord

**Whole Tone dominant: C7 [Whole Tone]**

st

1 T9 3 T $\sharp$ 11 (5) T $\flat$ 13 b7 (1)  
Lydian tetrachord      Phrygian tetrachord

The **bold** names, for the “Basic” dominants, are **parent scales**.  
The *italic* names, for the “Lydian” dominants, are *dominant types*.

<sup>1</sup> Somehow becoming a “pentachord”, a series of 5 consecutive diatonic tones.

## MODAL CHANGES ON DOMINANT CHORDS

We've just learned that it's common to use these chord scales to target a Major chord:

(“Basic”)	[Mixolydian]	or (its “Lydian” alternative)	[Lydian <sup>b7</sup> ]
	[Mixolydian <sup>b9</sup> ]	or	[Diminished ½-1]

While it's common to use these chord scales to target a minor chord:

[Spanish Phrygian]	or	[Altered]
[Mixolydian <sup>b13</sup> ]	or	[Whole Tone]

However, Modal Changes (see page 197) are possible too. Better, they're quite common too. Anyone of the eight chord scales can actually be used on any dominant chord you encounter in a song, providing multiple options for dominant chords.

For example: When you use the minor Harmonic-V7 [Spanish Phrygian] to replace an originally Major-V7 [Mixolydian], you actually play a Modal Change since you change from the Major mode (or parent scale) to the minor mode (or parent scale).

Likewise, when you use the [Altered] dominant to replace an originally [Lydian<sup>b7</sup>] dominant, you actually kind of play the same Modal Change, since you also change from “Major” to “minor”<sup>1</sup>.

Some of these Modal Changes seem easier to use than others. That is because it's a lot easier to change modes from *bright* – read “with less lowered degrees” – to *dark* – read “with more lowered degrees” – and then back again, than to do the opposite. So, it's useful to classify these dominants by brightness:

From Bright to → Dark	“Basic” Dominants	tensions <sup>2</sup>	avoids	“Lydian” Equivalents	tensions	Mode (parent scale)
	[Mixo]	9 13	11	[Lyd <sup>b7</sup> ]	9 #11 13	Major
	[Mixo <sup>b9</sup> ]	♭9 13	11	[Dim ½-1]	♭9 #11 13	Major (Major <sup>b6</sup> )
	[Mixo <sup>b13</sup> ]	9 ♭13	11	[Wh.T]	9 #11 ♭13	minor (Melodic)
	[Sp.Phr]	♭9 ♭13	11	[Alt]	♭9 #11 ♭13	minor (Harmonic)

Changing from *dark* to *bright* is also possible though, but it definitely needs a more “resolute attitude” and a “clearer, stronger” phrasing.

If Modal Changes are possible, then obviously any dominant chord scale can target either a Major or a minor chord.

You should now try to play ‘I Should Care’ <sup>3</sup> (or any other song for that matter), replacing the “expected” dominants by their Lydian and/or Modal equivalent(s).

<sup>1</sup> Remember that there is no parent scale for “Lydian” dominants, but that they still originated from Major and minor modes.

<sup>2</sup> Remember that ♭9 also comes with #9. I deliberately left #9 out of this table for convenience.

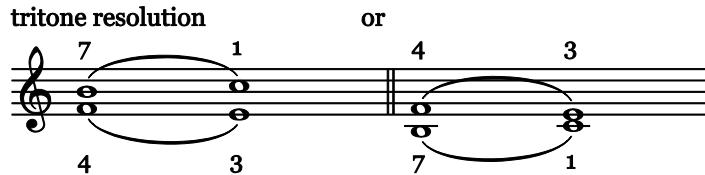
<sup>3</sup> See Analysis of a Song with Secondary II-V Cadences (page 121).

## Substitution Dominants

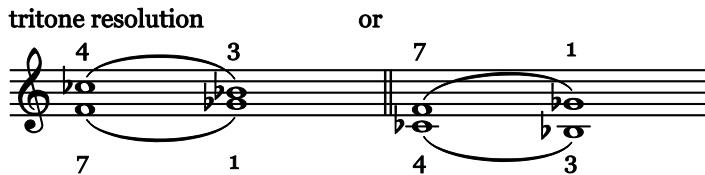
### TRITONE SUBSTITUTION

One of the main characteristics of dominant chords is that they include the tritone (4<sup>th</sup> and 7<sup>th</sup> degree) of the tonality.

Remember how the tritone resolves when G7 (V7) resolves to C (I).



If F (4<sup>th</sup> degree of C Major in the example above) was the 7<sup>th</sup> degree of G♭ Major; and B (7<sup>th</sup> degree of C Major in the example above) was the 4<sup>th</sup> degree of G♭ Major (enharmonically changed to C♭ for the purpose of this demonstration) – both tones obviously still forming a tritone – this is how the resolution would be when D♭7 (V7) resolves to G♭ (I).



The G♭ tonic is situated one tritone above, or below, the tonic C.

So, every tritone (degrees 4 and 7) can be found (enharmonically) in two different tonalities (or Major scales) separated themselves by a tritone (C Major and G♭ Major in the example above). That means that the dominant chords of both tonalities – G7 and D♭7 respectively – share the same tritone.

Consequently, D♭7, with its tritone, can be used to resolve to C (instead of G♭).

Likewise, G7, with its tritone, can be used to resolve to G♭ (instead of C).



In other words, both dominants, sharing the same tritone, separated themselves by a tritone, can replace – or substitute – each other. This is called a **Tritone Substitution**.

D♭7 is **SubV7/C** – *substitution dominant of C*.

G7 is **SubV7/G♭** – *substitution dominant of G♭*.

### Characteristics of Sub-V7 Chords

- They are built on the lowered 2<sup>nd</sup> degree of the tonality (or target chord), being the root of the SubV7-chord itself.
- They include the tritone, 4<sup>th</sup> and 7<sup>th</sup> degree of the tonality (or target chord), being the 3<sup>rd</sup> and b7<sup>th</sup> degree respectively of the SubV7-chord itself.

## CHORD SCALES FOR SUBV7 CHORDS

The standard chord scale for a SubV7-chord is the [Lydian<sup>b7</sup>] scale.

D<sup>b</sup>7 [Lydian <sup>b7</sup>]

1      2      3      #4      5      6      b7

Note that G – the actual dominant degree of C – is still present in this chord scale as T#11.

When this scale is played starting on G, and using enharmonic writing (B<sup>b</sup> = A<sup>#</sup>, C<sup>b</sup> = B, D<sup>b</sup> = C<sup>#</sup>), one becomes the G7 [Altered] scale.

G7 [Altered]

1      b2      #2      3      #4      (no 5th)      b6      b7

That means that one *could* consider the SubV7 [Lydian<sup>b7</sup>] chord as an inversion of the V7 [Altered] chord on its Tension #11 – one tritone higher (or lower) → G7alt/C<sup>#</sup> or G7alt/D<sup>b</sup>. *Could*, because an inversion doesn't normally happen on a tension, but usually only on chord tones 3, 5 or b7.

It works in the opposite way too: D<sup>b</sup>9/G – SubV9 **on** V, a hybrid chord – is a quite common chord symbol that stands for G7alt, indeed a G7 chord with #11 (D<sup>b</sup> or C<sup>#</sup>), b7 (F), b9 (A<sup>b</sup>), 3 (C<sup>b</sup> or B) and b13 (E<sup>b</sup>) → tritone + all altered tensions.

G<sup>b9</sup>/C<sup>#</sup>  
[G Alt]

D<sup>b9#11</sup>  
[D<sup>b</sup> Lyd b7]

G<sup>7alt.</sup>  
[G Alt]

D<sup>b9</sup>/G  
[G Alt]

SubV7-chords are not that common on the score (but not that rare either). But knowing the inversion possibilities mentioned above, they are used a lot when re-harmonizing the score, even in the heat of the improvisation. On the score below you'll find just a few of the many re-harmonization possibilities with SubV7-chords starting with a “regular” I<sup>Δ</sup> – VI<sup>m7</sup> – II<sup>m7</sup> – V7 turnaround.

- Bar 1 and 2: the “regular” I<sup>Δ</sup> – VI<sup>m7</sup> – II<sup>m7</sup> – V7 turnaround.
- Bar 3 and 4: re-harmonization with extended dominants. The bass line – a “cliché” in Jazz – comes with downward leading tones (approach tones) towards the target chord.
- Bar 5 and 6: the approach tones of the bass are now re-harmonized with SubV7-chords.
- Bar 7 and 8: the extended dominants are all played [altered]. The chord symbols show the possible inversions SubV7/V.
- Bar 9 and 10: the extended dominants are all replaced by their SubV7-chords.
- Bar 11 and 12: a possible construction with the diatonic II<sup>m7</sup>.
- Bar 13 and 14: a possible construction with the diatonic VI<sup>m7</sup>.

The score illustrates dominant chord scales across four systems. Each system contains eight chords with their corresponding parent scales and chord scale choices. Dotted arrows and hooks are used to indicate specific scale movements, such as downward perfect fifths and minor seconds.

The downward semitone movement of the bass (roots of the chords) is indicated by dotted hooks and arrows:

Full arrow		downward perfect fifth to target
Dotted arrow		downward minor second (semitone) to target
Full hook		downward perfect fifth from Relative-II to (Sub)V7
Dotted hook		downward semitone from Relative-II to (Sub)V7

The chord scale choices for all SubV7-chords is the [Lyd<sup>b7</sup>] scale.

The chord scale choices for the “regular” dominants is (more or less) random.<sup>1</sup>

<sup>1</sup> I left the parent scale line out of the analysis since most dominant chord scales used are not issued from any parent scale of C.

### ***Other Optional Chord Scales for SubV7-chords***

The other dominant chord scale options for SubV7-chords are not commonly used. But exploring the possibilities can be quite interesting.

Since the SubV7-chords can be considered an inversion of the “regular” V7 on its tension #11, all “inversions” of the “Lydian” G7 chord scales could be used for the SubV7.

G7 [Altered] (see above)	inverted on its #11	→ D♭7 [Lydian <sup>b7</sup> ]
G7 [Lydian <sup>b7</sup> ]	inverted on its #11	→ D♭7 [Altered]

The symmetrical chord scales, when inverted, give the same symmetrical chord scales (obviously, *since* they are symmetrical).

G7 [Diminished ½-1]	inverted on its #11	→ D♭7 [Diminished ½-1]
G7 [Whole Tone]	inverted on its #11	→ D♭7 [Whole Tone]

The “Basic” chord scale options [Mixo], [Mixo<sup>b9</sup>], [Sp.Phr] and [Mixo<sup>b13</sup>] have no connection with the “regular” *substituted* V7-dominant. Indeed, none of these “Basic” chord scales include the G tone (tension #11 of D♭7), dominant tone of C. Without the G tone, the chord loses its powerful con-centric function towards the target.

All “Basic” chord scales include G♭ instead (Av11 of D♭7). And that G♭ tone *can* be used as an upward leading tone (F♯) towards G, the fifth of the target chord C. That implicates that SubV7-chords *could* also become SubV7sus4-chords.

<b>Optional chord scales for SubV7 – including tension #11 (inversions of the “Lydian” V7 chord scales)</b>		
SubV7 <sup>#11</sup>	[Lydian <sup>b7</sup> ] = standard	(no parent scale) – Major or minor target
SubV7alt	[Altered]	(no parent scale) – Major or minor target
SubV7 <sup>b9-13</sup>	[Diminished ½-1]	(no parent scale) – Major or minor target
SubV7 <sup>9+b13</sup>	[Whole Tone]	(no parent scale) – Major or minor target

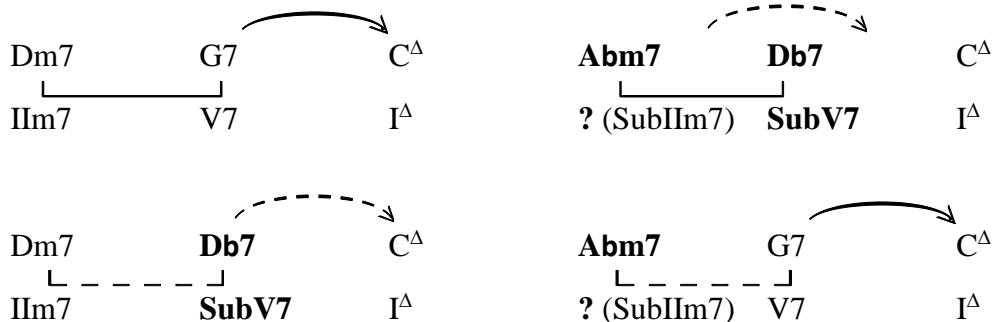
<b>Alternative (less common) chord scales for SubV7 – including avoid 11 (or sus4) (NOT inversions of the V7 chord scales)</b>		
SubV7 <sup>13</sup>	[Mixolydian]	(no parent scale) – Major or minor target
SubV7 <sup>b9+b13</sup>	[Spanish Phrygian]	(no parent scale) – Major or minor target
SubV7 <sup>b9-13</sup>	[Mixolydian <sup>b9</sup> ]	(no parent scale) – Major or minor target
SubV7 <sup>9+b13</sup>	[Mixolydian <sup>b13</sup> ]	(no parent scale) – Major or minor target

## SUB-CADENCES

Still less common, but possible also: SubV7, being a dominant chord, can be preceded by its own Relative-II chord called the SubIIm7 chord, or *substitution IIm7* chord. The SubIIm7 chord should be analyzed, as for all relative-II chords, with a Roman numeral indicating its primary function<sup>1</sup>, if any, otherwise with a question mark (= no primary function, or, possibly a modal change).

*Every V7 chord can be replaced by its SubV7 chord.  
Every IIm7 chord can be replaced by its SubIIm7 chord.*

Consequently, all following cadences are possible: the “regular” II-V cadence and 3 variants.



## Chord Scales for SubIIm7-chords

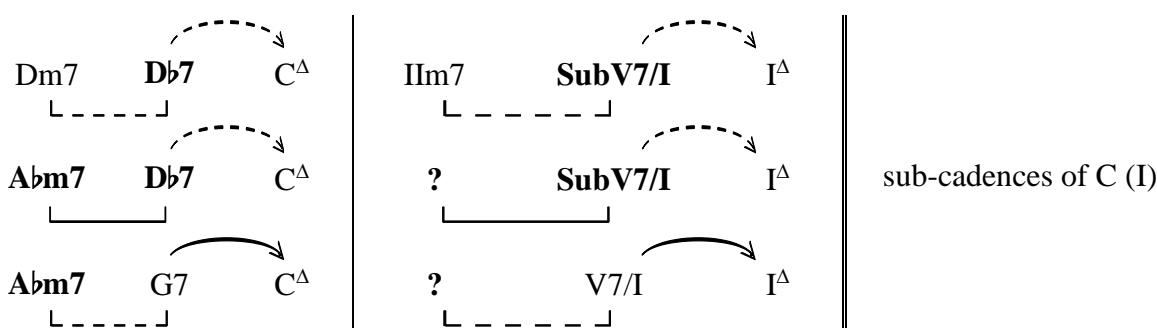
The standard chord scale for a SubIIm7 is the [Dorian] chord scale, which is not related to any parent scale of the target. But, remember that there are usually multiple options for Relative-II chords, depending on how you hear the possible residual tones (or the possible modal change).

The “stricter rule” though (ignoring the multiple options) for a SubII-SubV Cadence is

**SubIIm7 [Dorian]    SubV7 [Lydian<sup>b7</sup>]**

## List of Sub-Cadences

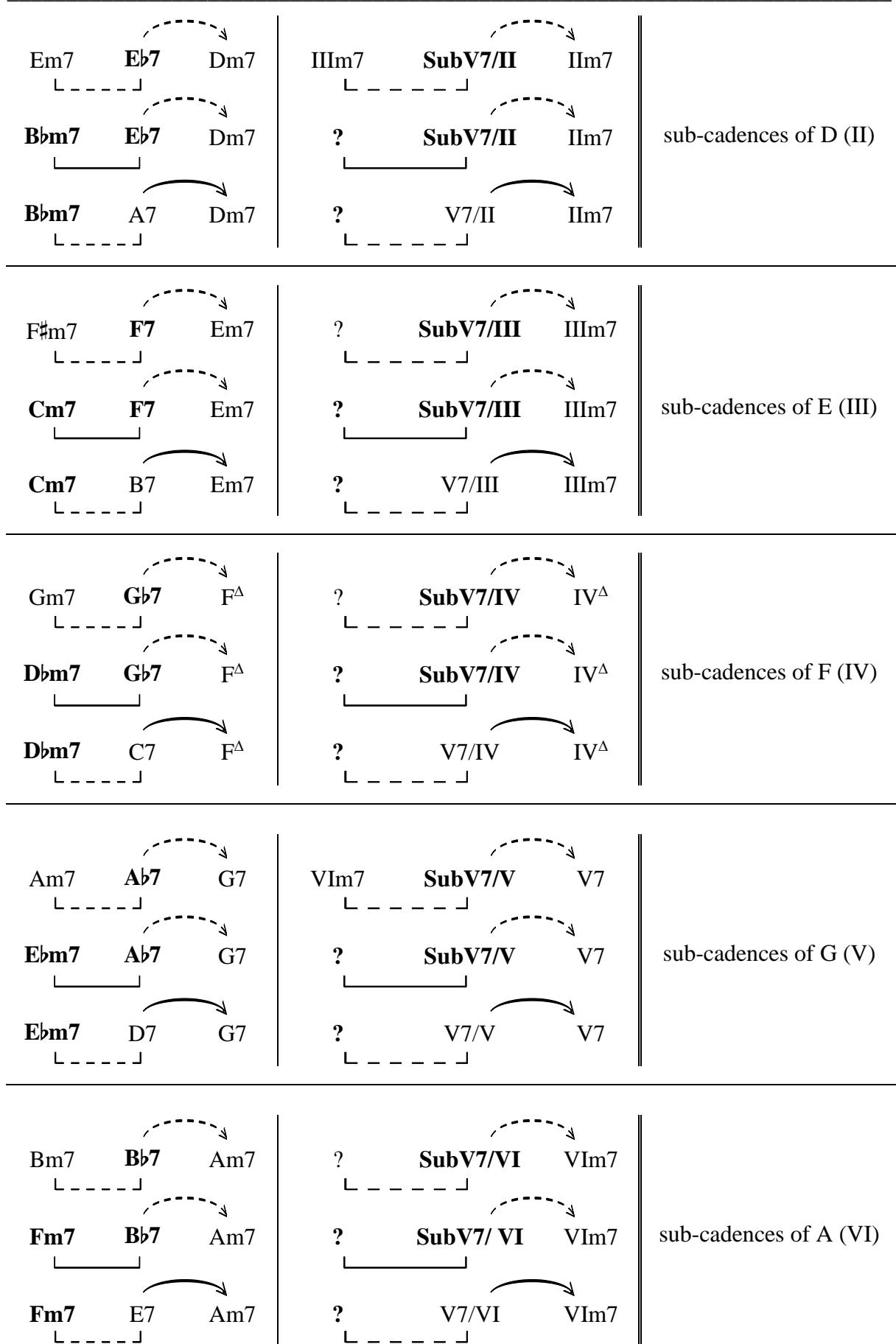
This (already quite long) list does not include the “regular” II-V cadences<sup>2</sup>, nor the possible alternative minor cadences<sup>3</sup> with Relative-IIm7<sup>b5</sup><sup>5</sup>.

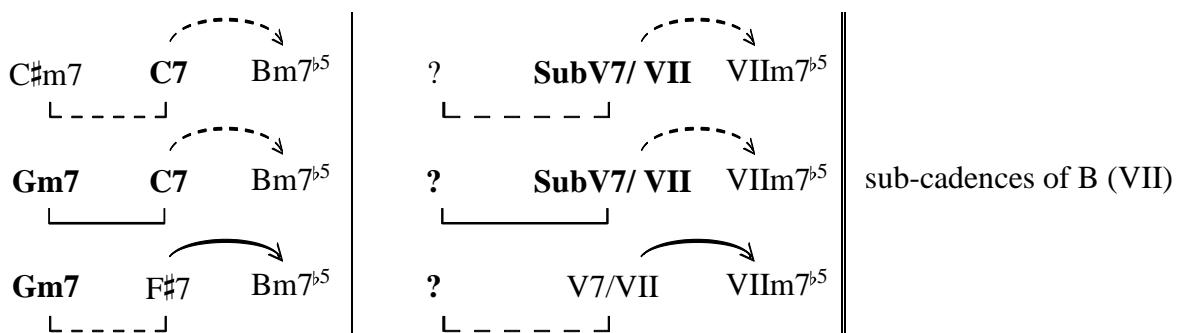


<sup>1</sup> See Primary Functions of Relative-II Chords (page 210).

<sup>2</sup> Please refer to the List of Secondary II-V Cadences (page 115).

<sup>3</sup> A minor SubIIm7<sup>b5</sup> [Locrian] is not common at all, though strictly theoretically, it is imaginable.





We'll be able to fill in most question marks with a *modal analysis* later.

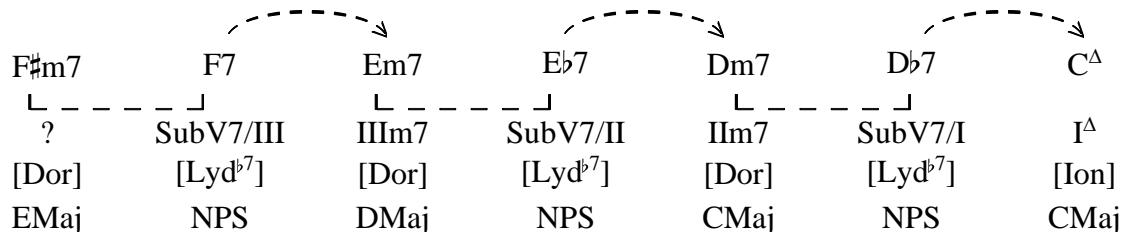
## EXTENDED II-V CADENCES WITH SUB-CADENCES

There are six possible combinations of extended II-V cadences with sub-cadences. In these complex constructions, it becomes increasingly difficult to try and find some logic in the parent scales<sup>1</sup>. It's definitively easier to focus on chord scales, and to keep to the "stricter rules", considering every relative-II as a [Dorian] chord and every dominant as a [Lydian<sup>b7</sup>] dominant, whether a substitution dominant or not. I'll do just that in the following examples, though don't – never – forget the multiple options.

To give "some" clarity in the parent scales, I'll use

- The abbreviation NPS to indicate that there is no parent scale to the chord used<sup>2</sup>
- (CMaj) – between brackets – for parent scales that keep *some* logic with the context, being related to the (more or less) *expected* target, but not to the *actual* target.

### 1. Relative-II chords resolving in semitones – Dominants resolving *directly* in semitones



Unlike the "regular" *direct* extended II-V cadences<sup>3</sup> – with a root motion in downward fifths – these cadences have a root motion in downward semitones. But, like the "regular" direct extended II-V cadences, they follow a *downward whole step pattern*, each cadence being one whole tone below the former.

<sup>1</sup> When we'll see how to replace the question marks by *modal chords*, some kind of logic can be found again. See Modal Changes (page 197).

<sup>2</sup> I.e. no parent scale directly related to the context. You can always find *some* parent scale, to any chord. But if that parent scale doesn't relate to, either the target chord, or the expected target chord, or the main key, it might just add yet more confusion, having nothing to do with the context.

<sup>3</sup> See Extended II-V Cadences (page 119).

2. Relative-II chords resolving in semitones – Dominants resolving *indirectly* in semitones

Em7	E <sup>b</sup> 7	E <sup>b</sup> m7	D7	Dm7	D <sup>b</sup> 7	C <sup>A</sup>
III <sup>m</sup> 7	SubV7/II	?	V7/V	II <sup>m</sup> 7	SubV7/I	I <sup>A</sup>
[Dor]	[Lyd <sup>b7</sup> ]	[Dor]	[Lyd <sup>b7</sup> ]	[Dor]	[Lyd <sup>b7</sup> ]	[Ion]
DMaj	NPS	D <sup>b</sup> Maj	NPS	CMaj	NPS	CMaj

Unlike the “regular” *indirect* extended II-V cadences – that follow a downward fifths pattern – these cadences follow a *downward semitone pattern*, each cadence being a semitone below the former. But, like the “regular” indirect extended II-V cadences, they also use pivotal bass tones in the root motion, each time the dominant changes to the next relative-II chord. These cadences alternate substitution dominants with secondary dominants. But since these secondary dominants (V7/V in the example above) also resolve in semitones, they kind of sound like substitution dominants, hence the [Lyd<sup>b7</sup>] chord scale option.

3. Relative-II chords resolving in fifths – Dominants resolving *directly* in semitones

Cm7	F7	Em7	A7	A <sup>b</sup> m7	D <sup>b</sup> 7	C <sup>A</sup>
?	SubV7/III	III <sup>m</sup> 7	V7/II	?	SubV7/I	I <sup>A</sup>
[Dor]	[Lyd <sup>b7</sup> ]	[Dor]	[Lyd <sup>b7</sup> ]	[Dor]	[Lyd <sup>b7</sup> ]	[Ion]
(B <sup>b</sup> Maj)	NPS	(DMaj)	NPS	(G <sup>b</sup> Maj)	NPS	CMaj

These cadences follow an *upward Major thirds pattern*, each cadence being one Major third higher than the former. They close the cycle after just three “jumps”: if you’d replace the ending C<sup>A</sup> chord by the starting Cm7 chord, you’d be turning on exactly the three same cadences all over again.

4. Relative-II chords resolving in fifths – Dominants resolving *indirectly* in semitones

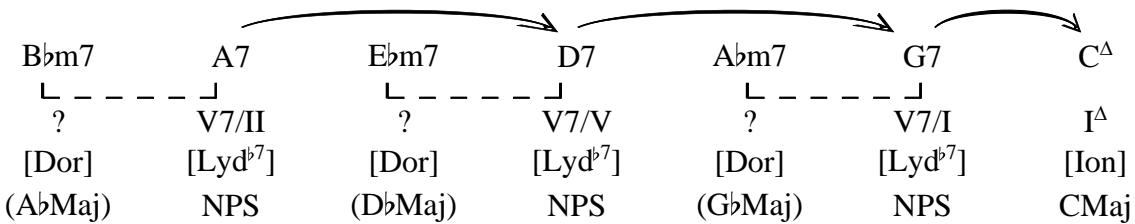
B <sup>b</sup> m7	E <sup>b</sup> 7	Am7	D7	A <sup>b</sup> m7	D <sup>b</sup> 7	C <sup>A</sup>
?	SubV7/II	V <sup>m</sup> 7	V7/V	?	SubV7/I	I <sup>A</sup>
[Dor]	[Lyd <sup>b7</sup> ]	[Dor]	[Lyd <sup>b7</sup> ]	[Dor]	[Lyd <sup>b7</sup> ]	[Ion]
(A <sup>b</sup> Maj)	NPS	(GMaj)	NPS	(G <sup>b</sup> Maj)	NPS	CMaj

These cadences follow a *downward semitone pattern*, each cadence being a semitone lower than the former.

5. Relative-II chords resolving in semitones – Dominants resolving *directly* in fifths

Cm7	B7	Em7	E <sup>b</sup> 7	A <sup>b</sup> m7	G7	C <sup>A</sup>
?	V7/III	III <sup>m</sup> 7	SubV7/II	?	V7/I	I <sup>A</sup>
[Dor]	[Lyd <sup>b7</sup> ]	[Dor]	[Lyd <sup>b7</sup> ]	[Dor]	[Lyd <sup>b7</sup> ]	[Ion]
(B <sup>b</sup> Maj)	NPS	(DMaj)	NPS	(G <sup>b</sup> Maj)	NPS	CMaj

These cadences follow an *upward Major thirds pattern*, each cadence being one Major third higher than the former. They close the cycle after just three “jumps”.

6. Relative-II chords resolving in semitones – Dominants resolving *indirectly* in fifths

These cadences follow a *downward fifth pattern*.

The possible combinations with all chords resolving in fifths, *directly* or *indirectly*, are the “regular” extended II-V cadences we’ve seen in the section on Extended II-V Cadences (page 119).

## ANALYSIS WITH SUB CADENCES

Let’s first review the B-part of ‘I Should Care’.<sup>1</sup>

**I Should Care (Cahn/Stordahl/Weston) - B part**

17 F#m7(b5) B7(b9) Em7 A7 Dm7 G7 C $\Delta$   
 ? V7/III [Sp.Ph] IIIm7 V7/II [Mixo] II $m^7$  [Dor] V7 [Mixo] I $\Delta$  [Ion]  
 Em Nat \_\_\_\_\_ Em Harm \_\_\_\_\_ D Maj \_\_\_\_\_ C Maj \_\_\_\_\_

21 Em7(b5) A7(sus4) A7 Dm7 Fm7 Bb7  
 ? V7sus/II [Sp.Ph] V7/II [Dor] II $m^7$  [Dor] ? SubV7/VII [Lyd  $\flat$ 7]  
 Dm Nat \_\_\_\_\_ Dm Harm \_\_\_\_\_ C Maj \_\_\_\_\_ (E $\flat$  Maj) \_\_\_\_\_ NPS

25 Am7 Bm7(b5) E7(b9) Am Am/G D7/F $\sharp$  Fm6  
 VI $m^7$  [Aeol] VIIm7 $\flat$ 5 [Locr] V7/VI [Sp.Ph] VI $m$  [Mel] VI $m^7$  [Dor] V7/V [Mixo] ?  
 C Maj \_\_\_\_\_ Am Nat \_\_\_\_\_ Am Harm \_\_\_\_\_ Am Mel \_\_\_\_\_ G Maj \_\_\_\_\_ ? \_\_\_\_\_

29 C/E Eb Dm7 G7 C $\delta$  F7 Em7 A7  
 I [Ion] ? II $m^7$  [Dor] V7 [Mixo] I $\delta$  [Ion] SubV7/III [Lyd  $\flat$ 7] III $m^7$  [Dor] V7/II [Mixo]  
 C Maj \_\_\_\_\_ ? \_\_\_\_\_ C Maj \_\_\_\_\_ NPS D Maj \_\_\_\_\_

<sup>1</sup> © 1943, 1945 Hanover Music, Cahn Music & Dorsey Bros. Music

- Bar 24: This II-V cadence *could* be analyzed as a SubII-SubV cadence of VIm7. We'll see in the part on Modal Changes (page 197) that these chords are more commonly analyzed as minor subdominants.
- Bar 31: The F7 chord can be analyzed as a SubV7/III. But it could also be analyzed as yet another type of modal change.

Now let's analyze the B-part of 'Autumn Leaves'<sup>1</sup> (by Joseph Kosma), a song in G minor, but still analyzed in its relative key of B♭ Major.

**Autumn Leaves (B-part) - Joseph Kosma (1905 - 1969)**

The musical score consists of four staves of music. Below each staff, analysis is provided for each chord, including the chord name, its function, and the specific mode or scale used. The analysis is as follows:

- Staff 1:** Am7<sup>b5</sup> (VIIIm7<sup>b5</sup> [Locr] B♭ Major), D7 (V7/VI [Alt] NPS), Gm (VIm [Mel] Gm Melodic).
- Staff 2:** Cm7 (IIIm7 [Dor] B♭ Major), F7 (V7 [Lyd b7] NPS), B♭A (Imaj7 [Ion] B♭ Major), E♭A (IVmaj7 [Lyd]).
- Staff 3:** Am7<sup>b5</sup> (VIIIm7<sup>b5</sup> [Locr]), D7 (V7/VI [Sp.Phr] Gm Harmonic), Gm (VIm [Dor] F Major), G♭7 (SubV7/V [Lyd b7] NPS), Fm7 (SubV7/IV [Lyd b7] E♭ Major), E7 (SubV7/IV [Lyd b7] NPS).
- Staff 4:** E♭A (IVmaj7 [Lyd] B♭ Major), Am7<sup>b5</sup> (VIIIm7<sup>b5</sup> [Locr]), D7 (V7/VI [Alt] NPS), Gm (VIm [Dor] Gm Dorian).

### Notes on the analysis

Once again, the choices I've made are purely illustrative. Other choices could have been made just as well.

- Bar 2 (not counting the pick-up bar): D7 [Alt] for *improvisation* only! Actually, multiple options. I've opted for the *lydian* equivalent of the expected [Sp.Phr] dominant, ignoring the melody that, with tones A (5<sup>th</sup>) and G (Av11), requires the expected [Sp.Phr] at least, or any *basic* dominant chord scale (see also bar 10).
- Bar 3-4: Gm [Mel]. Actually, multiple options.
- Bar 6: F7 [Lyd<sup>b7</sup>]. Actually, multiple options.  
I've opted for the *lydian* equivalent of the expected [Mixo] dominant.

<sup>1</sup> © 1947, 1950, 1987 Enoch Et Cie. (renewed 1975, 1978)

- Bar 10: D7 [Sp.Phr]. Actually, multiple options.  
Here, I've opted for the expected [Sp.Phr] dominant, respecting the A in the melody, the 5<sup>th</sup> of the chord that usually is left out of the [Alt] scale. But, when improvising, i.e. *without* the melody being played, your options open up.
- Bar 11-12: Gm [Dor] – G $\flat$ 7 [Lyd $\flat^7$ ] – Fm7 [Dor] – E7 [Lyd $\flat^7$ ]. Actually, multiple options.  
I've opted for the “stricter rule”, [Dor] – [Lyd $\flat^7$ ], to enhance the parallelism of the two extended sub cadences.
- Bar 14: D7 [Alt], no conflict with the melody this time. Actually, multiple options.  
Same as bar 2.
- Bar 15-16: Gm [Dor]. Actually, multiple options.

## APPROACH CHORDS AND AUXILIARY CHORDS

**Approach chords and auxiliary chords** are (mostly) *non-functional* chords that are built with diatonic and/or chromatic approach tones to the chord tones of their target chord. The *bass motion* – and not necessarily the *root motion* – plays a fundamental role.

*Approach chords* have a bass that *resolves up or down a semitone* to the bass – again, not necessarily the root, but sometimes also to another chord tone (3<sup>rd</sup>, 5<sup>th</sup> or 7<sup>th</sup>) – of their target chord; *auxiliary chords* have a *static* bass, they share *the same bass* as their target chord (pivot bass).

## Diminished Chords

The most used approach and auxiliary chords are **diminished chords**. Diminished chords are symmetrical chords. They're a piling-up of three minor thirds: root – minor third – diminished fifth – diminished seventh (1 – ♭3 – ♭5 – ♭7). Adding another minor third, above the diminished seventh, brings us back to the root.<sup>1</sup> Another striking characteristic is that they include two diminished fifths – or “tritones” – (1) from 1 to ♭5 and (2) from ♭3 to ♭7.



mostly written enharmonically like this



There are three types of diminished chords:

- two *approach* chords – the *upward* and *downward* diminished chords
- one *auxiliary* chord – the *static* diminished chord

### THE UPWARD DIMINISHED CHORD

This chord is often seen as a *non-functional* approach chord, though it is in fact a full *functional dominant* VII° chord that includes the tritone (4 and 7) of the tonality. That's also why this chord is used a lot more than the downward or static diminished chords.

18<sup>th</sup> and 19<sup>th</sup> century Classical composers used this chord a lot, most often in minor keys<sup>2</sup>, but also in Major keys<sup>3</sup>, as a substitution chord to the dominant V7.

<sup>1</sup> There's yet another symmetrical chord that is a piling-up of *Major* thirds, the augmented triad: a triad with a Major third and an augmented fifth (1 – 3 – #5) → C♯ or C+. Adding a Major third above the augmented fifth brings us back to the root of the chord. This chord is mostly used as a dominant chord, usually targeting a minor chord, replacing either the whole tone dominant or the altered dominant. Its “augmented fifth” is in fact tension ♭13, announcing the minor third of the target chord. See [The Four “Lydian” Dominants](#) (page 130).

<sup>2</sup> See

[The Harmonic-VII° Dominant Chord](#) (page 174).

<sup>3</sup> See [Main Major b6 Chords](#) (page 199).

The *approach* feature of the  $VII^\circ$  chord becomes obvious when you look at the resolution of both the diminished fifths (“tritones”), almost completely in semitones. Each chord tone, but one, is an upward or downward leading tone towards a chord tone of the target chord.

The upward diminished chord  $VII^\circ$

- is built on the 7<sup>th</sup> degree of the tonality (of the target chord)
- its root resolves with an upward semitone to the root of its target chord
- includes the tritone of the tonality of its target chord and is therefore more than “just a non-functional approach” chord, it is a full functional dominant chord.

## Secondary $VII^\circ$ Dominant Chords

*Any dominant chord, secondary and substitution<sup>1</sup> dominants included, can be replaced by a diminished chord built on its Major third, becoming a primary or secondary  $VII^\circ$ .*

In jazz analysis, it's common to analyze a secondary  $VII^\circ$  chord as “just a non-functional upward diminished approach chord”. Diminished chords are usually analyzed with a Roman numeral that situates them *exactly where they are* in the tonality.

Let's list all the possible secondary  $VII^\circ$  dominants for a song in C Major:

Commonly analyzed as					
$B^\circ$	$C^\Delta$	$VII^\circ$	$I^\Delta$	$VII^\circ$	$I^\Delta$
$C^\#^\circ$	Dm7	$VII^\circ/II$	$IIIm7$	$\#I^\circ$	$IIIm7$
$D^\#^\circ$	Em7	$VII^\circ/III$	$IIIIm7$	$\#II^\circ$	$IIIIm7$
$E^\circ$	$F^\Delta$	$VII^\circ/IV$	$IV^\Delta$	$III^\circ$	$IV^\Delta$
$F^\#^\circ$	G7	$VII^\circ/V$	V7	$\#IV^\circ$	V7
$G^\#^\circ$	Am7	$VII^\circ/VI$	$VIIm7$	$\#V^\circ$	$VIIm7$
$A^\#^\circ$	$Bm7^{b5}$	$VII^\circ/VII$	$VIIIm7^{b5}$	$\#VI^\circ$	$VIIIm7^{b5}$

<sup>1</sup> If you replace a substitution dominant – e.g.  $D\flat 7$  to C – by a diminished chord built on its third, you get a  $F^\circ$  chord that is an inversion of the  $B^\circ$  chord, thus resulting in exactly the same chord. See inversions on the next page.

## Inversions of Diminished Chords

Since diminished chords are symmetrical chords, any chord tone can be the root of another diminished chord using exactly the same chord tones.

So, when using inversions, it's common to write "another" diminished chord instead of the heavier slash chord symbol.

VII° inversed	target chord	"other" dim chord	target chord
B°/D to	Cm/Eb	is written	D° to Cm/Eb
B°/F to	C/E	is written	F° to C/E
B°/Ab to	C/G	is written	Ab° to C/G

Note the typical *semitone motion* of the bass going to the inversed target chord.

This often leads to confusion. Indeed, both F° going to C/E, and Ab° going to C/G, look like *downward* diminished chords while they are in fact inversions of an *upward* diminished chord. Moreover, on scores that aren't written with the necessary discipline – scores where the copyist forgot to use slash chord symbols to indicate the inversions of the target chord – you might find D° going to Cm, F° going to C, or Ab° going to C, i.e. *without* the typical semitone motion of the bass.

## CHORD SCALES FOR DIMINISHED CHORDS

### The [Diminished 1-½] chord scale

The most typical, standard and convenient chord scale for diminished chords is the octotonic [Symmetrical Diminished] scale. This scale is more commonly known as the [Diminished 1-½], "whole-half" meaning that it alternates a whole step with a semitone.

VII° looks like an inversion of the V7<sup>b9</sup>-chord on its third, without the root.

And, indeed, the [Diminished 1-½] ("whole-half") chord scale is itself an inversion of the [Diminished ½-1] ("half-whole") used for the Symmetrical Dominant V7<sup>b9/13</sup>.

Note the “odd” tension 7 in the [Dim 1½] scale, one whole tone above the chord tone  $\flat 7$ . Remember how we saw that the seventh degree “by default” –  $\flat 7$  – can explode into two new “7<sup>th</sup>” degrees:  $\flat\flat 7$  and 7, creating an octotonic scale.<sup>1</sup>

Remember also that dominants (G7 [Dim ½-1] in the example above) including T13 usually target a Major chord, T13 being the Major third of the target chord<sup>2</sup>. Likewise, the [Dim 1½] chord scale, including T11 (or T13 of V7), would usually target a Major chord. Though, as for the V7 chords, modal changes are always possible.<sup>3</sup>

## Alternative Chord Scales

Just as the [Dim 1½] (the *symmetrical diminished* chord scale for *diminished* chords) is an inversion of the [Dim ½-1] (the *symmetrical dominant* chord scale for *dominant* chords), *any* inversion of a V7 chord scale including Tb9 – i.e. the diminished 7<sup>th</sup> ( $\flat\flat 7$ ) of the VII°-chord – is possible for upward diminished chords.

### *The [Ultra-Locrian] chord scale*

We’ll see in the next part, on minor Functional Harmony, that The Harmonic minor Parent Scale (page 172) generates a diatonic VII°-chord with an [Ultra-Locrian] chord scale. This scale can be more conveniently seen as an inversion of the [Spanish Phrygian] scale used for the Harmonic-V7 $^{\flat 9/\sharp 13}$ .

The [Ultra Locrian] VII°, being a chord issued from the harmonic minor parent scale, consequently includes the minor third of its target chord, i.e. Tb11 (or Tb13 of V7). Therefore, the [Ultra Locrian] chord scale usually targets a minor chord; but again, modal changes are possible.

Since both VII° and V7<sup>9</sup> are dominant chords, the first being heard as an inversion of the second, they share exactly the same tension *tones* and avoid *tones* (not the same tension *degrees* and avoid *degrees*).

Tb11 (E♭ in the example above), though located one semitone above b3, keeps being an available tension, just like Tb13 (also E♭) is an available tension in the [Sp.Phr] scale.

Av9 (C in the example above) however is an avoid tone, just as Av11 is an avoid tone in the [Sp.Phr] scale. That avoid tone is often left out of the scale, avoiding the consecutive semitones 7, 1, b2 (A♯, B, C) at the same time.

<sup>1</sup> See Tonal Degrees and Modal Degrees (page 22).

<sup>2</sup> See Characteristics of Dominant V7 Chords (page 125).

<sup>3</sup> See Modal Changes on Dominant Chords (page 133).

### The [Locrian $\flat^7$ ] chord scale

We'll see in the part Modal Changes (page 197) that the Major $\flat^6$  parent scale generates a diatonic VII $^\circ$ -chord with a [Locrian $\flat^7$ ] chord scale. This scale can be more conveniently seen as an inversion of the [Mixolydian $\flat^9$ ] scale used for the Major $\flat^6$ -V7 $\flat^9$ .

The [Locrian $\flat^7$ ] VII $^\circ$ , being a chord issued from Major $\flat^6$  parent scale, consequently includes the Major third of its target chord, i.e. T11 (or T13 of V7). Therefore, the [Locrian $\flat^7$ ] chord scale usually targets a Major chord; but modal changes are possible.

The avoid C tone – Av $\flat$ 9 of VII $^\circ$  (i.e. Av11 of V7) – is often left out of the scale avoiding the consecutive semitones 7, 1, ♭2 (A $\sharp$ , B, C) at the same time.

### The [Ultra-Locrian $^9$ ] chord scale

An inversion of the V7 [Altered], also including ♭9, should also be possible. However, the [Altered] chord scale doesn't include a 5<sup>th</sup> degree (D in the example below). When inverted we would consequently miss the minor 3<sup>rd</sup> of the VII $^\circ$  chord. So, we need an [Altered] scale *with a 5<sup>th</sup> degree*, resulting in the VII $^\circ$  [Ultra-Locrian $^9$ ] chord scale.

This chord includes T $\flat$ 11 (i.e. T $\flat$ 13 of V7) usually targeting a minor chord.

The consecutive semitones 2, ♭3, ♭4 (C $\sharp$ , D, E $\flat$ ) give this scale a chromatic-like and clustered sound. To open up the sound one would opt to leave either one of these tones out of the scale, *even possibly the minor 3<sup>rd</sup> chord tone* (i.e. using the inversion of the “regular” [Altered] scale, *without its 5<sup>th</sup>*).

## Tetrachords Used in the Chord Scales

Given the relative complexity of these diminished chord scales – all with lowered tonal degree  $\flat 5$ , all with a “double” 7<sup>th</sup> degree,  $\flat\flat 7$  and 7, and some even with the lowered tonal degree  $\flat 4$  (that, in addition to the complexity, is to be considered a tension!) – the symmetrical [Dim 1-½] chord scale is definitely the most convenient, and also the most commonly used, standard scale for diminished chords.

But you actually might *hear* the link of the *upward* diminished chord to its parent scale, and/or to its substituted dominant. It might then be easier to think, and play, inversions of – i.e. relative scales to – the complex [Ultra Locr], [Locr $\sharp 7$ ] and [Ultra Locr $9$ ].

Relative scales			
Diminished chord scale	Parent scale	Dominant chord scale	Target chord
[Locrian $\flat 7$ ]	Major $\flat 6$	[Mixolydian $\flat 9$ ]	Major
[Diminished 1-½]	–	[Diminished ½-1]	
[Ultra Locrian]	Harmonic minor	[Spanish Phrygian]	minor
[Ultra Locrian $9$ ]	–	[Altered]	

Using the practical tetrachord construction also offers a convenient way to play and think these complex chord scales.

TETRACHORDS CHART			
Tetrachord name	Construction 1 = Whole Tone $\frac{1}{2}$ = semitone $1\frac{1}{2}$ = WT + st	Degree numerals	Alternate names
Major	1 – 1 – $\frac{1}{2}$	1 – 2 – 3 – 4	Ionian
minor	1 – $\frac{1}{2}$ – 1	1 – 2 – $\flat 3$ – 4	Dorian
Phrygian	$\frac{1}{2}$ – 1 – 1	1 – $\flat 2$ – $\flat 3$ – 4	
Harmonic	$\frac{1}{2}$ – $1\frac{1}{2}$ – $\frac{1}{2}$	1 – $\flat 2$ – 3 – 4	
Lydian	1 – 1 – 1	1 – 2 – 3 – $\sharp 4$	
Lydian $\flat 9$	$\frac{1}{2}$ – $1\frac{1}{2}$ – 1	1 – $\flat 2$ – 3 – $\sharp 4$	Hungarian Spanish
Diminished (Spanish)	$\frac{1}{2}$ – 1 – $\frac{1}{2}$	1 – $\flat 2$ – $\flat 3$ – $\flat 4$	Spanish = enharmonic 1 – $\flat 2$ – $\sharp 2$ – 3
minor $\flat 4$	1 – $\frac{1}{2}$ – $\frac{1}{2}$	1 – 2 – $\flat 3$ – $\flat 4$	

These scales are all *octotonic* scales. You need to add the tonic on top to complete the scale.

## THE DOWNWARD DIMINISHED APPROACH CHORD

The **downward diminished chord** looks a lot like the upward diminished chord, but it resolves with a downward semitone instead. And, whereas the upward diminished chord has a dominant function (including the tritone of the tonality of the target chord), the downward diminished chord is “just” an approach chord, without any other function: not Dominant, not Subdominant, not Tonic.

It’s mostly used as a chromatic *passage*<sup>1</sup> chord from one diatonic chord to another diatonic chord that’s one whole tone below – most commonly from III<sup>m7</sup> to II<sup>m7</sup>. Sometimes it’s also used just as an *approach* (or a *preparation* of the target chord, also called an *appoggiatura*<sup>2</sup> chord in Classical music).

I used enharmonic writing for an easier reading in this example:

- The A tone on the Eb° chord is its diminished 5<sup>th</sup> and *should* consequently be a Bbb.
- The C tone on the Eb° chord is its diminished 7<sup>th</sup> and *should* consequently be a Dbb.

The logic behind those chords is *contrapuntal*<sup>3</sup>, i.e. all chord tones (and chord scale tones) are *melodic preparations* (also called *anticipations*) or *melodic approaches* to the following chord tones (or chord scale tones). With enharmonic writing the *preparation* of the target chord is more obvious:

- The A tone prepares to (anticipates) the 5<sup>th</sup> of the target chord.
- The C tone prepares to (anticipates) the b7<sup>th</sup> of the target chord.
- The other tones – Eb and Gb – are chromatic approach tones to D and F respectively.

Note the typical *semitone motion* of the bass going down to the target chord. The Roman numeral in the analysis situates the chord *exactly where it is* in the tonality, bIII° going down to II<sup>m7</sup>.

Since this chord is just a chromatic approach chord, not linked in any way to the main key or tonality (i.e. not issued from any known parent scale, of C in the example above) there’s no easy way to determine its chord scale.

The chord scale most used for this type of chord is, again, the [Diminished 1-½] scale, with T9, T11, Tb13 and T7, because it comes with all tensions situated one whole step above the chord tones.

<sup>1</sup> There’s no real difference between an *approach* chord and a *passage* chord. The first just approaches coming from anywhere, whilst the other makes a junction between two chords separated by one whole tone.

<sup>2</sup> See Chromatic approaches (page 85).

<sup>3</sup> In *counterpoint* – a music writing technique that developed with the polyphony in the late Middle Ages and the Renaissance, and that was used a lot until the Baroque Era – the primary focus is on the *melodic* interaction between voices, and only secondary on the resulting *harmony*.

**E♭° [Dim 1 - 1/2]**

1      T9      b3      T11      b5  
              actually B $\flat\flat$       Tb13      actually C      bb7      actually D $\sharp\sharp$       T7

Since these chords follow a strict *contrapuntal* logic, it can be interesting to experiment with other chord scales as well, with avoids (one semitone above the chord tones) instead of tensions (one whole tone above the chord tones).

Indeed, the chord being “just” an approach chord, the tones in between the chord tones, just as the chord tones themselves, can function either as a

- **Preparation** – i.e. it is the same as a chord tone (or tension) of the target chord:  
T9 (F in the example above) *prepares* to the  $\flat 3^{\text{rd}}$  of the target chord Dm7  
Tb13 (B in the example above) *prepares* to the T13 of Dm7  
T7 (D in the example above) *prepares* to the root of Dm7
- **Chromatic Approach** – i.e. it approaches a chord tone (or tension) of the target chord:  
T11 (A $\flat$  in the example above) *approaches* either the  $5^{\text{th}}$  of Dm7, or the T11 of Dm7

As we’ve seen earlier, avoid tones are in essence approaches themselves towards, i.e. downward leading tones to, the chord tones of the chord itself ( $E\flat^\circ$  in the example above). But the possible avoid tones of this chord, i.e. all tensions mentioned above lowered by one semitone, *could* also be a preparation or a chromatic approach to the target chord:

Av $\flat$ 9 (F $\flat$ )	<i>approaches</i> the root ( $E\flat$ ) of the chord itself $E\flat^\circ$ <i>approaches</i> the $\flat 3^{\text{rd}}$ (F) of the target chord Dm7 <i>prepares</i> to the T9 (F $\flat$ = E) of the target chord Dm7
Av $\flat$ 11 (A $\flat$ or G)	<i>approaches</i> the $\flat 3^{\text{rd}}$ (G $\flat$ ) of the chord itself $E\flat^\circ$ <i>prepares</i> to the T11 of the target chord Dm7
Av $\flat\flat$ 13 (B $\flat$ )	<i>approaches</i> the $\flat 5^{\text{th}}$ (B $\flat\flat$ or A) of the chord itself $E\flat^\circ$ <i>approaches</i> the $5^{\text{th}}$ (A) of the target chord Dm7
Av $\flat\flat$ 7 (D $\flat$ )	<i>approaches</i> the $\flat 7^{\text{th}}$ (D $\flat\flat$ or C) of the chord ( $E\flat^\circ$ ) itself <i>approaches</i> the $7^{\text{th}}$ (C) of the target chord Dm7

It all depends on the rhythmic construction of the melody that is played, i.e. *when* does the resolution of these “avoid” tones occur: *inside* the chord itself ( $E\flat^\circ$ ), or at the *resolution* to the target chord (Dm7). As long as you keep the chord tones of the chord itself ( $E\flat^\circ$ ) in the chord scale you use, anything really goes.

We've encountered a downward diminished chord in the ending turnaround of 'All Of Me' (Simons & Marks)<sup>1</sup>. We can now analyze it as follows.

C<sup>6</sup>      Eb°      Dm7      G7  
 I<sup>6</sup>      bIII°      IIIm7      V7/I  
 [Ion]    [Dim 1 - 1/2]    [Dor]    [Mixo]  
 C Major    NPS        C Major     —————

First bar: Eb° is a downward diminished approach chord towards IIIm7.

Note the semitone *bass* motion from Eb° to Dm7.

And exactly the same cadence occurs in the very last line of 'I Should Care' (Cahn/Stordahl/Weston)<sup>2</sup> that can now be analyzed as follows.

C/E      Eb°      Dm7      G7      C<sup>6</sup>      F7      Em7      A7  
 I      bIII°      IIIm7      V7      I<sup>6</sup>      SubV7/III      IIIIm7      V7/II  
 [Ion]    [Dim 1 - 1/2]    [Dor]    [Mixo]    [Ion]    [Lyd b7]    [Dor]    [Mixo]  
 C Maj    NPS        C Maj     —————    NPS        D Maj     —————

First bar: Eb° is a downward diminished approach chord towards IIIm7.

Note the semitone *bass* motion coming from C/E to Eb° and then to Dm7.

<sup>1</sup> See [Analysis of a Song with Secondary Dominants](#) (page 111).

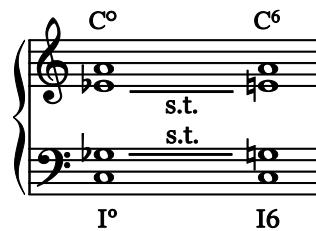
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<sup>2</sup> See [Analysis of a Song with Secondary II-V Cadences](#) (page 121).

## THE STATIC DIMINISHED AUXILIARY CHORD

The **static diminished chord** is definitely the less commonly used of all three types of diminished chords, though it “functions” very similarly to the downward diminished chord. It’s “just” an approach chord, without any other function: not Dominant, not Subdominant, not Tonic.

It’s called an *auxiliary* chord because, unlike the two other types of diminished chords that have a semitone *approach* resolution in the bass, this chord *stays on the same bass tone* when resolving to its target tone. It’s mostly used as a *preparation* to a Major6-chord, e.g. C° to C6.



I used enharmonic writing for an easier reading:

- The A tone on the C° chord is its diminished 7<sup>th</sup> and should consequently be a B♭.

With enharmonic writing the *preparation* of the target chord is more obvious:

- The A tone prepares to the 6<sup>th</sup> of the target chord.
- The C tone prepares to the root of the target chord.
- The other tones – E♭ and G♭ – are upward chromatic approach tones to E and G respectively.<sup>1</sup>

Note that the bass *stays the same* when resolving to the target chord. The Roman numeral in the analysis below situates the chord *exactly where it is* in the tonality, I° going to I6.

The same remark’s as for the downward diminished chord apply when it comes to determine the chord scale. The [Dim 1½] chord scale, with tensions one whole tone above the chord tones, is the most convenient chord scale. But, due to the contrapuntal logic of the chord, other options might be interesting too. The tones in between the chord tones can be either preparation or chromatic approach to the next chord, and even “avoid tones”, i.e. approach to the chord tones of the chord itself. As long as you keep the chord tones in the chord scale, anything goes!

### Conclusion

*The most typical, standard and convenient chord scale for diminished chords, whatever type of diminished chord, is the [Diminished 1½] scale.*

But, the [Ultra-Locrian], [Locrian<sup>¶7</sup>] and [Ultra-Locrian<sup>9</sup>] (and possibly others) are alternatives.

<sup>1</sup> Strictly speaking, these chromatic approaches *should* be a D♯ and F♯, since they resolve upwards. That would strongly complicate the chord’s naming, and its chord symbol, though.

## MULTIPLE SEMITONE RESOLUTIONS OF DIMINISHED CHORDS

Since the use of diminished chords is all about their typical bass resolutions – up, down or static – it's possible to use inversions of these diminished chords to resolve to inversions of the target chord. The inverted diminished chord will almost always be written as “another” diminished chord. Looking at the table below, you will see that this implicates that *any* diminished chord can actually resolve to *any* chord, provided one also uses inversions for that target chord.

The bass motion though might confuse you. A “seemingly” upward diminished chord can be, *in fact*, an “originally” downward diminished chord, and vice versa. It certainly leads to a lot of confusion when the copyist neglects to indicate the inversions of the target chord with slash chord symbols, “hiding” the typical bass resolutions as it were.

chord on score	target chord	bass motion	in fact	or
B°	C	up		B°
D°	Cm/E♭	up		B°/D
F°	C/E	down		B°/F
F°	Cm7♭⁵/G♭	up	upward dim chord	B°/F
A♭°	C/G	down		B°/A♭
B°	C7/B♭	down		B°
B°	CΔ/B	static		B°
D♭°	C	down		D♭°
E°	Cm/E♭	down		D♭°/F♭
E°	C/E	static		D♭°/F♭
G°	Cm7♭⁵/G♭	down	downward dim chord	D♭/A♭♭
G°	C/G	static		D♭/A♭♭
B♭°	C7/B♭	static		D♭/C♭
B♭°	CΔ/B	up		D♭/C♭
C°	C	static		C°
E♭°	Cm/E♭	static		C°/E♭
E♭°	C/E	up		C°/E♭
G♭°	Cm7♭⁵/G♭	static	static dim chord	C°/G♭
F♯°	C/G	up		C°/G♭
A°	C7/B♭	up		C°/B♭♭
C°	CΔ/B	down		C°

This is also one of the main reasons why most musicians will use the [Dim 1-½] chord scale that fits *any* type of diminished chord, not bothering differentiating the type.

This differentiation though can be important if you *hear* the link of the (originally) *upward* diminished chord to the parent scale, thus preferring to use the

- [Ultra-Locrian] and [Ultra-Locrian<sup>9</sup>] chord scales in a minor context
- [Locrian<sup>♯7</sup>] – in a Major context

## Other Approach or Auxiliary Chords

### PARALLEL HARMONY

It's possible to *approach* a certain chord type by the same chord type in downward (mostly) or upward semitones: m7 to m7, Δ to Δ, and 7 to 7 (usually not m<sup>7<sup>b</sup></sup> to m<sup>7<sup>b</sup></sup>). This way of thinking is called **parallel harmony**. Most of these parallel approach chords though are not “just” approach or passage chords. Very often they’re modal chords<sup>1</sup>, or even functional dominant or minor subdominant chords<sup>2</sup>, but not always! Without a closer modal analysis (later in this book), it can be tricky to determine the appropriate chord scale for these chords, certainly when even a modal analysis doesn’t seem to offer an answer. In most cases though

- the m7 approach chord will be a [Dorian] chord
- the Δ approach chord will be a [Lydian] chord
- the 7 approach chord will be a [Lydian<sup>b7</sup>] chord

### m7 to m7

The most common approach is from m7 to m7. It’s also mostly<sup>3</sup> a [Dorian] chord approaching another [Dorian] relative-IIm7 by downward semitone; often as passage coming from yet another m7 chord, but not necessarily.

Coming from IIIm7 (or not):

C <sup>Δ</sup>	(Em7)	<b>E♭m7</b>	Dm7	G7
I <sup>Δ</sup> [Ion]	(IIIIm7) ([Phr])	?	IIIm7 [Dor]	V7 [Mixo]
CMaj	_____	[Dor] NPS	CMaj	_____

Coming from VIIm7 (or not):

C <sup>Δ</sup>	(Am7)	<b>A♭m7</b>	Gm7	C7
I <sup>Δ</sup> [Ion]	(VIIm7) ([Aeol])	?	?	V7/IV [Mixo]
CMaj	_____	[Dor] NPS	(FMaj)	_____

Coming from IIIm7 (or not):

... Em7	(Dm7)	<b>D♭m7</b>	Cm7	F7
... IIIIm7	(IIIm7)	?	?	SubV7/III
... [Phr]	([Dor])	[Dor]	[Dor]	[Lyd <sup>b7</sup> ]
... CMaj	_____	NPS	(B♭Maj)	NPS

<sup>1</sup> See Modal Interchange (page 203).

<sup>2</sup> See minor Sub-Dominants (SDm) (page 232).

<sup>3</sup> Not to say: “always”.

**Δ to Δ**

The Δ approach chord will almost always be a [Lydian] chord, but a closer analysis might offer new chord scale types<sup>1</sup>. For now, let's keep it to the [Lydian] chord scale.

Dm7	<b>D♭Δ</b>	CΔ
IIm7	?	IΔ
[Dor]	[Lyd]	[Ion]
CMaj	NPS	CMaj

**7 to 7**

The 7 approach chord is actually not new. It's usually just a [Lyd<sup>b7</sup>] Substitution Dominant chord.<sup>2</sup>

Am7	<b>A♭7</b>	G7
VIm7 [Aeol] CMaj	SubV7/V [Lyd <sup>b7</sup> ] NPS	V7 [Mixo] CMaj

<sup>1</sup> Please refer to minor Sub-Dominants (SDm) (page 232).

<sup>2</sup> See Substitution Dominants (page 134).

## THE AUXILIARY IV-CHORD

The auxiliary IV-chord is a typical (“need to know”) Blues *cliché*, though it’s used a lot in other popular music styles too. You normally won’t find this “chord” written on the score, because it’s usually just an “embellishment”<sup>1</sup> of the actual functional chord(s) that is (are) written on the score.

*The written functional Major triad (C in the example below) is approached by another Major triad build on its 4th degree (F, or AvII). The bass stays the same (F/C) since this “new chord” is only an auxiliary chord.*

I usually analyze this auxiliary chord as IV/I (read IV of I), though this is not a conventional analysis, since it’s unusual – to say the least – to analyze a chord that is *not written* on the score.<sup>2</sup>

One characteristic of this auxiliary chord is that it uses *diatonic* (be it sometimes modal) approaches, thus not only semitone approaches, but whole tone approaches too.

- The A tone – 3<sup>rd</sup> of F/C (or T13 of C) – approaches the G tone (5<sup>th</sup> of C)
- The F tone – root of F/C (or AvII of C) – approaches the E tone (3<sup>rd</sup> of C)
- The C tone – (5<sup>th</sup> of F/C) the *actual functional* root (of C) – stays in the bass

### Blues Example:

The above-mentioned big chord symbols are the functional chords written on the score. The smaller chord symbols, in between the staves, are just for analysis purposes. The chords between brackets are the auxiliary chords (never written on the score).

Each *functional* Blues chord – I7, IV7 and V7 – is approached by its own *auxiliary* IV-chord. Actually, in Blues, this auxiliary chord mostly functions as a *passage* chord between the Major triad C and the four-note chord C7, as you can see in the example above.

<sup>1</sup> It is in fact a *modal voicing* (see [Modal Voicings](#) on page 254).

<sup>2</sup> To remember this cliché easily, I named it “the plagal effect” (once again, not a conventional concept) because it’s almost similar to a plagal cadence. It works with almost *any* Major triad, though it happens sometimes with minor triads too, as we’ll see further on.

Note that the bass stays on I, IV and V respectively, because these are no real chord *changes*, but only *auxiliary* chords.

**Pop/Country/Folk ... Example:** Possible comping for any I-IV-V-I song.

C	F/C	C	F	B♭/F	F	G	C/G	G	C	F/C	C
I	IV/I	I	IV	IV/IV	IV	V	IV/V	V	I	IV/I	I

The *functional* chords – I, V and IV – are each approached by their own *auxiliary* IV-chord.

IV/IV creates a *modal change*. By using the B♭ chord, with the non-diatonic B♭ tone, the original C Major parent scale is changed to C Mixolydian, with ♭7 (B♭) instead of 7 (B), giving the song, at that moment, a typical bluesy sound.<sup>1</sup>

**Jazz Example:** ‘So What’ (Miles Davis)

Dm<sup>7</sup>

(G/D)  
IV/I      Dm<sup>7</sup>  
Im<sup>7</sup>

So What - Miles Davis (1926 - 1991)      on the Im<sup>7</sup>

The *Dorian central chord* Im7 (Dm7)<sup>2</sup> is approached by its own IV-chord, i.e. a Major triad build on its 4<sup>th</sup> degree. This is an atypical example of the auxiliary IV-chord (starting on a minor chord) but it was most certainly inspired by the typical Bluesy use of the auxiliary IV-chord.

Jazz musicians will read this “auxiliary” chord as a purely modal coloring of the Dorian Dm7. By alternating the G/D and the Dm7 one hears almost all the tones of the Dorian mode: D (1), F (♭3), G (T11), A (5), B (T13 – the *characteristic Dorian tone*) and C (♭7).<sup>3</sup>

<sup>1</sup> See Modal Interchange (page 203).

<sup>2</sup> Im7 is not a Major diatonic chord, it's a Dorian chord. See Modal Non-Functional Harmony (page 249).

<sup>3</sup> See Modal Voicings (page 254).

**Rock Example:** extended auxiliary IV-chords

Some Rock musicians have pushed the cliché beyond its limits, using the IV of the IV of the IV of the IV, and so on ..., and creating interesting modal “cascades” of chords. In such a case, it’s recommended to write the auxiliary chords on the score.

C pedal (= keep C in the bass all the time)

Every chord – the auxiliary chords themselves also – is approached by its own auxiliary IV-chord until the final resolution to the functional I-chord.

The analysis here is restricted to IV/IV/IV ... and so on, for now. But E♭, B♭, D♭ and A♭ could, and more conveniently *should*, be analyzed as *modal interchange chords*.<sup>1</sup>

Another good example of this kind of *modal* writing, using IV of IV of IV ... is the song ‘Hey Joe’ (Billy Roberts) with retrogressive (i.e. going *up* the circle of fifths) chord changes. Here, the bass follows the chord changes.

**Hey Joe** (Billy Roberts) - best known in the Jimmy Hendrix version

Please refer to the part on Modal Changes (page 197), chapter Modal Interchange (page 203), for the Roman numeral analysis of the chords.

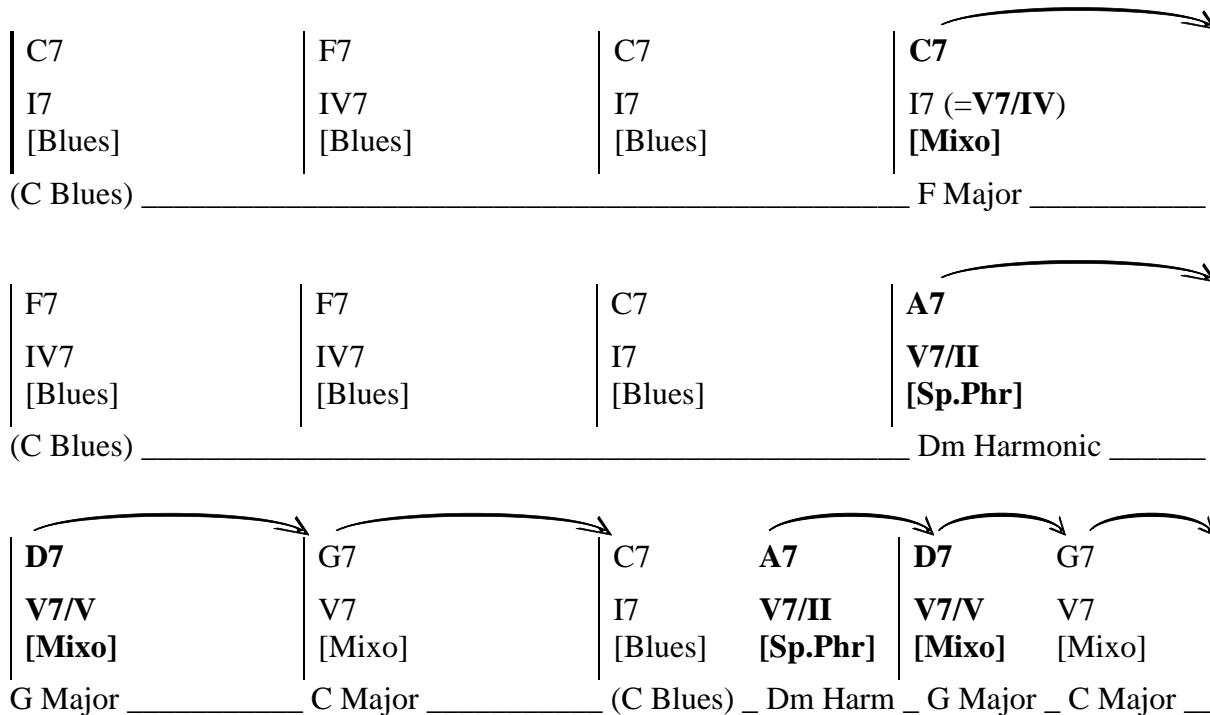
<sup>1</sup> See Modal Interchange (page 203).

## MORE ABOUT THE BLUES

The original 12-bar Blues format<sup>1</sup> has been, and still is today, evolving permanently, being re-harmonized with secondary dominants, primary and secondary II-V cadences, substitution dominants and approach chords. It's impossible to list all the creative ideas of multiple composers and improvisers, but I'll mention the most common variations below.

# BLUES WITH SECONDARY DOMINANTS

These are probably the most encountered variations on the Blues format, since the use of (only) 7-type chords is so typically “bluesy”.



- [Blues] on the I7 and IV7 chords stands, by convenience, for *any* Blues option mentioned in the chapter Improvising on Blues (page 95). These options are:
    - Using the traditional C Blues scale throughout the whole chorus is going to bring quite a lot of clashes, especially on the secondary dominants. But Blues die-hard musicians will bend their tones wherever necessary. (C Blues), in the parent scale line, is between parentheses because it's not a parent scale, but an improvisation scale.
    - Using the [Blues] scale (*with* Major third) and/or the [Maj.Blue] scale (or the [Ext.Blue] scale) as “chord scales”<sup>2</sup> is probably a better option, certainly for pianists who cannot bend their tones.
    - The [Mixolydian] chord scale is a modal option too.<sup>3</sup>
  - The dominant chord scale [Mixo] on the V7/IV, V7/V and V7 chords is the basic option for these chords as we've seen throughout the previous parts and chapters.

<sup>1</sup> See Blues Structure (page 94).

<sup>2</sup> See Improvising on Blues (page 95).

<sup>3</sup> See A Modal Approach to the Blues (page 222).

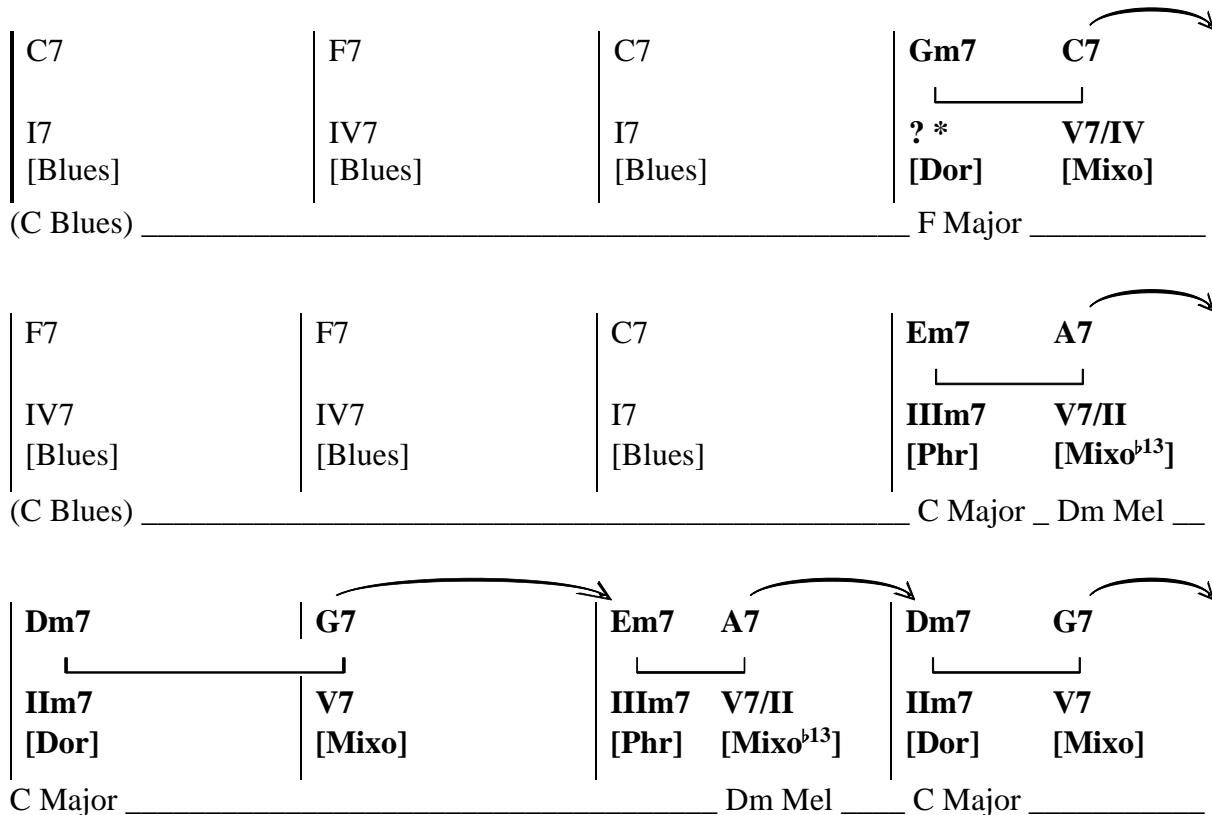
- I propose the [Sp.Phr] chord scale on the V7/II, instead of [Mixo<sup>b13</sup>] as seen before, because following the C7 chord, the blue note B♭ (b7 in C) is a residual tone becoming T9 on A7, hence [Mixo<sup>b9-b13</sup>] better known as [Sp.Phr].

However, on these dominant chords, you can choose either chord scale we've learned about in the previous chapters on Secondary V7 Dominant Chords (page 99) and The Eight Dominant Chord Scales (page 125), i.e. with or without the “Lydian” option, with or without a modal change, providing up to eight possible chord scales for each one of these chords.

The Blues options, [Blues] (with Major 3<sup>rd</sup>), [Maj.Blue], [Ext.Blue] (and [Mixo]), are also possible on these dominant chords, and will give your improvisation a more bluesy sound.

## BLUES WITH SECONDARY II-V CADENCES

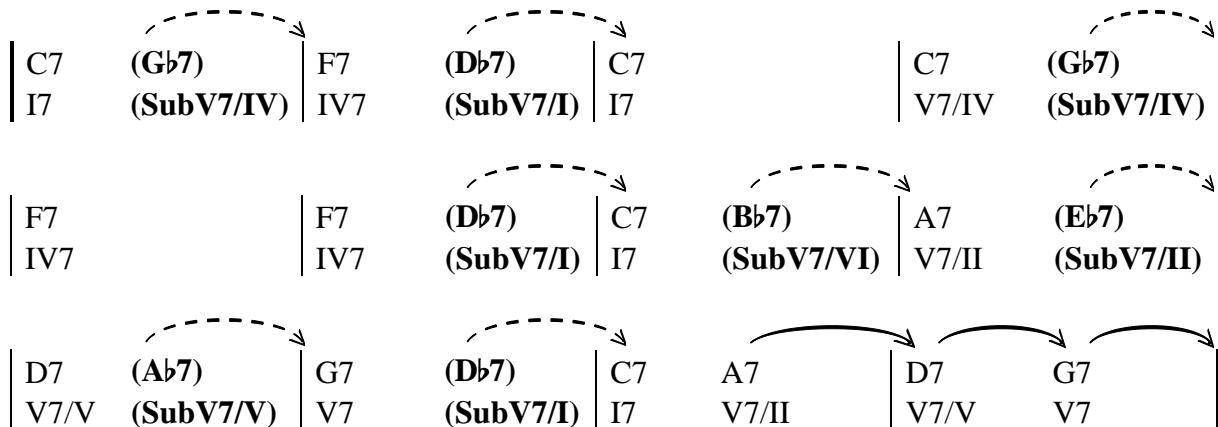
With secondary II-V cadences, the Blues starts to sound yet more “Jazzy” than “Bluesy”, offering still more Jazz chord scales options.



- ? \* is yet to be explained later in the part on Modal Changes (page 197).
- [Blues] stands for *any* Blues option mentioned in the previous section: C Blues (see parent scale line), [Blues], [Maj.Blue], [Ext.Blue] or [Mixo].
- The other proposed chord scales are basic options as seen in the previous parts and chapters. In this context, I propose the [Mixo<sup>b13</sup>] chord scale for the V7/II, because the previous chord, Em7 in both cases, comes with a B tone (5<sup>th</sup> of Em7) becoming T9 on the A7 chord. But, remember that there are multiple options:
  - on dominant chords: the eight [Dominant chord scales] and/or [Blues chord scales]
  - on relative-II chords: “strictly” [Dorian] or the [Blues] scale (i.e. *without* the Major 3rd)

## BLUES WITH SUBSTITUTION DOMINANTS

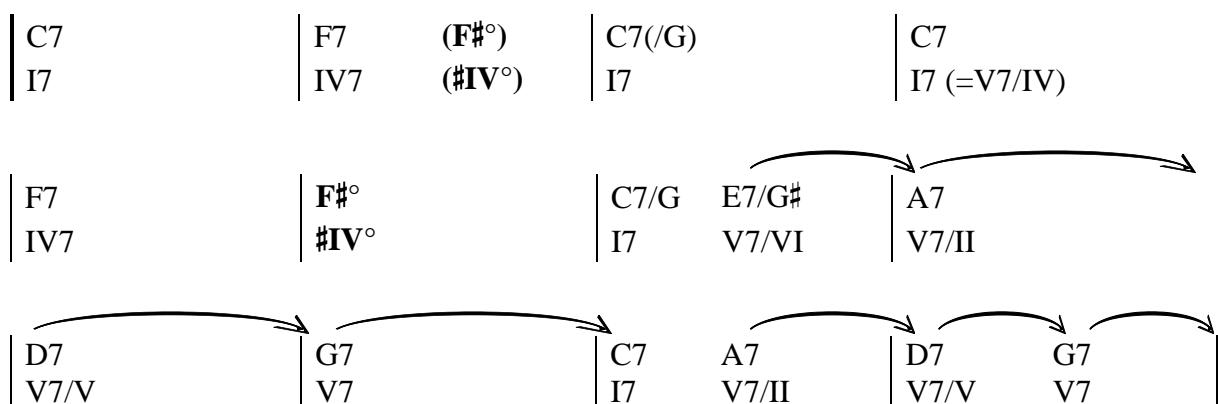
In the example below I chose to write all the possible Substitution Dominants between parentheses, as optional chords, just to illustrate the many options. You might want to use only a few to your choosing, since using all of them is kind of overdone. You should try the chorus without these SubV7-chords at first<sup>1</sup>, and gradually add them here and there, ending with all of them, to have an idea of all the possibilities.



- See the previous section Blues with Secondary Dominants (page 161) for the chord scale options for all chords, *but* the SubV7 chords.
- The preferred chord scale for substitution dominants is the [Lydian<sup>b7</sup>] scale, though other [Dominant chord scales] and/or [Blues chord scales] are possible too.

## BLUES WITH AUXILIARY DIMINISHED CHORDS

The #IV°-chord is a “classic” when going from IV7 back to I7 in the second phrase (and sometimes in the first phrase too).



Note the typical upward semitone resolution of the *bass* from F, to F♯, then to G, and further on, to G♯ and to A. Although this diminished chord *looks* and *sounds* like an upward diminished chord, it is in fact a static auxiliary diminished chord C°/G♭ (b5 in the bass), going

<sup>1</sup> Actually playing the same chorus as in subsection Blues with Secondary Dominants (page 161).

to C7<sup>1</sup>. Being a “classic”, you’ll find this chord a lot written on the score like this though, i.e. without the explicit upward semitone resolution of the bass:

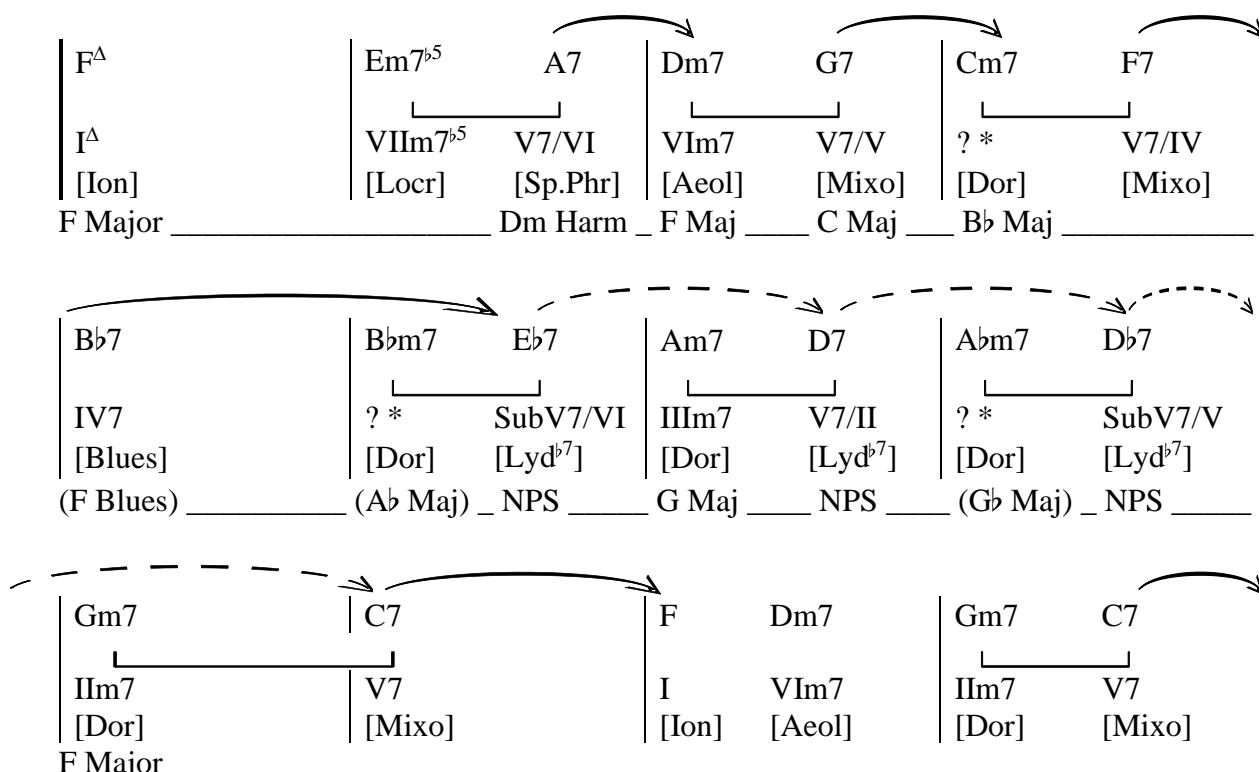
F7 IV7	F#° #IV°	C7 I7	C7 I7	
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Its most convenient chord scale is the [Dim 1½], however, being a *static* dim-chord, as long as you keep the chord tones in the chord scale, anything goes.

For all other chords and according chord scales, see the previous sections.

## “SWEDISH BLUES” OR “BIRD CHANGES”

This style of Blues mixes typical Jazz harmonic structures with still a few Blues elements. The name “Bird Changes” comes from Charlie Parker’s nickname “Bird”. Bird composed and recorded “Blues For Alice” – on the album “Swedish Schnapps” released in 1951, hence the adjective “Swedish” Blues – a song which is often cited as a key example for this type of Blues. Here are the changes for ‘**Blues For Alice**’<sup>2</sup> (Charlie Parker), a “Blues” in F:



- The typical Blues elements seem to have disappeared. The 12-bar structure remains though; with the first phrase starting on the Tonic, the second phrase starting on the Subdominant, and the third phrase starting on a Dominant-like II-V *cadence*.
- Bar 5: The typical IV7-Blues chord remains too. [Blues] stands for the Blues options F Blues (see parent scale line), [Blues], [Maj.Blues], [Ext.Blues] or [Mixolydian]. The latter, [Mixolydian], can be seen here as a Dominant chord scale (instead of the “modal”

<sup>1</sup> See Multiple Semitone Resolutions of Diminished Chords (page 155).

<sup>2</sup> © 1956 Atlantic Music Corp. (renewed 1984)

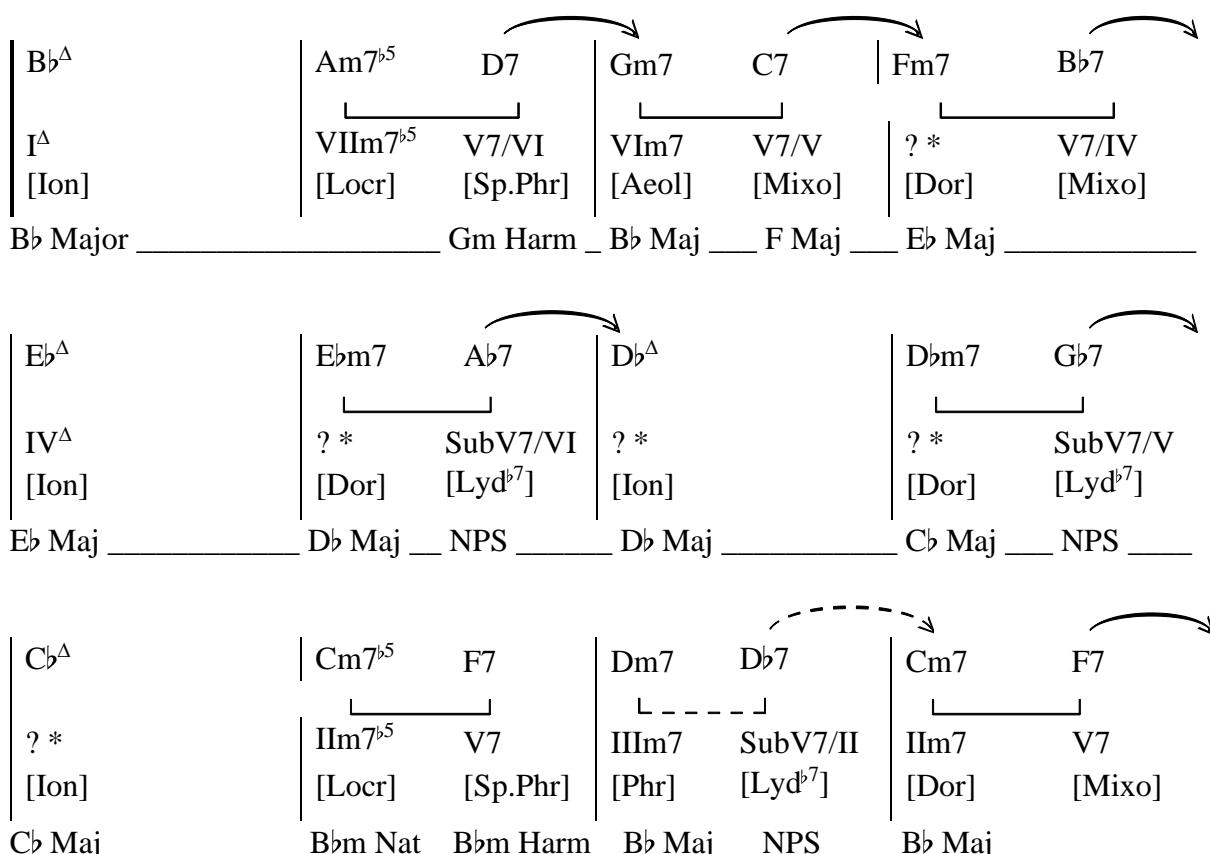
option) in this case (arrow from  $B\flat 7$  to  $E\flat 7$ ). Other [dominant chord scales] are consequently possible too.

- Bar 4, 6 and 8: ? \*, being the *primary* function of these chords, are yet to be explained later in the part on Modal Changes (page 197). Furthermore, we'll see that the chords  $B\flat m7$  –  $E\flat 7$  in bar 6 can be analyzed as minor subdominants (instead of a  $SubIIIm7$  –  $SubV7$  cadence of VI).
- Bar 6, 7 and 8: I propose three consecutive [Dor] – [Lyd $\flat^7$ ] (NPS = No Parent Scale) chord scales to enhance the parallelism of the harmony.

Bar 3: Here, the [Dor] – [Mixo] option would enhance the parallelism of the harmony with bar 4 too. The  $B\flat$  tone in bar 2 however ( $\flat 5$  of  $Em7\flat^5$  and  $T\flat 9$  of  $A7$  [Sp.Phr]) is a residual tone that might last in bar 3, therefore the [Aeol] chord scale on  $Dm7$  might sound easier.

- The other chord scales options here are basic options as seen in the previous parts and chapters. Remember that there are multiple options:
  - on dominant chords: the eight [Dominant chord scales] and/or [Blues chord scales]
  - on relative-II chords: “strictly” [Dorian] or the (minor) [Blues] scale

‘Bluesette’<sup>1</sup>, a “Blues” in  $B\flat$  composed by Toots Thielemans, is also a good example of “Swedish Blues”. Although the song is conventionally written in a 24-bar 3/4-meter Jazz Waltz, it's noted here in a 12-bar 6/8-meter to have a clearer comparison with the traditional 12-bar Blues.



<sup>1</sup> © 1963,1964 MCA-Duchess Music Corp. and New Thunder Music Inc.

- The typical Blues elements seem to have disappeared. The 12-bar structure remains though; with the first phrase starting on the Tonic, the second phrase starting on the Subdominant. The third phrase starts with a semitone approach in the bass towards a Dominant-like *cadence*.
- The I7 and IV7 Blues chords have been changed back into “regular”  $\Delta$ -chords. The chord scale proposed for the  $\text{IV}^\Delta$  is the [Ion] scale because, here, the  $\text{IV}^\Delta$  is introduced by its own dominant, and sounds as if a modulation occurred.<sup>1</sup>
- Bar 3: The [Dor] – [Mixo] option would enhance the parallelism of the harmony with bar 4, but, the E $\flat$  tone in bar 2 ( $\flat 5$  of Am7 $^{\flat 5}$  and T $\flat 9$  of D7 [Sp.Phr]) is a residual tone justifying the [Aeol] chord scale on Gm7.
- Bars 4, 6, 7, 8 and 9: ? \* are yet to be explained later in the part on Modal Changes (page 197).  
The proposed chord scales for the  $\Delta$ -chords are [Ion]. Because each of these chords are introduced by their own dominant, they sound as if a modulation has occurred.  
The chords E $\flat$ m7 – A $\flat$ 7 in bar 6 can be analyzed as minor subdominants (instead of a SubIIIm7 – SubV7 cadence of VI).  
However, it is possible, and perhaps more convenient, to analyze these bars as consecutive IIIm7 [Dor] – V7 [Mixo] –  $\text{I}^\Delta$  [Ion] modulations:
  - Bar 4 and 5: modulation to E $\flat$  Major
  - Bar 6 and 7: modulation to D $\flat$  Major
  - Bar 8 and 9: modulation to C $\flat$  Major
- Bars 10 to 12: The song modulates back to B $\flat$  minor, at first, using the minor II-V cadence, hence [Locr] – [Sp.Phr], then to B $\flat$  Major using a “regular” turnaround with a substituted V7/II.
- The other chord scales options here are basic options as seen in the previous parts and chapters. Remember that there are multiple options:
  - on dominant chords: the eight [Dominant chord scales] and/or [Blues chord scales]
  - on relative-II chords: “strictly” [Dorian] or [Locrian], or the (minor) [Blues] scale

<sup>1</sup> See Tonal Change on  $\text{IV}^\Delta$  (page 105).

## MINOR FUNCTIONAL HARMONY

In this chapter we'll see how the minor harmony is a lot more complex, allowing much more possibilities, than the Major harmony. The natural minor scale is the basic parent scale for most minor chords. The harmonic minor and melodic minor scales are the parent scales for, originally, *only the dominant chords*. But gradually, some harmonic and melodic chords and chord scales – other than the dominants – have become standard chords also. The Dorian minor scale is also used as parent scale for minor chords.

To be complete, we'll look into *all the possible* chords generated by the Natural minor, Harmonic, Melodic and Dorian scales, despite the complexity of certain chords and chord scales.<sup>1</sup>

### The Natural minor Parent Scale

Remember the numbering of the scale degrees in the natural minor (or Aeolian) scale.

A musical staff in treble clef with a key signature of one flat (B-flat). The notes are: C (1), D (2), Eb (b3), F (4), G (5), Ab (b6), Bb (b7), and C (1).

This numbering, with lowered modal degrees b3, b6 and b7, will be reflected in the functional numbering (Roman numerals) of the chords too.

### SERIES OF DIATONIC CHORDS IN NATURAL MINOR

Remember the procedure for generating the series of diatonic chords of a parent scale: Pile up thirds, up to four tones (root and body), on every tone of the parent scale, using only tones that are diatonic<sup>2</sup> to the parent scale.

A musical staff in treble clef with a key signature of one flat. The chords are: Cm7, Dm7b5, Eb<sup>A</sup>, Fm7, Gm7, Ab<sup>A</sup>, and Bb7. Below the staff are their Roman numeral names: I, II, bIII, IV, V, bVI, and bVII.

The diatonic chords of the C natural minor scale are:

I	is a <b>C</b> chord with	b3 – 5 – b7	→	Cm7
II	is a <b>D</b> chord with	b3 – b5 – b7	→	Dm7 <sup>b5</sup>
bIII	is a <b>Eb</b> chord with	3 – 5 – 7	→	Eb <sup>A</sup>
IV	is a <b>F</b> chord with	b3 – 5 – b7	→	Fm7
V	is a <b>G</b> chord with	b3 – 5 – b7	→	Gm7
bVI	is a <b>Ab</b> chord with	3 – 5 – 7	→	Ab <sup>A</sup>
bVII	is a <b>Bb</b> chord with	3 – 5 – b7	→	Bb7

<sup>1</sup> Even if some of these chords and chord scales are somewhat irrelevant, they do exist as possible options.

<sup>2</sup> Diatonic means “included in the scale”.

**Remember The series of natural minor diatonic chords:**

**Im7 – II $m$ 7 $^{\flat 5}$  –  $\flat$ III $^{\Delta}$  – IV $m$ 7 – V $m$ 7 –  $\flat$ VI $^{\Delta}$  –  $\flat$ VII7**

Im7 is the *central chord*.

The three main chords, i.e. the chords build on the *tonal degrees* – Im7, IV $m$ 7 and V $m$ 7 – are all *minor* chords. We'll see how this seriously influences the minor *functional* harmony.

The parallel chords, i.e. the chords build on the *modal degrees* – II $m$ 7 $^{\flat 5}$ ,  $\flat$ III $^{\Delta}$ ,  $\flat$ VI $^{\Delta}$  and  $\flat$ VII7 – are mostly *Major* chords, with exception of II $m$ 7 $^{\flat 5}$ .

## HARMONIC FUNCTIONS OF THE CHORDS

### DOMINANT

We've seen that Dominant chords need to include the tritone – i.e. the 4<sup>th</sup> (subdominant) and the 7<sup>th</sup> degree (*leading tone*) of the tonality – to be Dominant. Since the natural minor scale does not include the leading tone 7, but the subtonic  $\flat$ 7 instead,

**There are NO Dominant chords!**

The chord expected to be Dominant, because it is built on the dominant degree of the parent scale – V $m$ 7 – does not include the tritone. Therefore, it is a Subdominant chord instead, i.e. it still includes the 4<sup>th</sup> degree of the parent scale, but not the 7<sup>th</sup> degree. Like the V7sus4-chord we've seen before, it's a "weakened" dominant SD(D), since it's built on the dominant degree, it still sounds, somehow, dominant.

### SUBDOMINANT

Chords that include the 4<sup>th</sup> degree (subdominant) of the parent scale are Subdominant chords.

**II $m$ 7 $^{\flat 5}$ , IV $m$ 7, (Vm7) and  $\flat$ VII7** are Subdominant (SD) chords.

A musical staff in G clef and common time. It shows seven chords: Im7, II $m$ 7 $^{\flat 5}$ ,  $\flat$ III $m$ 7, IV $m$ 7, V $m$ 7,  $\flat$ VI $m$ 7, and  $\flat$ VII7. Above the staff, the labels T, SD, T, SD, SD(D), T, SD are placed above their respective chords. The chords are represented by vertical stacks of three notes each.

The 4<sup>th</sup> degree of the parent scale is  $\flat$ 3 of II $m$ 7 $^{\flat 5}$ .

The 4<sup>th</sup> degree of the parent scale is the root of IV $m$ 7.

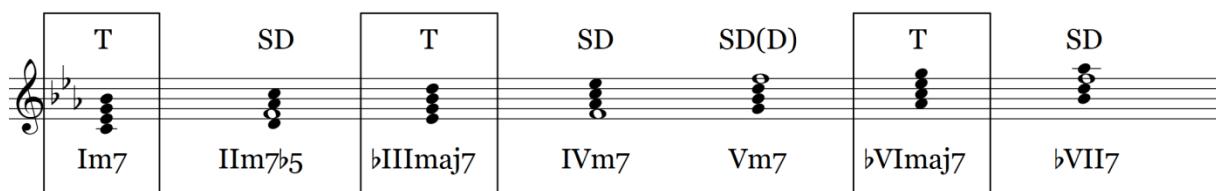
The 4<sup>th</sup> degree of the parent scale is  $\flat$ 7 of V $m$ 7.

The 4<sup>th</sup> degree of the parent scale is 5 of  $\flat$ VII7.

### TONIC

Chords that DO NOT include the 4<sup>th</sup> degree – but the 3<sup>rd</sup> instead, i.e.  $\flat$ 3 for minor scales – are Tonic chords.

**Im7,  $\flat$ III $^{\Delta}$  and  $\flat$ VI $^{\Delta}$**  are Tonic (T) chords.



Of course, only Im7 is the central chord, the real *finalis* chord, giving the real *final resolution* to the song.  $\flat\text{III}^\Delta$  and  $\flat\text{VI}^\Delta$  can never sound as real song-ending chords, though, they can end a musical phrase. They can replace Im7, but only “somewhere in the middle” of the song.

## THE CHORD SCALES IN NATURAL MINOR

**Remember the order of the chord scales in the natural minor parent scale:**

[Aeolian] – [Locrian] – [Ionian] – [Dorian] – [Phrygian] – [Lydian] – [Mixolydian]

The (C) natural minor scale and the (E $\flat$ ) Major scale are relative scales. The main, and only, difference is that the center of gravity – the central tone, the tonic of the tonal system – is displaced. Obviously, the order of the chord scales is displaced in the exact same way.

Relative scales C natural minor and E $\flat$ Major									
Scale degrees	1	2	$\flat 3$	4	5	$\flat 6$	$\flat 7$		
Scale tones	C	D	E $\flat$	F	G	A $\flat$	B $\flat$		
Chord scales	[Aeol]	[Locr]	[Ion]	[Dor]	[Phr]	[Lyd]	[Mixo]		
Diatonic chords	Im7	IIm7 $^5$	$\flat\text{III}^\Delta$	IVm7	Vm7	$\flat\text{VI}^\Delta$	$\flat\text{VII}^\Delta$		
	Cm7	Dm7 $^5$	E $\flat$ $^\Delta$	Fm7	Gm7	A $\flat$ $^\Delta$	B $\flat$ $^\Delta$		
Diatonic chords			E $\flat$ $^\Delta$	Fm7	Gm7	A $\flat$ $^\Delta$	B $\flat$ $^\Delta$	Cm7	Dm7 $^5$
Chord scales			I $^\Delta$	IIm7	IIIIm7	IV $^\Delta$	V7	VIm7	VIIIm7 $^5$
Scale tones			[Ion]	[Dor]	[Phr]	[Lyd]	[Mixo]	[Aeol]	[Locr]
Scale degrees			E $\flat$	F	G	A $\flat$	B $\flat$	C	D

### Im7 [Aeolian]

The chord scale for Im7 (Cm7) is the Aeolian scale (= the natural minor scale).

[Aeolian] means: m7-chord with available tensions 9 and 11 –  $\flat 13$  is avoided.

Tension 11 is not often played on the *finalis* (last ending) chord because this tension tends to shift the function from T to SD. Though, it happens, giving the ending a slightly “hanging” feeling.

The characteristic tone of the [Aeolian] mode is (as we’ve seen before)

**A $\flat$ 13** by opposition to the [Dorian] mode with T13

And, *in a minor context*, the characteristic tone of the [Aeolian] mode is

**A $\flat$ 13** by opposition to the [Melodic] mode too with T13

**$\flat 7$**  by opposition to both the [Harmonic] and [Melodic] modes with 7

**IIm7<sup>b5</sup> [Locrian]**

The chord scale for IIm7<sup>b5</sup> (Dm7<sup>b5</sup>) is the Locrian scale.

[Locrian] means: m7<sup>b5</sup>-chord with available tensions 11 and b13 – b9 is avoid.

The characteristic tone of the [Locrian] mode is

**b5** by opposition to the [Phrygian] mode with a perfect 5<sup>th</sup>

**bIII<sup>Δ</sup> [Ionian]**

The chord scale for bIII<sup>Δ</sup> (E<sup>b</sup><sup>Δ</sup>) is the Ionian scale (= the Major scale)

[Ionian] means: Δ-chord with available tensions 9 and 13 – 11 is avoid.

When playing tension 9, the function of the chord tends to shift from T to SD.

The characteristic tone of the [Ionian] mode is

**A#11** by opposition to the [Lydian] mode with T#11

**IVm7 [Dorian]**

The chord scale for IVm7 (Fm7) is the Dorian scale.

[Dorian] means: m7-chord with available tensions 9, 11 and 13\* – no avoids!

The characteristic tone of the [Dorian] mode is

**T13\*** by opposition to the [Aeolian] mode with A#b13

\* T13 is *definitely* an available tension on the natural minor-IVm7 [Dorian], unlike on the Major-IIm7 [Dorian]<sup>1</sup>. This chord is actually very often played as **IVm6**, T13 being the characteristic tone of the Dorian mode.

Remember the caveat for the *Major*-IIm7 [Dorian]: when adding T13, the chord includes the tritone (degrees 4 and 7) of the tonality, tending to shift its function from SD to D. This is not the case for the natural *minor*-IVm7 [Dorian]: when adding T13, the chord includes *a* tritone (degrees b6 and 2 of the tonality), but not *the* tritone (degrees 4 and 7) of the tonality.

**Vm7 [Phrygian]**

The chord scale for Vm7 (Gm7) is the Phrygian scale.

[Phrygian] means: m7-chord with available tension 11 – b9 and b13 are avoid.

This chord, being a ‘weakened dominant’ SD(D), is rarely used in minor *functional* music, unless as a relative-II chord in a secondary cadence towards IVm7<sup>2</sup>. This chord, however, is sometimes used in *modal non-functional harmony*.<sup>3</sup>

The characteristic tone of the [Phrygian] mode is

**A#b9** by opposition to the [Aeolian] mode with T9

<sup>1</sup> See IIm7 [Dorian] (page 73).

<sup>2</sup> See Relative-II Chords and Secondary II-V Cadences (page 114).

<sup>3</sup> See Modal Non-Functional Harmony (page 249).

## **bVI<sup>Δ</sup> [Lydian]**

The chord scale for bVI<sup>Δ</sup> (Ab<sup>Δ</sup>) is the Lydian scale.

[Lydian] means: Δ-chord with available tensions 9, #11\* and 13 – no avoids!

When playing tension 13, the function of the chord tends to shift from T to SD.

The characteristic tone of the [Lydian] mode is

**T#11\*** by opposition to the [Ionian] with Av11

\* T#11 is *definitely* an available tension on the minor natural-bVI<sup>Δ</sup> [Lydian], being the characteristic tone of the Lydian mode. (See the same remark above on the use of T13 on the natural minor-IVm7 [Dorian] chord).

## **bVII7 [Mixolydian]**

The chord scale for bVII7 (Bb7) is the Mixolydian scale.

[Mixolydian] means: 7-chord with available tensions 9 and 13 – 11 is avoid (or sus4).

bVII7, though a 7-chord, is NOT a dominant chord.

The characteristic of the [Mixolydian] mode is

**b7** by opposition to the [Ionian] mode with 7, and

**Av11\*** by opposition to the [Lydian<sup>b7</sup>] with T#11

\* We saw this same remark on the characteristic tone Av11 in the chapter on Chord Scales in Major (page 72) too. That opposition played between the Major-V7 [Mixo] *dominant* and the [Lydian<sup>b7</sup>] *dominant* we've learned about in the part on Dominant Chord Scales (page 125).

bVII7 is *not* a dominant chord. In this case the opposition is meant between the minor-bVII7 [Mixo] *subdominant* and the bVII7 [Lydian<sup>b7</sup>] *minor subdominant*.<sup>1</sup>

As we learn more about **minor Functional Harmony**, we'll see that a *minor tonal system* is a *multi-modal system*<sup>2</sup>, meaning that there's not – like in Major – only one parent scale, but *four* different parent scales that generate the chords used in a minor song. That implicates that the minor tonality, though still *functional*, uses much more *modal* features, i.e. playing with more possible colors for "the" parent scale, and consequently also with more possible colors for the chord scales.

In that perspective, all the remarks on characteristic tones of the modes above seem, at the one hand, insufficient (there are much more modal comparisons to be made between all the chord degrees and consequent chord scales generated by the different parent scales), and, at the other hand, crucial (because the logic behind it will gradually prove to be essentially *modal*, influencing even the Major tonality, and giving the "Major-minor Tonality" – concept I've mentioned in the beginning of this book<sup>3</sup> – its full extent).

But, let's first explore the further *functional* features of the minor tonality, before we set off towards *modal* music.

<sup>1</sup> See minor Sub-Dominants (SDm) (page 232).

<sup>2</sup> See, further in this part, The minor Tonality as Multimodal System (page 186).

<sup>3</sup> See Major-minor Tonality or Functional Music (page 13).

## The Harmonic minor Parent Scale

We've seen, in the section on Major-minor Tonality or Functional Music (page 13), that starting from the Renaissance, only two modes, the Major/Ionian and minor/Aeolian modes, gradually outranked the other church modes, and that this evolution was due, essentially, to the discovery of harmony, i.e. the use of *functional* chords and cadences as new building stones of music.

The natural minor/Aeolian mode was, probably since the ancient Greece<sup>1</sup>, but certainly until far in the Middle Ages, the cultural reference mode, as seems reflected in the absolute tone names A B C D E F G.

The Major/Ionian mode gradually took over as cultural reference, as is reflected in the “new” relative tone names DO RE MI FA SOL LA SI, indicating the scale degrees of the (of *any*) Major scale. The reason why the Major mode took over is due to the presence of the leading tone (7) in the scale. We've seen how the leading tone plays an overall important role, as part of the tritone (4 and 7), in the typical *functional* sound of the dominant chord(s).

None of the other modes – in order of brightness below – include this tritone:

	Lydian	1	2	<u>3</u>	#4	5	6	7
	<b>Ionian</b>	1	2	<u>3</u>	<b>4</b>	5	6	<b>7</b>
	Mixolydian	1	2	<u>3</u>	4	5	6	$\flat$ 7
minor modes	Dorian	1	2	$\flat$ <u>3</u>	4	5	6	$\flat$ 7
	<b>Aeolian</b>	1	2	$\flat$ <u>3</u>	4	5	$\flat$ 6	$\flat$ 7
	Phrygian	1	$\flat$ 2	$\flat$ <u>3</u>	4	5	$\flat$ 6	$\flat$ 7
	Locrian <sup>2</sup>	1	$\flat$ 2	$\flat$ <u>3</u>	4	$\flat$ 5	$\flat$ 6	$\flat$ 7

Moreover, none of the other modes – apart from the Lydian mode with its *raised tonal degree* 4 – include a leading tone (7).

Without that leading tone, the longtime reference mode, the Aeolian mode (the natural minor scale) was due to “disappear”, just like the other modes, because it was unfit to generate a dominant chord that leads us back to the central tone (or central chord), and thus unfit for the “new” harmonic rules with *functional* chords.

To give the Aeolian mode a dominant chord, one needed to replace its subtonic ( $\flat$ 7) with a leading tone (7). That's how the Harmonic minor scale was “invented”, a *synthetic* scale, i.e. with an altered degree – the *raised* seventh – in respect to the key signature:

**C Harmonic minor scale**

leading tone

WT + st harmonic gap

C (1)

<sup>1</sup> Because of the lack of written sources, it's risky to assert certainties about Music History and Theory from before the early Middle Ages.

<sup>2</sup> The Locrian mode was not an existing church mode in the Middle Ages, because of its diminished fifth that destabilizes the mode. It's mentioned here only to be theoretically complete.

The harmonic minor scale, being a synthetic scale, generates new types of “synthetic” chords and new types of “synthetic” chord scales. The harmony gets a lot more complex. Therefore, we’ll look into the harmonic chords and their chord scales, one by one, in order of decreasing importance (for *functional* music).

Since the harmonic minor scale was invented to generate a *functional* dominant chord  $V7^b9$  for the minor *mode*, we’ll obviously look into the dominant chord and its appropriate chord scale first. Then, we’ll look into another new dominant chord  $VII^\circ$ , and the tonic chord  $Im^\Delta$ . Finally, we’ll see what other chords are possible.

## SERIES OF DIATONIC CHORDS IN HARMONIC MINOR

Cm $\Delta$     Dm7 $b5$     Eb $\Delta\#5$     Fm7    G7 $b9$     Ab $\Delta$     B°  
 ImMaj7    IIIm7 $b5$     bIIIImaj7 $\#5$     IVm7    V7 $b9$     bVIImaj7    VII°  
 T            SD            T            SD            D            T            D

Remember: The series of harmonic minor diatonic chords.

**Im $\Delta$  – IIIm7 $b5$  – bIII $\Delta\#5$  – IVm7 – V7 $b9$  – bVI $\Delta$  – VII°**

### The Harmonic-V7 $b9$ Dominant Chord

Thanks to the leading tone (7), replacing the subtonic ( $b7$ ) of the natural minor scale, we have now a “real” *functional* dominant chord built on the dominant degree of the parent scale, and, that includes the tritone – 4 and 7 – of the tonality, which is the whole purpose of the harmonic scale. The tritone, 4 and 7 of the parent scale, are the *guide tones*,  $b7$  and 3 respectively, of the V7 chord.

The chord scale for this chord is the already familiar [Spanish Phrygian] scale<sup>1</sup>, sometimes also called the [Mixolydian $b9\#13$ ] scale. [Spanish Phrygian] means:

7-chord with available tensions  $b9$ ,  $\#9$  and  $b13$ , 11 is avoid (or sus4)

G7 [Spanish Phrygian] or [Mixolydian  $b9\#13$ ]

1    Tb9    T#9    3    Av11    5    Tb13    b7

Because of the presence of  $b9$ , a tension that is typical for the Harmonic-V7 (by opposition to the Melodic-V7 we’ll see soon), the chord symbol used for the Harmonic dominant is very often  $V7^b9$ . Tension  $b13$  is also typical for the [Spanish Phrygian] scale, though not often found in the chord symbol to avoid heavy writing ( $V7^{b9\#13}$ ) on the score, but justifying the [Mixolydian $b9\#13$ ] name. Note that 11 is (still) an avoid tone.<sup>2</sup>

The harmonic gap in the scale, left between tension  $b9$  and 3, can be filled with an additional scale degree – tension  $\#9$  – which brings the total amount of different scale degrees to 8, creating an octotonic scale (eight-tone scale). When the composer or arranger specifically

<sup>1</sup> See Parent Scales for Secondary Dominants (page 101).

<sup>2</sup> See The Four “Basic” Dominants (page 128) and The Four “Lydian” Dominants (page 130).

wants tension  $\#9$  sounding *in the chord's voicing*, it is written in the chord symbol *instead* of tension  $\flat 9 \rightarrow V7^{\#9}$ . Most musicians will use  $\flat 9$  or  $\#9$  to sound in the chord's voicing, more or less considering the one as the chosen tension, and the other as a passage tone. But both tensions definitely coexist in the chord scale.

Tension  $\#9$  ( $A\sharp$ ) of the [Spanish Phrygian] scale sounds exactly the same as  $B\flat$ , or the minor 3<sup>rd</sup> of the chord. Another way to understand, and remember, the Spanish Phrygian scale is:

- a Phrygian scale with a Major 3<sup>rd</sup> (*instead* of a minor 3<sup>rd</sup>) when  $\#9$  is left out of the scale
- a Phrygian scale with *both* a minor and a Major 3<sup>rd</sup> when  $\#9$  is played in the scale

This scale, with both Major and minor thirds, is used a lot in typical Spanish music as *parent scale* (as typical Spanish *mode*), hence the name *Spanish Phrygian*. In Spanish music though, one will mostly choose between the minor 3<sup>rd</sup> – on all (or most) Spanish diatonic chords – or the Major 3<sup>rd</sup> – on the Spanish tonic Major triad I.<sup>1</sup>

When the Harmonic Dominant is suspended –  $V7^{\flat 9}\text{sus}4$  – i.e. *without the Major third*, the appropriate chord scale becomes the heptatonic (seven tones) [Phrygian] chord scale, a “no avoids” chord scale, with tensions  $\flat 9$ ,  $\#9$ , 11 and  $\flat 13$ .

**G7sus4 [Phrygian]**

1      T $\flat 9$       T $\sharp 9$       T $11$       5      T $\flat 13$       T $7$

## The Harmonic-VII° Dominant Chord

On the 7<sup>th</sup> degree of the harmonic scale we can build a diminished seventh chord that includes the tritone of the tonality, hence, also a dominant chord. The tritone, 4 and 7 of the parent scale, are  $\flat 5$  and 1 respectively, of VII°.

Unlike the Major diatonic (dominant) chord VII $m7^{\flat 5}$ , VII° is a very much used *functional dominant* chord, that is often analyzed as a *non-functional upward diminished chord*.<sup>2</sup>

The chord scale for VII° is the already familiar octotonic [Ultra Locrian] scale.

[Ultra Locr] means: °-chord (dim-chord) with tensions  $\flat 11^*$  (see further) and  $\flat 13$ , and  $A\flat 9$ .

**B° [Ultra Locrian]**

1      Av $\flat 9$        $\flat 3$       T $\flat 11^*$        $\flat 5$       T $\flat 13$        $\flat\flat 7$       T $7$

<sup>1</sup> See Modal Cadences – Phrygian mode (en page 269).

<sup>2</sup> See The Upward Diminished Chord (page 145).

Most musicians hear VII° as an inversion of the dominant V7<sup>b9</sup>, with its 3<sup>rd</sup> in the bass – V7<sup>b9</sup>/3. Tension b13 (of VII° = the root of V7) is very often used as a melodic target tone on this chord, which supports the idea of an inversion of V7.

So, heard as an inversion of V7<sup>b9</sup> [Spanish Phrygian], the b4<sup>th</sup> degree (Tb11\*) in the [Ultra Locrian] chord scale, though a semitone above b3, doesn't sound as an avoid. The only avoid tone is (stays) Avb9.

	B	C	D	E <sub>b</sub>	F	G	A <sub>b</sub>	A <sub>#</sub>
VII° [Ultra Locrian]	1	<b>Avb9</b>	b3	Tb11*	b5	Tb13	b7	T7
V7/3 [Spanish Phrygian]	3	<b>Av11</b>	5	Tb13	b7	1	Tb9	T#9

## The Harmonic-I<sup>Δ</sup> Tonic Chord

On the very first degree of the harmonic scale, the central chord is Im<sup>Δ</sup>. The chord scale for Im<sup>Δ</sup> is (obviously) the [Harmonic] minor scale.

[Harmonic] means: m<sup>Δ</sup>-chord with available tensions 9 and 11 – b13 is avoid.

Im<sup>Δ</sup> is not used a lot in “traditional” music, because the Major 7<sup>th</sup> still sounds quite tensioned to “traditional” ears. You might hear it in Jazz music, though we’ll see in the next chapter that Im<sup>Δ</sup> is mostly a Melodic chord, which offers a “no avoids” options.

With T11, the chord includes the tritone tending to shift its function from T to D.

When filling up the harmonic gap, we end up with an octotonic [Harmonic] chord scale with both b7 and 7.

This scale is also known as the [Harmonic minor Bebop] scale, with the additional chromatic passage tone b7, between b6 and 7; or as the [Natural minor Bebop] scale, with the additional chromatic passage tone 7, between b7 and 1.

## Other Possible Harmonic Chords

The other four possible chords – II $m7^{b5}$ ,  $\flat III^{\Delta\#5}$ , IV $m7$  and  $\flat VI^\Delta$  – are not used a lot because the harmonic minor scale was invented originally, and solely, to generate (a) dominant chord(s) for the minor mode. There is no *functional* reason to use harmonic chords other than both dominant chords V $7^{b9}$  and VII $^\circ$ . There is in fact a good *functional* reason why these other chords are *not* used a lot. Let's look into them one by one and see what opportunities they offer, if any, and why they're not that usual.

**The Harmonic-II $m7^{b5}$**  is a [Locrian<sup>13</sup>] SD chord with tensions 11 and 13 –  $\flat 9$  is avoided.

Dm $7^{b5}$  [Locrian 13]

1      Av $\flat 9$        $\flat 3$       T11       $\flat 5$       (T $\flat 13$ )      T13       $\flat 7$

T13 is definitely a new option for the II $m7^{b5}$ . However, with T13 *the chord includes the tritone of the tonality*, tending to shift its function from SD to D, which is a good *functional* reason *not* to use this chord.

When filling up the harmonic gap, we have T $\flat$ 13 as additional tone, which brings us back to the customary Natural minor-II $m7^{b5}$  chord. It doesn't create new options.

This chord, with its [Locr<sup>13</sup>] chord scale can be used on a II $m7^{b5}$  – V $7^{b9}$  minor cadence though, offering a homogenous parent scale for both chords, especially when the tempo of the changes is too high to swiftly shift between chord scales (and parent scales).<sup>1</sup>

**The Harmonic- $\flat III^{\Delta\#5}$**  is a [Ionian<sup>#5</sup>] T chord with tension 9 – 11 and 13 are avoided.

E $\flat$ maj $7^{\#5}$  [Ionian #5]

1      T9      3      Av11      (5)       $\sharp 5$       Av13      7

The raised fifth tends to destabilize the chord. Moreover, because of this raised fifth, the original T13 of the Natural minor  $\flat III^\Delta$  is now avoided. However, the 13<sup>th</sup> sounds really good, but with this “tension”, the chord actually sounds like Im $\Delta 9/3$ , i.e. the tonic chord Im $\Delta 9$  inversed with its third in the bass.

With T9, the chord includes the tritone, tending to shift its function from T to D.

When filling up the harmonic gap, we have the perfect fifth, bringing us back to the customary Natural minor  $\flat III^\Delta$  chord. It doesn't create new options.

<sup>1</sup> See Introducing minor Functional Harmony (page 117).

**The Harmonic-IVm7** is a [Dorian<sup>#4</sup>] SD chord with tensions 9, #11 and 13 – no avoids.

Fm7 [Dorian  $\#4$ ]

1    T9     $b3$     (T11)    T $\#11$     5    T13     $b7$

Tension #11 is a new option for the minor-IV. However, with T#11, the chord includes the tritone, tending to shift its function from SD to D.

When filling up the harmonic gap, we have tension 11, bringing us back to the customary Natural minor IVm7 chord. It doesn't create new options.

There's also a possible *new optional chord*: when playing 1 – #3 – T#11 (instead of 5) –  $b7$  we end up with IVm7<sup>b5</sup> (using enharmonic writing: B = C $\flat$  or  $\#11 = b5$ ). This Harmonic-IVm7<sup>b5</sup> is also a [Dorian<sup>#4</sup>] D chord with tensions 9, 11 and 13 – 5 (!) is avoid. But this chord rather *sounds like the dominant V7<sup>b9/b13</sup>* inversed on its 7<sup>th</sup>.

**The Harmonic- $bVI^\Delta$**  is a [Lydian<sup>#9</sup>] T chord with tensions #9, #11 and 13 – no avoids.

Abmaj7 [Lydian  $\#9$ ]

1    (T9)    T $\#9$     3    T $\#11$     5    T13    7

Tension #9 is a new option for the minor- $bVI^\Delta$ . Though, together with T13, the chord includes the tritone, tending to shift its function from T to D.

When filling up the harmonic gap, we have tension 9, bringing us back to the customary Natural minor VI $^\Delta$  chord. It doesn't create new options.

There's a possible *new optional chord*: when playing 1 – #9 (instead of 3) – 5 – 7 we end up with  $bVIm^\Delta$  (using enharmonic writing: B = C $\flat$  or  $\#9 = b3$ ). This Harmonic- $bVIm^\Delta$  is also a [Lydian<sup>#9</sup>] T chord with tensions 9, #11 and 13 – 3 (!) is avoid. But, with T13 (e.g. the equally optional  $bVIm6$ ) the chord includes the tritone, tending to shift its function from T to D.

There's yet another possible *new optional chord*. When filling up the harmonic gap, we can build a chord on the  $b7^{\text{th}}$  degree:

**The Harmonic  $bVII7^{b9}$**  is a [Mixolydian<sup>b9/9</sup>] SD (D) chord with tensions  $b9$ , 9 and 13 – 11 is avoid (or sus4).

$Bb7^{b9}$  [Mixolydian  $b9/9$ ]

1    T $b9$     T9    3    A $v11$     5    T13     $b7$

Tension  $b9$  is a new option for the minor- $bVII7$ . Though, with  $b9$ , the chord includes the tritone, tending to shift its function from SD to D.

### Conclusion:

All these chords tend to become Dominant chords when one tries to include the typical Harmonic “raised again” 7<sup>th</sup> degree (leading tone), because when doing so, they all include the tritone of the tonality<sup>1</sup>. This confirms the Harmonic parent scale as being an *essentially Dominant* scale. So, unless it’s your intention to play with the *functional ambiguity* of these chords, and/or with their typical modal color, you might want to avoid using them altogether.

These *modes*, are sometimes used in *modal non-functional* music, though not that often.

### Tetrachords used in the Chord Scales

TETRACHORDS CHART			
Tetrachord name	Construction 1 = Whole Tone $\frac{1}{2}$ = semitone $1\frac{1}{2}$ = WT + st	Degree numerals	Alternate names
Major	1 – 1 – $\frac{1}{2}$	1 – 2 – 3 – 4	Ionian
minor	1 – $\frac{1}{2}$ – 1	1 – 2 – $\flat$ 3 – 4	Dorian
Phrygian	$\frac{1}{2}$ – 1 – 1	1 – $\flat$ 2 – $\flat$ 3 – 4	
Harmonic	$\frac{1}{2}$ – $1\frac{1}{2}$ – $\frac{1}{2}$	1 – $\flat$ 2 – 3 – 4	
Lydian	1 – 1 – 1	1 – 2 – 3 – $\sharp$ 4	
Lydian <sup>b9</sup>	$\frac{1}{2}$ – $1\frac{1}{2}$ – 1	1 – $\flat$ 2 – 3 – $\sharp$ 4	Hungarian Spanish
Diminished (Spanish)	$\frac{1}{2}$ – 1 – $\frac{1}{2}$	1 – $\flat$ 2 – $\flat$ 3 – $\flat$ 4	Spanish = enharmonic 1 – $\flat$ 2 – $\sharp$ 2 – 3
minor <sup>b4</sup>	1 – $\frac{1}{2}$ – $\frac{1}{2}$	1 – 2 – $\flat$ 3 – $\flat$ 4	
Lydian <sup>#9</sup>	$1\frac{1}{2}$ – $\frac{1}{2}$ – 1	1 – $\sharp$ 2 – 3 – $\sharp$ 4	Hungarian Major
minor <sup>#4</sup>	1 – $\frac{1}{2}$ – $1\frac{1}{2}$	1 – 2 – $\flat$ 3 – $\sharp$ 4	Hungarian minor

The image shows four musical staff diagrams, each illustrating a specific mode's tetrachord structure. The first two staves are in G clef, while the last two are in C clef. Each staff consists of four notes connected by vertical stems. Above each staff is a label indicating the mode and the type of tetrachord. Brackets above the notes group them into pairs, with labels 'st' (semitone) or 'WT+st' (Whole Tone plus semitone) indicating the interval between the first and second notes of each group.

- LOCRIAN 13 MODE:** C phrygian tetrachord (st) and G $\flat$  lydian #9 tetrachord (WT+st).
- IONIAN #5 MODE:** C Major tetrachord (WT+st) and G $\sharp$  spanish tetrachord (WT+st).
- DORIAN #4 MODE:** C minor #4 tetrachord (st) and G minor tetrachord (st).
- LYDIAN #9 MODE:** C lydian #9 tetrachord (WT) and G Major tetrachord (WT).

<sup>1</sup> Remember also the caveat mentioned for the Major-IIIm7 when adding T13 to the chord.

## The Melodic minor Parent Scale

We've seen that the Natural minor mode is unfit to generate a dominant chord, and consequently, to generate functional cadences. Known as the Aeolian mode, this mode was originally a cultural reference – actually *the* minor mode reference – that the early composers of Major-minor tonal music wanted to keep, unlike the other (minor) church modes. To compensate for the lack of a dominant chord, they invented the Harmonic minor mode, with a leading tone replacing the subtonic. With this new synthetic scale, including the tritone of the tonality, a dominant chord was made possible.

But the Harmonic mode also came with the “harmonic gap” – the whole tone + semitone interval between  $\flat 6$  and 7 – that was difficult to sing, and that generated strange Arabic sounding melodies. To avoid that gap, but still keeping the much-needed leading tone, the most logical solution was to raise  $\flat 6$  to a Major sixth. That's how the *melodic* minor scale was “invented”, for *melodic* reasons<sup>1</sup>.

Cm Melodic scale

C      D      Eb      F      G      A      B  
1      2      3      4      5      6      7

The existence of the melodic scale as parent scale, just like the harmonic scale, depends historically only on the *functional* need for a dominant chord. So, obviously, we'll look into the dominant chord V9 and its appropriate chord scale first. Then, we'll look into three other chords used in functional minor harmony: the tonic chord Im $\Delta$  (also known as Im6) and the two subdominant chords, IIIm7 and IV7.

Unlike the harmonic scale, the melodic scale generates chords and, especially, *chord scales* that are used *a lot* (some more than others) be it mostly for *modal* reasons – i.e. because of their own specific color – but not often in a minor functional context. Because of their frequent use, you should get familiar with these chord types and their chord scales.

### SERIES OF DIATONIC CHORDS IN MELODIC MINOR

Cm $\Delta$     Cm $6$     Dm $7$     Eb $\Delta\#5$     F $7$     G $9$     Am $7\flat5$     Bm $7\flat5$   
ImMaj7    Im6    IIIm7    bIIIImaj7#5    IV7    SD    V9    VIIm7b5 (T)    VIIIm7b5  
T           T       SD           T       SD           D           (T)           D

Remember: The series of melodic minor diatonic chords.

**Im $\Delta$  (or Im6) – IIIm7 – bIII $\Delta\#5$  – IV7 – V7 – VIIm7b5 – VIIIm7b5**

<sup>1</sup> I suspect, maybe wrongfully, that the Arabic sound of the harmonic mode was also a cultural/religious reason to create the melodic mode. The harmonic minor is occasionally referred to as the Mohammedan scale because of its Arabic sound. The crusades against the Islam ended around the end of the 13<sup>th</sup> century, but they certainly had a Major cultural influence until the 16<sup>th</sup> century, and even beyond. I guess that a “Mohammedan” sound was not an option for the powerful Catholic Church, still the authority on music theory and practice at the time the melodic minor came into existence.

## The Melodic-V9 Dominant Chord

The Melodic V9 is a [Mixolydian<sup>b13</sup>] D chord<sup>1</sup> with T9 and T<sup>b</sup>13 – 11 is avoid (or sus4)<sup>2</sup>.

G9 [Mixolydian b13]

1      T9      3      Av11      5      Tb13      b7

If one needs to differentiate this Melodic Dominant from the Harmonic Dominant, the score will mention V9 (= melodic, or [Mixo<sup>b13</sup>]) instead of V7<sup>b9</sup> (= harmonic, or [Sp.Phr]). But, if the score mentions V7 – i.e. without a specified T<sup>b</sup>9 or T9 – when improvising, you actually can choose between both dominants and, consequently, between tension 9 (melodic) or tensions b9 and #9 (harmonic).

## The Melodic-IM<sup>Δ</sup> also known as Melodic-IM6 Tonic Chord

The Melodic Im<sup>Δ</sup> or Im6 is a [Melodic] T chord with tensions 9, 11 and 13 – no avoids!

Cm<sup>Δ</sup> aka Cm<sup>6</sup> [Melodic]

1      T9      b3      T11      5      T13      7

This chord is often played with the sixth (T13), Im6, to differentiate it from the Harmonic-Im<sup>Δ</sup> (with Av<sup>b</sup>13). And, because this chord has no avoids and, consequently, offers more color opportunities, it is also much more often used – in Jazz – than the Harmonic-Im<sup>Δ</sup> (and even than the Natural minor-Im7). You might want to avoid the use of T11 together with 7 though, because they form the tritone, tending to shift the function of the chord from T to D.

## The Melodic-IIm7 Subdominant Chord

The Melodic II<sup>b</sup>m7 is a [Dorian<sup>b9</sup>] SD chord<sup>3</sup> with available tensions 11 and 13 – b9 is avoid.

Dm7 [Dorian b9]

1      Avb9      b3      T11      5      T13      b7

This chord is less used than its Natural minor-II<sup>b</sup>m7<sup>5</sup> counterpart. But it's an optional<sup>4</sup> chord to play when the melody "asks for it", i.e. when the melody uses the raised submediant (6) of the melodic scale instead of the lowered submediant (b6) of the harmonic (or natural) scale.

This chord, with its [Dor<sup>b9</sup>] chord scale can be used in a II<sup>b</sup>m7 – V9 minor cadence, offering a homogenous parent scale for both chords, especially when the tempo of the changes is too high to swiftly shift between chord scales (and parent scales)<sup>5</sup>.

<sup>1</sup> See [Parent Scales for Secondary Dominants](#) (page 101).

<sup>2</sup> See [The Four "Lydian" Dominants](#) (page 130).

<sup>3</sup> See [Introducing minor Functional Harmony](#) (page 117).

<sup>4</sup> We'll see in the next chapter, [The Dorian minor Parent Scale](#) (page 184), that there are yet other options too.

<sup>5</sup> See [Introducing minor Functional Harmony](#) (page 117).

## The Melodic-IV $\text{7}^{\#11}$ Subdominant Chord

The Melodic IV $\text{7}^{\#11}$  is a [Lydian $\flat 7$ ] SD chord with tensions 9, #11 and 13 – no avoids!

F $\text{7}^{\#11}$  [Lydian  $\flat 7$ ]

1    T9    3    T $\#11$     5    T $13$      $\flat 7$

This SD chord is used more often than the previous Melodic-II $\text{m7}$  chord, when the melody “asks for it” (i.e. with the 6<sup>th</sup> degree of the tonality in the melody instead of the  $\flat 6$  degree).

Striking! We’ve already seen the [Lydian $\flat 7$ ] chord scale used for dominant chords (mostly in Major contexts) and for substitution dominant chords<sup>1</sup>. Here, we see this chord scale being used for a *subdominant* chord. We’ll see that there’s yet another, so-called “*minor*” *subdominant*<sup>2</sup> chord with this same [Lydian $\flat 7$ ] chord scale<sup>3</sup>.

This IV-chord, a *Major triad* in the Classical tradition, is at the origin of the old German name for the Melodic scale, the *Dür-Moll* scale. That name stands for: “the scale that provides a Major (Dür) Subdominant (IV) to the minor (Moll) tonic (Im)”.<sup>4</sup>

## Other Possible Melodic Chords

The three last possible chords –  $\flat\text{III}^{\Delta\#5}$ , V $\text{Im7}^{\flat 5}$  and VII $\text{Im7}^{\flat 5}$  – are less used in minor *functional* music. But their *chord scales* have become standard *modes* in Jazz.

**The Melodic- $\flat\text{III}^{\Delta\#5}$**  is a [Lydian $\sharp 5$ ] T chord with tensions 9, #11 and 13.

E $\flat\Delta\#5$  aka G/E $\flat$  [Lydian  $\sharp 5$ ]

1    T9    3    T $\#11$      $\sharp 5$     Av $13$     7

The same remarks apply as with the Harmonic- $\flat\text{III}^{\Delta\#5}$ . The raised fifth tends to destabilize the chord, and, because of this raised fifth, the original T13 of the Natural minor  $\flat\text{III}^{\Delta}$  is now avoid. Though, with T13, the chord sounds like Im $\Delta 9/3$ , i.e. the tonic chord Im $\Delta 9$  inverted with its third in the bass.

With T9, the chord includes the tritone, tending to shift its function from T to D.

This chord is often written G/E $\flat$ . Indeed 3 – #5 – 7 of the chord form the G Major triad, and G/E $\flat$  seems easier to read than E $\flat\Delta\#5$ . This chord type – and its chord scale – is sometimes used as a *modal* substitution for [Ionian] or [Lydian] chords.

<sup>1</sup> See [Chord Scales for SubV7 Chords](#) (page 135).

<sup>2</sup> See [minor Sub-Dominants \(SDm\) – In Between Major and minor](#) (page 234).

<sup>3</sup> Also known as the [Acoustic] or [Overtone] scale. See [Harmonic Series – The Lydian \$\flat 7\$  scale](#) (page 21).

<sup>4</sup> See also [The Major \$\flat 6\$  Parent Scale](#) (page 198).

**The Melodic-VIm $7^{\flat 5}$**  is a [Locrian $^9$ ] (T) chord with tensions 9, 11 and  $\flat 13$  – no avoids!

Am $7^{\flat 5}$  [Locrian 9]

1      T9      b3      T11      b5      Tb13      b7

This chord *should* be a Tonic chord, but its lowered fifth  $\flat 5$  makes it unfit to sound as a stable Tonic chord. That's why this chord is not often used in minor *functional* music.

But, its chord scale, having no avoids, is used quite a lot as a *modal* substitution for [Locrian] chords.

**The Melodic-VIIIm $7^{\flat 5}$**  is a [Super Locrian] D chord with tension  $\flat 13$  –  $\flat 9$  and  $\flat 11$  are avoid.

Bm $7^{\flat 5}$  [Super Locrian]

1      Av $\flat 9$       b3      Av $\flat 11$       b5      Tb13      b7

This chord, as its Major-VIIIm $7^{\flat 5}$  equivalent, is unusual, or mostly heard as an inversion of the Dominant on its third – V9/3.

The [Super Locrian] chord scale though, is used a lot, but as the enharmonic [Altered] scale for dominant V7-chords. The enharmonic comparison below is written for a Gm $7^{\flat 5}$  chord (VIIIm $7^{\flat 5}$  in A $\flat$  minor Melodic) compared to a G7alt chord (the “*Lydian*” variant of V7 $^9$  in C minor Harmonic) for an easier reading.

Gm $7^{\flat 5}$  [Super Locrian]

1      Av $\flat 9$       b3      Av $\flat 11$       b5      Tb13      b7

G7 [Altered]

1      Tb9      T $\sharp$ 9      3      T $\sharp$ 11      Tb13      b7  
(no 5th)

It's still easier to see it written like this:

Gm $7^{\flat 5}$  [Super Locrian]    G    A $\flat$     B $\flat$     C $\flat$     D $\flat$     E $\flat$     F

G7 [Altered]    G    A $\flat$     A $\sharp$     B    C $\sharp$     E $\flat$     F

## Tetrachords used in the Chord Scales

TETRACHORDS CHART			
Tetrachord name	Construction 1 = Whole Tone $\frac{1}{2}$ = semitone $1\frac{1}{2}$ = WT + st	Degree numerals	Alternate names
Major	1 – 1 – $\frac{1}{2}$	1 – 2 – 3 – 4	Ionian
minor	1 – $\frac{1}{2}$ – 1	1 – 2 – $\flat$ 3 – 4	Dorian
Phrygian	$\frac{1}{2}$ – 1 – 1	1 – $\flat$ 2 – $\flat$ 3 – 4	
Harmonic	$\frac{1}{2}$ – $1\frac{1}{2}$ – $\frac{1}{2}$	1 – $\flat$ 2 – 3 – 4	
Lydian	1 – 1 – 1	1 – 2 – 3 – $\sharp$ 4	
Lydian $^{\flat}$ 9	$\frac{1}{2}$ – $1\frac{1}{2}$ – 1	1 – $\flat$ 2 – 3 – $\sharp$ 4	Hungarian Spanish
Diminished (Spanish)	$\frac{1}{2}$ – 1 – $\frac{1}{2}$	1 – $\flat$ 2 – $\flat$ 3 – $\flat$ 4	Spanish = enharmonic 1 – $\flat$ 2 – $\sharp$ 2 – 3
minor $^{\flat}$ 4	1 – $\frac{1}{2}$ – $\frac{1}{2}$	1 – 2 – $\flat$ 3 – $\flat$ 4	
Lydian $^{\sharp}$ 9	$1\frac{1}{2}$ – $\frac{1}{2}$ – 1	1 – $\sharp$ 2 – 3 – $\sharp$ 4	Hungarian Major
minor $^{\sharp}$ 4	1 – $\frac{1}{2}$ – $1\frac{1}{2}$	1 – 2 – $\flat$ 3 – $\sharp$ 4	Hungarian minor

**MELODIC MODE**

C minor tetrachord      G major tetrachord

**DORIAN  $\flat$ 9 MODE**

C phrygian tetrachord      G minor tetrachord

**LYDIAN  $\sharp$ 5 MODE**

C lydian tetrachord      G $\sharp$  diminished tetrachord

**LYDIAN  $\flat$ 7 MODE**

C lydian tetrachord      G minor tetrachord

**MIXOLYDIAN  $\flat$ 13 MODE**

C major tetrachord      G phrygian tetrachord

**LOCRIAN 9 MODE**

C minor tetrachord      G $\flat$  lydian tetrachord

**SUPER LOCRIAN MODE**

C spanish tetrachord      G $\flat$  lydian tetrachord

## The Dorian minor Parent Scale

The Dorian minor Scale (Dorian Mode) also generates chords and chord scales used in minor functional context. My intuitive guess is that this mode never completely “disappeared” since the “functional tonal revolution” in the Renaissance. It certainly survived as a *mode* in Folk and Ethnic music, and therefore “revived” during the Romantic period (19<sup>th</sup> century). In Jazz music, the Dorian mode sounds almost like a “jazzy signature”, it is used *a lot*.

### SERIES OF DIATONIC CHORDS IN DORIAN MINOR

Cm7	Dm7	E $\flat$ $\Delta$	F7	Gm7	Am7 $\flat$ $5$	B $\flat$ $\Delta$
IIm7	IIIm7	bIIImaj7	IV7	Vm7	VIm7 $\flat$ $5$	bVIIImaj7
T	SD	T	SD	SD	(T)	SD
[Dor]	[Phr]	[Lyd]	[Mixo]	[Aeol]	[Locr]	[Ion]

Remember: The series of Dorian minor diatonic chords.

**Im7 – IIm7 – bIII $\Delta$  – IV7 – Vm7 – VIm7 $\flat$  $5$  – bVII $\Delta$**

The chord scales used for these chords are already known. The Dorian scale being a relative scale to both the natural minor and the Major scale, we need only to shift the order of the chord scales, starting with the [Dorian] scale.

Because of the lack of the leading tone 7 – but the subtonic  $\flat$ 7 instead – there are **no dominant Dorian chords!**

### The Dorian-Im7 Tonic Chord

The Dorian-Im7 or Im6 is a [Dorian] T chord with tensions 9, 11 and 13 – no avoids!

T13 is a “must play” tension if you want the chord to sound Dorian, because T13 is the *typical* characteristic scale degree for the Dorian mode. This chord is used *a lot*.

### The Dorian-IIm7 Subdominant Chord

The Dorian-IIm7 is a [Phrygian] SD chord with tension 11 –  $\flat$ 9 and  $\flat$ 13 are avoid.

This chord is less used than its Natural minor IIm7 $\flat$  $5$  counterpart. But it’s an optional chord to play when the melody “asks for it”, i.e. when the melody uses the raised submediant (6) of the tonality, instead of the lowered submediant ( $\flat$ 6).

### The Dorian-bIII $\Delta$ Tonic Chord

The Dorian-bIII $\Delta$  is a [Lydian] T chord with tensions 9, #11 and 13 – no avoids!

This chord is used quite a lot because it offers a “no avoids” option.

## The Dorian-IV7 Subdominant Chord

The Dorian-IV7 is a [Mixolydian] SD chord with tensions 9 and 13 – 11 is avoid (or sus4).

This chord is used more often than the Dorian-IIIm7 [Phrygian], when the melody “asks for it”, but less often than the Melodic-IV7 [Lydian<sup>b7</sup>] with no avoids.

The Dorian-IV7 actually sounds exactly (kind of *is*<sup>1</sup>) the same as the Blues-IV7, both [Mixolydian] chords. The improvisation options on this chord come consequently also with all the possible Blues scales: the (C) Blues (traditional scale), and the [Blues], [Maj.Blue], [Ext.Blue] chord scales.

## Other Possible Dorian Chords

**The Dorian-Vm7** is a [Aeolian] SD(D) chord with tensions 9 and 11 – b13 is avoid.

This chord is sometimes used, mostly for *modal* reasons.

**The Dorian-VIm7<sup>b5</sup>** is a [Locrian] (T) chord with tensions 11 and b13 – b9 is avoid.

This chord *should* be a Tonic chord, but its lowered fifth b5 makes it unfit to sound as a stable Tonic chord. That’s why this chord is not often used in minor *functional* music.

Its Melodic-VIm7<sup>b5</sup> [Locrian<sup>9</sup>] counterpart is used more often because it comes with a no avoids option.

**The Dorian-bVII<sup>A</sup>** is a [Ionian] SD chord with available tensions 9 and 13 – 11 is avoid.

This chord is sometimes used, mostly for *modal* reasons.

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<sup>1</sup> See [A Modal Approach to the Blues](#) (page 222).

## The minor Tonality as Multimodal System

I started this part by pointing out that the minor functional harmony is a lot more complex than the Major functional harmony. Whereas in Major harmony we use only *seven* chords (actually, only *six* if one leaves VII $m7^5$  out), generated by only *one* parent scale, in minor harmony we have a total of *twenty-eight* chords (*sixteen* if one leaves the less usual out) at our disposal, all generated by *four* different parent scales.

The minor tonality is a Multimodal<sup>1</sup> system, shifting constantly, and *interchanging* chords, between four different minor modes: Natural (for T and SD chords), Harmonic (mostly for D chords, though others, like the T chord  $Im^\Delta$ , are possible), Melodic (mostly for D and SD chords, though others, like the T chord  $Im^\Delta$ , are possible) and Dorian (for T and SD chords).

It can be useful to summarize – to memorize all the possibilities of the system – all these modes in one so-called *composite* minor scale that includes all the tones used.

**C minor composite scale**

Because of all these possibilities, there is a lot more freedom in composition and improvisation.

### Most Used minor Tonic Chords

The  $Im$  central (Tonic) chord can be either one of these choices<sup>2</sup>:

- The Natural minor  $Im7$  [Aeolian]
- The Harmonic  $Im^\Delta$  [Harmonic]
- The Melodic  $Im^\Delta$  or  $Im6$  [Melodic]
- The Dorian  $Im7$  or  $Im6$  [Dorian]

Therefore, you will usually find the central minor chord written as a triad **Im**, leaving the choice to the performer to use either one of these tones in the chord:  $A\natural 6$ ,  $T6$ ,  $b7$  or  $7$ .

Each time you see a minor triad (i.e. on Jazz scores), you are hinted that this chord is – or at least could be perceived as – a minor central chord  $Im$  with *four possible* chord scales.

The other (substitution) Tonic chords can be:

- The Natural minor  $bIII^\Delta$  [Ionian]
- The Natural minor  $bVI^\Delta$  [Lydian]
- The Dorian minor  $bIII^\Delta$  [Lydian]

### Most Used minor Dominant Chords

The Dominant chords can be either one of these choices:

- The Harmonic  $V7^9$  [Spanish Phrygian] (or the “*Lydian*” [Altered] equivalent)
- The Melodic  $V9$  [Mixolydian<sup>b13</sup>] (or the “*Lydian*” [Whole Tone] equivalent)
- The Harmonic  $VII^\circ$  [Ultra Locrian]

<sup>1</sup> I prefer the all Latin term *Multimodal* to the sometimes-used hybrid (Greek-Latin) term *Polymodal*.

<sup>2</sup> As we’ve seen in Tonal Changes on Diatonic Chords (page 105).

## Most Used minor Subdominant Chords

The Subdominant chords can be:

- The Natural minor II $m^{7\flat 5}$  [Locrian]
- The Natural minor IV $m7$  [Dorian]
- The Natural minor  $\flat$ VII $7$  [Mixolydian]
- The Harmonic minor II $m^{7\flat 5}$  [Locrian<sup>13</sup>] (not very often)<sup>1</sup>
- The Melodic minor II $m7$  [Dorian <sup>$\flat 9$</sup> ] (not very often)
- The Melodic minor IV $7$  [Lydian <sup>$\flat 7$</sup> ]
- The Dorian minor II $m7$  [Phrygian]
- The Dorian minor IV $7$  [Mixolydian]

All other chords are not used very often, but they are, at least theoretically, possible.

## LINE-CLICHÉS

One of the typical features of a multimodal system is the possibility to play so-called *Line-Clichés*. Knowing that minor harmony, being multimodal, allows a musical phrase to shift modes at any moment of the song, you can use all the shifting modal tones of the parent scale(s) –  $\flat 6$ , 6,  $\flat 7$  or 7 – the one after the other in the same, or in consequent, bars. A *Line-Cliché* uses that typical feature to generate a varying harmony on one single chord, by creating a melodic *line* moving in semitones, up or down, in the voicing of that chord.

The best-known line-cliché (often attributed to ‘My Funny Valentine’ by Richard Rodgers, but actually used in lots of songs) is:

chord scales [multiple options]  
parent scales C minor

[multiple options]  
C minor

In the first four bars, the moving melodic line sits on top of the chords. In the next four bars, the moving melodic line is used as a downward semitone movement in the bass.

The analysis proposes [multiple options] for the chord scales, indeed ...

- Im can be either [Aeolian], [Harmonic], [Melodic] or [Dorian]
- $Im^\Delta$  can be either [Harmonic] or [Melodic]
- $Im^7$  can be either [Aeolian] or [Dorian]
- $Im^6$  can be either [Melodic] or [Dorian]

And in the parent scale line, the analysis proposes C minor – unspecified – because the parent scales can, obviously also, be either Natural minor, Harmonic minor, Melodic minor or Dorian minor.

<sup>1</sup> These grey chords are rarely used. I’ve added them to the list only because they were mentioned as optional scales to provide for an homogenous parent scale over minor II-V cadences in [Introducing minor Functional Harmony](#) (page 117).

Another famous, though less common, line-cliché (e.g. ‘James Bond Theme’ by Monty Norman/John Barry):

chord scales [multiple options]  
parent scales C minor

The  $A\flat/C$  chord is sometimes (mostly) conveniently written  $Cm^5$  on the score. That chord symbol,  $Cm^5$ , doesn’t fit the theory, but it does indeed *sound* like the tonic chord with an augmented fifth. Actually, it’s the tonic chord with the *suspended* avoid tone  $\flat 13$  instead of the perfect fifth<sup>1</sup> as an approach towards the 6<sup>th</sup> (or 5<sup>th</sup> when going back to  $Im$ ) in the following bar. This is in fact, an auxiliary chord<sup>2</sup> that is translated into a useful chord symbol, given the context.

The analysis, just as in the previous example, proposes [multiple options] for the chord scales, indeed ...

- $Im$  can be either [Aeolian], [Harmonic], [Melodic] or [Dorian]
- $Im^{(\flat 13)}$  can be either [Aeolian] or [Harmonic]
- $Im6$  can be either [Melodic] or [Dorian]

The parent scale line proposes an *unspecified* C minor parent scale (Natural minor, Harmonic minor, Melodic minor or Dorian minor).

Other line-clichés are of course also possible in any creative way you like. Once you allow *any* modal changes<sup>3</sup>, line-clichés become possible in many more contexts, e.g. in Major also, and on many more parent scale degrees, certainly with the use of auxiliary chords like in the last example above.

<sup>1</sup> See [Mastering the Avoids](#) (page 84).

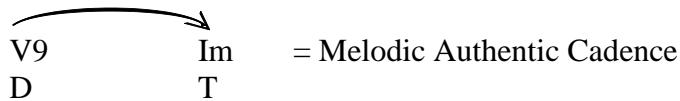
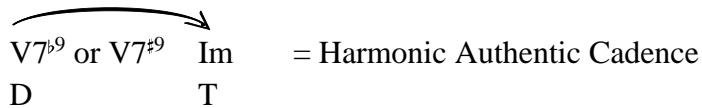
<sup>2</sup> See [Approach Chords and Auxiliary Chords](#) (page 145).

<sup>3</sup> See next part on [Modal Changes](#) (page 197).

## COMMON MINOR CADENCES

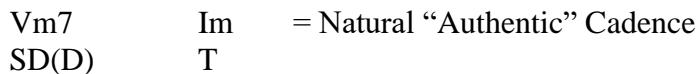
In minor functional music, being a multimodal system, there are a lot more possible cadences than in Major functional music. A good way to remember them is to compare them with – and “translate” them from – the known Major cadences<sup>1</sup>. The following list is not comprehensive.

### The authentic cadence



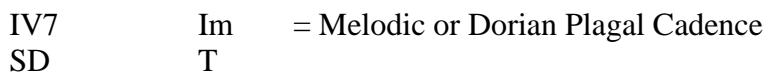
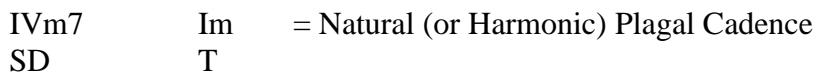
With substitution:  
(or inversion of V7<sup>b9</sup>)      VII°      Im      = Harmonic “Authentic” Cadence  
    D                   T

Im is written as a triad because it could be Im7, Im<sup>Δ</sup> or Im6 (see previous chapter).

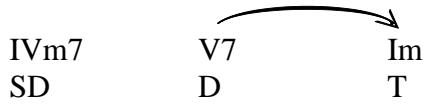


This last cadence is not very common, because it lacks a real Dominant chord. But there's a good (modal non-functional)<sup>2</sup> example of this cadence in the Pop song ‘Ain’t No Sunshine’ by Bill Withers (also with the complete plagal cadence Vm7 – IVm7 – Im, see further).

### The plagal cadence



### The complete IV-V cadence



V7 is written here without T9, you can choose either V7<sup>b9</sup>, V7<sup>#9</sup> (Harmonic) or V9 (Melodic).

<sup>1</sup> See [Major Functional Cadences](#) (page 60).

<sup>2</sup> See [Modal Cadences](#) (page 264).

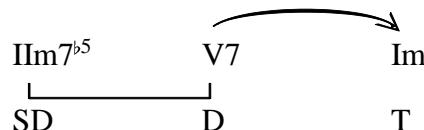
## The complete plagal cadence

V7	IVm7	Im
D	SD	T

And its possible Melodic or Dorian variations with IV7.

(See also Vm7 – IVm7 – Im, mentioned higher, used in ‘Ain’t No Sunshine’ by Bill Withers.)

## The complete II-V cadence



And its possible Melodic or Dorian variations with IIIm7.

## Rhythm Changes

Im	VIm7 <sup>b5</sup>	IIIm7 <sup>b5</sup>	V7
T	(T)	SD	D
Im	♭VI <sup>Δ</sup>	IIIm7 <sup>b5</sup>	V7
T	T	SD	D

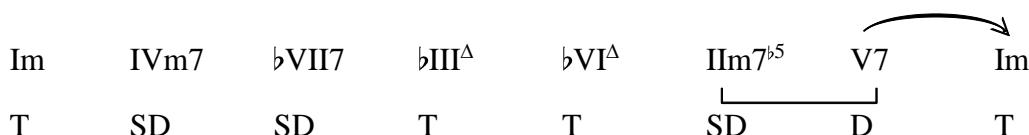
The first variation uses the Melodic (or Dorian) VIm7<sup>b5</sup> to fit perfect fifths.

The second variation, with the Natural minor ♭VI<sup>Δ</sup>, is less common because it doesn't work in perfect fifths (A♭ to D is a diminished fifth).

Minor translations of the IIIIm7 – VIm7 – IIIm7 – V7 “Rhythm Changes”, as such, are less common for that same reason, you'll always have to break the perfect fifths cycle somewhere because of the ♭III<sup>Δ</sup>-chord.

## Mozart Changes

Minor translations of the “Mozart Changes” are very common, though (e.g. 1<sup>st</sup> phrase of the song ‘Fly Me to the Moon’ by Bart Howard, or a Classical example, the 1<sup>st</sup> phrase of the minor part of the ‘Impromptu opus 90 n°2’ by Franz Schubert):



### A New Typical minor Cadence: The $\flat$ VII – Im cadence

$\flat$ VII7	Im	= Natural Cadence
SD	T	
$\flat$ VII $^\Delta$	Im	= Dorian Cadence
SD	T	

IVm7	$\flat$ VII7	Im	= Natural Cadence
SD	SD	T	

The IVm7 –  $\flat$ VII7 is highlighted with a hook, as if it were a II-V cadence, because it *looks* like a II-V cadence. It actually *is* the II-V cadence of the Major relative key.<sup>1</sup>

$\flat$ VI $^\Delta$	$\flat$ VII7	Im	= Natural Cadence
T	SD	T	

This last cadence is found *a lot* in Pop Music<sup>2</sup>, played in triads:  
and also in reversed order:

$\flat$ VI – $\flat$ VII – Im
Im – $\flat$ VII – $\flat$ VI

<sup>1</sup> See also minor Sub-Dominants (SDm) (page 232).

<sup>2</sup> See Modal Cadences (en page 264).

## ANALYSIS OF A SONG IN MINOR

Let's review the analysis of 'Autumn Leaves'<sup>1</sup> (by Joseph Kosma), this time analyzing it in G minor – see notes below and the next page for the analysis. On the subsequent pages, there's a comparative analysis in the relative B♭ Major key.

### **Notes on the minor analysis**

Considering that a minor tonality is a multimodal system, most chords now offer multiple options. The choices I've made are the most common choices, though, for some chords, other evenly common choices could have been made as well.

- **Bar 2 (not counting the pick-up bar):** F7, secondary dominant V7/bIII [Lyd<sup>b7</sup>].  
I've opted for the "Lydian" equivalent of the "expected" [Mixo] chord scale towards a Major chord. It could also be analyzed as the Natural *subdominant* chord bVII7 (see brackets), which would then definitely be [Mixo] (offering less options). (see also bars 10 and 22)
- **Bar 4:** Eb<sup>A</sup>, bVI<sup>A</sup> [Lyd] is a *Tonic* chord in G minor. (see also bars 12, 24 and 29)
- **Bar 6:** D7, *primary dominant* V7 [Mixo<sup>b13</sup>].  
The melody, with the E natural, suggests that this is the Melodic dominant with the a [Mixo<sup>b13</sup>] chord scale. Of course, its "Lydian" [Wh.T] ([Whole Tone]) equivalent is an option too. When the melody is left out during the improvisation, the Harmonic [Sp.Phr] ([Spanish Phrygian]) dominant and its "Lydian" [Alt] ([Altered]) equivalent are options too.
- **Bar 7 and 8:** Gm – (Gm<sup>A</sup> – Gm7 – Gm6), tonic Im – (Im<sup>A</sup> – Im7 – Im6).  
Here I've included a line-cliché (between brackets) to illustrate the multiple options on this chord, hence the unspecified G minor parent scale.<sup>2</sup> (see also bars 15-16, 19-20 and 31-32)
- **Bar 14:** D7, primary dominant V7 [Mixo<sup>b13</sup>] or [Sp.Phr].  
Here, the melody doesn't offer a conclusive choice between the Melodic or the Harmonic dominant. Both are options, as are their "Lydian" [Wh.T] and [Alt] equivalents. (see also bars 18 and 30)
- **Bar 26:** D7, primary dominant V7 [Sp.Phr].  
The Eb in the melody suggests that this is the Harmonic dominant with the [Sp.Phr] chord scale. Of course, its "Lydian" [Alt] equivalent is an option too. When the melody is left out during the improvisation, the Melodic [Mixo<sup>b13</sup>] dominant and its "Lydian" [Wh.T] equivalent are options too.
- **Bar 27:** Gm, tonic Im [Dor] *and also* relative IIIm7/bVII [Dor] (see dotted hook), followed by Gb7, substitution dominant SubV7/bVII [Lyd<sup>b7</sup>] (see dotted arrow).  
I've opted for the [Dor] chord scale because it fits both the primary function (Im) *and* the secondary function (IIIm7/bVII).
- **Bar 28:** Fm7, subdominant bVIIIm7\* [Dor] *and also* IIIm7/bVI [Dor] (see dotted hook), followed by E7, substitution dominant SubV7/bVI [Lyd<sup>b7</sup>] (see dotted arrow).  
The [Dor] chord scale fits both the primary function (\*bVIIIm7 – a *modal interchange* chord we'll learn about very soon<sup>3</sup>) and the secondary function (IIIm7/bVI).

<sup>1</sup> © 1947, 1950, 1987 Enoch Et Cie. (renewed 1975, 1978)

<sup>2</sup> See previous section on Line-Clichés (page 187).

<sup>3</sup> \* See the next part on Modal Changes – Modal Interchange (page 203).

## Autumn Leaves - Joseph Kosma (1905 - 1969) - Analysis in G minor

**A**

1 Cm<sup>7</sup> F<sup>7</sup> B<sup>bΔ</sup> E<sup>bΔ</sup>  
 IVm<sup>7</sup> [Dor] NPS V<sup>7/bIII</sup> (bVII<sup>7</sup>) [Lyd<sup>b7</sup>] [Ion] bIII<sup>Δ</sup> bVI<sup>Δ</sup> Gm Natural  
 chord scales: parent scales:  
 Gm Natural Gm Natural

5 Am<sup>7b5</sup> D<sup>7</sup> Gm (Gm<sup>Δ</sup> Gm<sup>7</sup> Gm<sup>6</sup>)  
 IIIm<sup>7b5</sup> [Locr] V<sup>7</sup> [Mixo<sup>b13</sup>] Gm Melodic Im (Im<sup>Δ</sup> Im<sup>7</sup> Im<sup>6</sup>)  
 [multiple options] G minor

9 Cm<sup>7</sup> F<sup>7</sup> B<sup>bΔ</sup> E<sup>bΔ</sup>  
 IVm<sup>7</sup> [Dor] NPS V<sup>7/bIII</sup> (bVII<sup>7</sup>) [Lyd<sup>b7</sup>] [Ion] bIII<sup>Δ</sup> bVI<sup>Δ</sup> Gm Natural  
 [multiple options] G minor

13 Am<sup>7b5</sup> D<sup>7</sup> Gm  
 IIIm<sup>7b5</sup> [Locr] V<sup>7</sup> [Mixo<sup>b13</sup>] or [Sp.Phr] Gm Melodic or Harmonic Im [multiple options] G minor

**B**

17 Am<sup>7b5</sup> D<sup>7</sup> Gm  
 IIIm<sup>7b5</sup> [Locr] V<sup>7</sup> [Mixo<sup>b13</sup>] or [Sp.Phr] Gm Melodic or Harmonic Im [multiple options] G minor

21 Cm<sup>7</sup> F<sup>7</sup> B<sup>bΔ</sup> E<sup>bΔ</sup>  
 IVm<sup>7</sup> [Dor] NPS V<sup>7/bIII</sup> (bVII<sup>7</sup>) [Lyd<sup>b7</sup>] [Ion] bIII<sup>Δ</sup> bVI<sup>Δ</sup> Gm Natural  
 [multiple options] G minor

25 Am<sup>7b5</sup> D<sup>7</sup> Gm Gb<sup>7</sup> Fm<sup>7</sup> E<sup>7</sup>  
 IIIm<sup>7b5</sup> [Locr] V<sup>7</sup> [Sp.Phr] Gm Harmonic Im SubV<sup>7/bVII</sup> [Dor] [Lyd<sup>b7</sup>] bVIIIm<sup>7\*</sup> [Dor] [Lyd<sup>b7</sup>] SubV<sup>7/bVI</sup>  
 F Major NPS E♭ Major NPS

29 E<sup>bΔ</sup> Am<sup>7b5</sup> D<sup>7</sup> Gm  
 [Lyd] IIIm<sup>7b5</sup> [Locr] [Mixo<sup>b13</sup>] or [Sp.Phr] [multiple options] Gm Melodic or Harmonic G minor

## Autumn Leaves - Joseph Kosma (1905 - 1969) - Analysis in B♭ Major (Relative Major)

**A**

chord scales:  
parent scales:

1 IIm<sup>7</sup> [Dor] B♭ Major NPS

5 Am<sup>7bs</sup> D<sup>7</sup> Gm (Gm<sup>A</sup> Gm<sup>7</sup>) Gm<sup>6</sup>  
VIIIm<sup>7bs</sup> [Locr] V<sup>7/VI</sup> [Mixo<sup>b13</sup>] Gm Melodic  
— VIm (VIm<sup>A</sup> VIm<sup>7</sup>) VIm<sup>6</sup>  
[multiple options]  
G minor

9 Cm<sup>7</sup> F<sup>7</sup> B♭Δ E♭Δ  
IIIm<sup>7</sup> [Dor] B♭ Major NPS  
V<sup>7</sup> [Lyd<sup>b7</sup>] NPS  
[Ion] B♭ Major [Lyd]

13 Am<sup>7bs</sup> D<sup>7</sup> Gm  
VIIIm<sup>7bs</sup> [Locr] V<sup>7/VI</sup> [Mixo<sup>b13</sup>] or [Sp.Phr] Gm Melodic or Harmonic  
— VIm [multiple options]  
G minor

17 Am<sup>7bs</sup> D<sup>7</sup> Gm  
VIIIm<sup>7bs</sup> [Locr] V<sup>7/VI</sup> [Mixo<sup>b13</sup>] or [Sp.Phr] Gm Melodic or Harmonic  
B♭ Major VIm [multiple options]  
G minor

21 Cm<sup>7</sup> F<sup>7</sup> B♭Δ E♭Δ  
IIIm<sup>7</sup> [Dor] B♭ Major NPS  
V<sup>7</sup> [Lyd<sup>b7</sup>] NPS  
[Ion] B♭ Major [Lyd]

25 Am<sup>7bs</sup> D<sup>7</sup> Gm Gb<sup>7</sup> Fm<sup>7</sup> E<sup>7</sup>  
VIIIm<sup>7bs</sup> [Locr] V<sup>7/VI</sup> [Sp.Phr] Gm Harmonic  
— VIm [Dor] SubV<sup>7/V</sup> [Lyd<sup>b7</sup>] NPS  
F Major SubV<sup>7/IV</sup> [Dor] [Lyd<sup>b7</sup>] NPS  
E♭ Major

29 Eb<sup>A</sup> Am<sup>7bs</sup> D<sup>7</sup> Gm  
IV<sup>A</sup> VIIIm<sup>7bs</sup> [Locr] V<sup>7</sup> Im  
[Lyd] [Mixo<sup>b13</sup>] or [Sp.Phr] [multiple options]  
B♭ Major Gm Melodic or Harmonic G minor

### **Notes on the Major analysis**

This is in fact a reminder of what we've seen before, only slightly adapted to ensure a better comparison with the previous minor analysis.

- All chords previously analyzed as G minor Natural chords, with the G minor Natural *parent scale* that is, are now B♭ Major chords, i.e. with the B♭ Major *parent scale*.  
But since both scales are relative scales, the tones you can play on these chords remain exactly the same.
- **Bar 2:** F7, is now the *primary* dominant V7(of I, B♭) [Lyd<sup>b7</sup>].  
I've opted for the "Lydian" equivalent of the "expected" [Mixo] chord scale for the Major dominant, actually exactly the same choice as in the minor analysis. (see also bars 10 and 22)
- **Bar 4:** Eb<sup>A</sup>, IV<sup>A</sup> [Lyd] is a *Subdominant* chord in B♭ Major. (see also bars 12, 24 and 29)
- **Bar 6:** D7, *secondary* dominant V7/VII [Mixo<sup>b13</sup>].  
The melody, with the E natural, suggests this is the Melodic dominant with the a [Mixo<sup>b13</sup>] chord scale. Of course, its "Lydian" [Wh.T] equivalent is an option too. When the melody is left out during the improvisation, the Harmonic [Sp.Phr] dominant and its "Lydian" [Alt] equivalent are options too.
- **Bar 7 and 8:** Gm – (Gm<sup>A</sup> – Gm7 – Gm6), tonic VIm – (VIm<sup>A</sup> – VIm7 – VIm6).  
Here I've included a line-cliché (between brackets) to illustrate the *tonal change* on the VIm chord<sup>1</sup>, and the subsequent multiple options on this chord, hence the unspecified G minor parent scale.<sup>2</sup> (see also bars 15-16, 19-20 and 31-32)
- **Bar 18:** D7, *secondary* dominant V7/VII [Mixo<sup>b13</sup>] or [Sp.Phr].  
One would in the first place, according to what we've seen before in the part on Tonal Changes<sup>3</sup> (page 99), opt for the "expected" Harmonic [Sp.Phr] dominant for V7/VII. But we know now that both options are actually available, since the melody doesn't offer any conclusive choice between the Melodic or the Harmonic dominant. Their "Lydian" [Wh.T] and [Alt] equivalents are, of course, options too. (see also bars 18 and 30)
- **Bar 26:** D7, *secondary* dominant V7/VII [Sp.Phr].  
The Eb in the melody suggests this is the (expected) Harmonic dominant with the [Sp.Phr] chord scale. Of course, its "Lydian" [Alt] equivalent is an option too. When the melody is left out during the improvisation, the Melodic [Mixo<sup>b13</sup>] dominant and its "Lydian" [Wh.T] equivalent become options too.
- **Bar 27:** Gm, Tonic VIm [Dor] (*tonal change*) and also relative IIIm7/V [Dor] (see dotted hook), followed by Gb7, substitution dominant SubV7/V [Lyd<sup>b7</sup>] (see dotted arrow).  
I've opted for the [Dor] chord scale because it fits both the primary function (VIm), if one allows the *tonal change*, and the secondary function (IIIm7/V).
- **Bar 28:** Fm7, subdominant Vm7\* [Dor] and also IIIm7/IV [Dor] (see dotted hook), followed by E7, substitution dominant SubV7/IV [Lyd<sup>b7</sup>] (see dotted arrow).  
The [Dor] chord scale fits both the primary function (\*Vm7 – a *modal interchange* chord we'll learn about very soon<sup>4</sup>) and the secondary function (IIIm7/IV).

<sup>1</sup> See Tonal Change on VIm (page 107).

<sup>2</sup> See previous section on Line-Clichés (page 187).

<sup>3</sup> See Secondary V7 Dominant Chords (page 99).

<sup>4</sup> \* See the next part on Modal Changes – Modal Interchange (page 203).

### **Conclusion**

Up to now, when comparing the minor analysis with the relative Major analysis of ‘Autumn Leaves’, one could wonder why bother with the complexity of the minor functional harmony, since the findings of both analyses’, i.e. *in chord scale options*, are actually exactly the same. The “tools” we’ve learned in the parts on Tonal Changes (page 99) and on Dominant Chord Scales (page 125) offer exactly the same options as the new “tools” we’ve just learned in this part.

But, as we’ll see in the next part, once Modal Changes (page 197) are used in a song, the knowledge of minor functional harmony becomes very useful indeed.

# MODAL CHANGES

## Brightness of the Modes

Before we set off to study all the possible modal changes, it's useful to refresh the notion of *brightness* of the modes<sup>1</sup>, a typical *modal* concept. Modes with raised degrees have a *brighter* color than modes with lowered degrees; the more lowered degrees in the scale, the *darker* the color gets.

The idea of a *modal change* is to alter – to *brighten* or to *darken* – the *color* of the original key in which the song is written, by altering some (mostly *modal*) scale degrees of the *parent scale*, altering the generated diatonic chords and subsequent chord scales at the same time.

You'll always find it easier, when composing and/or improvising, to darken the color starting from a bright context – e.g. a Major context – by lowering the *modal* degrees 2, 3, 6 or 7 (and, exceptionally, tonal degree 5 also) to  $\flat 2$ ,  $\flat 3$ ,  $\flat 6$  or  $\flat 7$  (and  $\flat 5$ ), and then eventually brighten them up again.

The opposite, to brighten up an original dark color – by raising  $\sharp 2$ ,  $\sharp 3$ ,  $\sharp 6$  or  $\sharp 7$  to 2, 3, 6 or 7 – is of course also possible, but it usually needs a more resolute attitude, and a clearer, stronger phrasing<sup>2</sup>. Brightening up the 4<sup>th</sup> (tonal) degree to  $\sharp 4$  is also a common modal change, remember The Lydian Concept (page 20).

The purpose of brightening, or darkening, the original key is not, in the first place, for *functional* reasons, but mostly for coloring – or *modal* – reasons, although both concepts tend to overlap<sup>3</sup>. I'll try to clarify both concepts, and their use, in the following sections.

### ***Important note***

Some chords and chord scales we're about to see are definitely used more often than others.<sup>4</sup> It is, however, quite difficult to draw a clear line between "chords that are used a lot", "chords that are used only rarely", and "chords that are almost never used", especially since the (frequent, or not) use of these chords is essentially a matter of (personal, or other) taste.

The chapter Avoid the Avoids (page 230), further in this part, will provide *some* clues on how – and why – these chords and chord scales are used, according to different styles of music.

*It's really up to you, the reader, to try out these chords, and to assess how they actually sound!*

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<sup>1</sup> See Brightness of the Modes (Chord Scales) (page 79).

<sup>2</sup> See Modal Changes on Dominant Chords (page 133).

<sup>3</sup> See Concepts in this Book (page 15).

<sup>4</sup> As explained in the previous part (and sections) on minor Functional Harmony (page 167).

## The Major<sup>b6</sup> Parent Scale

This parent scale was mentioned only briefly before, in the parts on Tonal Changes<sup>1</sup> (page 99) and Dominant Chord Scales (page 125) as the parent scale to the [Mixo<sup>b9</sup>] dominant chord. To understand both the Modal Interchange (page 203) and the minor Sub-Dominants (SDm) (page 232) concepts we'll be studying further in this part, it's useful to present a complete overview of this parent scale right now.

### ORIGINS OF THE MAJOR<sup>b6</sup> MODE

We've just learned about the four minor modes (parent scales) – Natural, Harmonic, Melodic and Dorian – that together make up the Functional *minor* Multimodal System. The Major<sup>b6</sup> scale is, in that same way, another Major mode that is part of the Functional *Major* Multimodal System we'll be seeing very soon. The comparison between both multimodal systems allows us to understand the origins of that scale. So, let's first recapitulate the origins of the minor multimodal system.

1. Because the Natural minor mode is unfit to generate a Dominant chord, the Harmonic minor mode was invented, for “harmonic” reasons. This mode was originally meant to generate a (two) Dominant chord(s) *only*.
2. Because of the harmonic gap in the Harmonic minor mode, the melody sounded strange and difficult to sing. So, the Melodic minor mode was invented, for “melodic” reasons. This mode was originally meant only to modify the Dominant chord – with tension 9 instead of b9 – so as to create smoother melodic lines.

*But*, and here's the clue, this mode also provided the minor multimodal system with a Major Subdominant chord: IV instead of IVm. That's why the German classical schools used to call this mode the Dür-Moll mode, meaning exactly that: providing a Major (= dür) subdominant (IV) to the minor (= moll) tonic (Im).<sup>2</sup>

3. The Dorian mode (that actually also provides a Major IV-chord) wasn't used very often by older Classical composers, and is therefore seldom studied in classical schools. I've added it to the minor multimodal system because it has a very typical color used a lot in “popular” (meaning “non-classical”) music.

So, what are the origins of the Major multimodal system?

1. The Major mode is perfectly fit to generate a Dominant chord. No need to invent another (“harmonic”) mode.
2. The melodic lines in the Major mode are sufficiently smooth, evolving in whole tones and semitones, no harmonic gap here. No need to invent another (“melodic”) mode.

*But*, it might be interesting to have a mode that provides a minor (= moll) subdominant (IVm) to the Major (= dür) tonic (I)<sup>3</sup>, and that's how the Moll-Dür, otherwise known

<sup>1</sup> See Introducing the Majorb6 Parent Scale (page 118).

<sup>2</sup> The complete Melodic cadence, using the classical triads for I and IV, is Im – IV – V7 – Im.

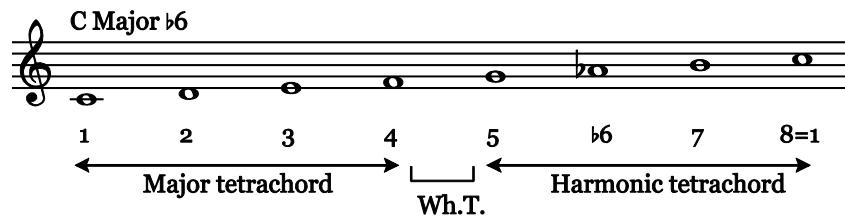
<sup>3</sup> The complete Major<sup>b6</sup> cadence, using the classical triads for I and IV, is I – IVm – V7 – I.

as the Major<sup>b6</sup> scale was invented. It's indeed the parent scale to some<sup>1</sup> so-called *minor Sub-Dominant* chords (SDm chords). That scale is at the origin of the whole *minor subdominant* concept that we'll study later in this part.

3. For now, let's keep it to the two – Major and Major<sup>b6</sup> – modes for the Major multimodal system. But we'll see how it's possible, and actually not that strange, to add the Lydian and the Mixolydian modes to the system too.

## MAIN MAJOR<sup>b6</sup> CHORDS

As its name suggests, The Major<sup>b6</sup> scale is a Major scale with a lowered 6<sup>th</sup> degree.



Due to its 1<sup>st</sup> Major tetrachord and its 2<sup>nd</sup> harmonic tetrachord, this scale is also called a "hybrid" scale, meaning that it mixes Major and minor components (i.e. tetrachords)<sup>2</sup>.

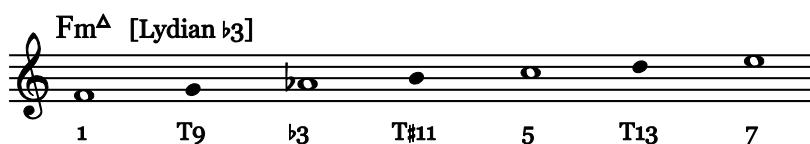
We can see how the b6 degree affects the generated chords and chord scales:

C <sup>A</sup>	Dm7 <sup>b5</sup>	Em7	Fm <sup>A</sup>	G <sup>7b9</sup>	A <sup>bA#5</sup>	B <sup>o</sup>
I <sup>A</sup>	II <sup>m7b5</sup>	III <sup>m7</sup>	IV <sup>mA</sup>	V <sup>7b9</sup>	VI <sup>bA#5</sup>	VII
T	SDm	T	SDm	D	T	D
[Maj <sup>b6</sup> ]	[Dor <sup>b5</sup> ]	[Phr <sup>b4</sup> ]	[Lyd <sup>b3</sup> ]	[Mixob <sup>b9</sup> ]	[Lyd <sup>#2/#5</sup> ]	[Locr <sup>b7</sup> ]

The main chords are listed below in order of their importance and frequency of use.

### minor Sub-Dominant chords (SDm chords)

The Major<sup>b6</sup>-IVm<sup>A</sup> is a [Lydian<sup>b3</sup>] SDm chord with T9, T#11 and T13 – no avoids.



This IVm<sup>A</sup> chord is *the minor subdominant* (minor = moll) that explains the German "Moll-Dür" name of the parent scale (see above).

That chord is also at the origin of the whole concept, the actual *naming*, of *minor Sub-Dominants* (SDm) chords. Indeed, the other SDm-chords we'll learn about later won't all be *minor* chords, nor will they (necessarily) be generated by a *minor* parent scale (and mostly,

<sup>1</sup> We'll see, in the chapter on minor Sub-Dominants (SDm) (page 232), that there are yet more minor Sub-Dominant chords to discover.

<sup>2</sup> Its name in French, *mixte-Majeure*, means "Major hybrid" – in Dutch, *gemengd*, means "hybrid". "Harmonic Major" is yet another name for this scale, because it's a Harmonic scale with a Major 3<sup>rd</sup>.

they're not, as is the case for this particular  $\text{IVm}^\Delta$  chord). They're considered SDm chords too, only because they're generated by a similar technique, i.e. by lowering the 6<sup>th</sup> degree<sup>1</sup> of the original Major key.

Below are two well-known Pop-examples that use the  $\text{IVm}^\Delta$  chord.

‘All By Myself’ (by Eric Carmen – inspired from Sergei Rachmaninoff’s 2<sup>nd</sup> piano concerto):

The musical notation shows a progression in F major (4/4 time, treble clef). It starts with a measure of F major (I<sup>(Δ)</sup> [Ion]), followed by a measure of BbmΔ (IVm<sup>Δ</sup> [Lyd b3]), and ends with a measure of F major (I<sup>(Δ)</sup> [Ion]). The notes are eighth notes, and there are fermatas at the end of each measure.

‘One Day I’ll Fly Away’ (by Will Jennings and Joe Sample)

The musical notation shows a progression in D major (4/4 time, treble clef). It starts with a measure of D major (I<sup>(Δ)</sup> [Ion]), followed by a measure of Gm/D (IVm<sup>Δ</sup> [Lyd b3]), and ends with a measure of D major (I<sup>(Δ)</sup> [Ion]). The notes are eighth notes, and there is a fermata at the end of the first measure.

**The Major<sup>b6</sup>-IIm7<sup>b5</sup>** is a [Dorian<sup>b5</sup>] SDm chord with T9, T11 and T13 – no avoids.

The musical notation shows the notes of the Dm7<sup>b5</sup> chord in Dorian mode. The notes are: 1 (A), T9 (C), b3 (E), T11 (G), b5 (B), T13 (D), and b7 (F#). The chord is labeled "Dm7<sup>b5</sup> [Dorian b5]" above the staff.

The most striking color of this [Dor<sup>b5</sup>] chord is that it's a m7<sup>b5</sup>-chord that, for once, is not a [Locrian] (or Locrian variant) chord. Compared to the [Locrian] chord, this new minor subdominant (SDm) comes with T9 (instead of Avb9) and T13 (instead of Tb13).

This chord, with its [Dor<sup>b5</sup>] chord scale can be used on the (seemingly minor, but actually) Major IIIm7<sup>b5</sup> – V7<sup>b9</sup> – I<sup>Δ</sup> cadence, offering a homogenous parent scale – the Major<sup>b6</sup> scale – for both chords.<sup>2</sup>

<sup>1</sup> ... and/or by lowering the 2<sup>nd</sup> degree. See [minor Sub-Dominants \(SDm\)](#) (page 232).

<sup>2</sup> See [Introducing the Majorb6 Parent Scale](#) (page 118).

## Dominant Chords

The Major<sup>b6</sup>-V7<sup>b9</sup> is a [Mixolydian<sup>b9</sup>] Dominant chord with T<sup>b9</sup>, T<sup>#9</sup> and T13 – 11 is avoid (or sus4).

G<sup>b9</sup> [Mixolydian <sup>b9</sup>]

1      Tb9      T#9      3      Av11      5      T13      b7

This chord isn't new. It was already mentioned in the part on [Dominant Chord Scales](#)<sup>1</sup> (page 125).

The Major<sup>b6</sup>-VII° is a [Locrian<sup>b7</sup>] Dominant chord with T11, T<sup>b13</sup> and T7 – <sup>b9</sup> is avoid.

B° [Locrian <sup>b7</sup>]

1      Avb9      b3      T11      b5      Tb13      bb7      7

This chord isn't new. It was already mentioned in the part on [Approach Chords and Auxiliary Chords](#)<sup>2</sup> (page 145).

## Tonic Chord

The Major<sup>b6</sup>-I<sup>A</sup> is a [Major<sup>b6</sup>] Tonic chord with T9 – 11 and <sup>b13</sup> are avoids.

C<sup>A</sup> [Major <sup>b6</sup>]

1      T9      3      Av11      5      Avb13      7

This chord isn't used very often because it comes with two avoid tones (instead of only Av11 in the [Ionian] scale), certainly not by Jazz musicians who usually prefer to “[Avoid the Avoids](#)” (page 230).

The remaining (substitution) Tonic chords, the Major<sup>b6</sup>-IIIm7 [Phr<sup>b4</sup>] and the Major<sup>b6</sup>-bVI<sup>A#5</sup> [Lyd<sup>#2/#5</sup>] are theoretically possible, but are rarely used.

<sup>1</sup> See [The Majorb6-V7 \[Mixolydianb9\]](#) (page 128).

<sup>2</sup> See [Chord Scales for Diminished Chords](#) (page 147).

Here's an example of the (possible) use of the Major $\flat^6$ -Im $\Delta$  [Maj $\flat^6$ ] chord in the first phrase of 'All The Things You Are' (by Jerome Kern and Oscar Hammerstein)

The musical score shows a harmonic progression in 4/4 time with a key signature of four flats. The chords are:

- Fm $^7$
- B $\flat$ m $^7$
- E $\flat$ 7
- A $\flat$  $\Delta$
- D $\flat$  $\Delta$
- G7
- C $\Delta$

Below the chords, the modal analysis is provided:

- VIm $^7$  [Aeol]
- IIm $^7$  [Dor]
- V7 [Mixo]
- I $\Delta$  [Ion]
- IV $\Delta$  [Lyd]
- modulation to C Major: V7/III [Sp.Phr]
- I $\Delta$  [Maj  $\flat$ 6]

Coming from “darker” keys and giving in to the residual tones:

- Bar 6: Coming from a key with 4 flats, the G7 chord demands to restore both B $\flat$  and D $\flat$  to B and D natural. There's nothing in the score to suggest that we need to restore both E $\flat$  and A $\flat$  to E and A natural. Following the residual tones method, the resulting chord scale on G7 is the [Sp.Phr] scale with A $\flat$  as tension  $\flat$ 9 and E $\flat$  as tension  $\flat$ 13.
- Bar 7 (and 8): Now the C $\Delta$  chord, and the melody, demand to restore E $\flat$  to E natural. Though, there's still nothing to suggest that we need to restore the A $\flat$  as well. Following the residual tones method, the resulting chord scale on C $\Delta$  is the [Major $\flat^6$ ] scale on I $\Delta$ , with A $\flat$  as Av $\flat$ 13, a scale with a slightly “weeping” sound.

## Modal Interchange

The *Modal Interchange* consists in swapping chords between known parent scales (or modes) of a multimodal system, in order to *darken*, or *brighten up*, the tonality. For example:

One can use the SDm Major<sup>b6</sup>-IVm<sup>Δ</sup> [Lyd<sup>b3</sup>] chord – or its substitution chord, the SDm Major<sup>b6</sup>-IIIm7<sup>b5</sup> [Dor<sup>b5</sup>], for that matter – instead of the SD Major-IV<sup>Δ</sup> [Lyd] chord, to darken the tonality in a particular fragment of the composition.

The technique is not new since we've already encountered a few modal interchanges in the previous parts and chapters. So, let's review what we've seen so far.

- We've learned about *two parent scales in Major*: the Major (Ionian) and the Major<sup>b6</sup> modes
- And, we've also learned about *four parent scales in minor*: the Natural minor (Aeolian), Harmonic minor, Melodic minor and Dorian minor modes

All these parent scales generate chords (and chord scales) that can be interchanged – i.e. *the modal interchange* – between them.

## FUNCTIONAL MAJOR MULTIMODAL SYSTEM

With the Major<sup>b6</sup> parent scale we've just learned, this is how the Major multimodal system looks like:

		1	2	3	4	5	6	7
From Bright to Dark ↓	Major (Ionian)	I <sup>Δ</sup> [Ion] T	IIIm7 [Dor] SD	IIIIm7 [Phr] T	IV <sup>Δ</sup> [Lyd] SD	V7 [Mixo] D	VIIm7 [Aeol] T	VIIIm7 <sup>b5</sup> [Locr] D
	Major <sup>b6</sup>	1	2	3	4	5	b6	7
	Major <sup>b6</sup>	I <sup>Δ</sup> [Maj <sup>b6</sup> ] T	IIIm7 <sup>b5</sup> [Dor <sup>b5</sup> ] SDm	IIIIm7 [Phr <sup>b4</sup> ] T	IVm <sup>Δ</sup> [Lyd <sup>b3</sup> ] SDm	V7 <sup>b9</sup> [Mixo <sup>b9</sup> ] D	bVI <sup>Δ±5</sup> [Lyd <sup>#2-#5</sup> ] T	VII <sup>○</sup> [Locr <sup>b7</sup> ] D

We have now ...

**Six possible Tonic chords:** two *central* Tonic chords, the Major-I<sup>Δ</sup> [Ion] and the Major<sup>b6</sup>-I<sup>Δ</sup> [Maj<sup>b6</sup>], and four *substitution* Tonic chords, the Major-IIIIm7 [Phr], the Major-VIIm7 [Aeol], the Major<sup>b6</sup>-IIIm7 [Phr<sup>b4</sup>] and the Major<sup>b6</sup>-bVI<sup>Δ±5</sup> [Lyd<sup>#2/#5</sup>].<sup>1</sup>

**Four possible Subdominant chords:** the Major-IIIm7 [Dor] and the Major-IV<sup>Δ</sup> [Lyd], and the minor Subdominants the Major<sup>b6</sup>-IIIm7<sup>b5</sup> [Dor<sup>b5</sup>] and the Major<sup>b6</sup>-VIIm7<sup>b5</sup> [Locr].

**Four possible Dominant chords:** the main dominants, the Major-V7 [Mixo] and the Major<sup>b6</sup>-V7<sup>b9</sup> [Mixo<sup>b9</sup>], and their substitutions, the Major-VIIIm7<sup>b5</sup> [Locr] and the Major<sup>b6</sup>-VII<sup>○</sup> [Locr<sup>b7</sup>].

<sup>1</sup> The two chords last mentioned are actually rarely used, but as said before, it is now up to you to try out the chords, and to assess how they actually sound!

We can *interchange* (swap, or substitute) these chords amongst themselves as long as they keep the same function, just as we've learned before. None of the possible *interchanges* with the Major<sup>b6</sup> chords are *necessary* from a *functional* point of view though; we don't *need* these chords since all the chord functions are already available in the Major scale.

But these *interchanges* offer a *darkening* of the Major scale, and are therefore *modal changes*.

## FUNCTIONAL MINOR MULTIMODAL SYSTEM

Here's the minor multimodal system as seen in the previous part:

		1	2	<b>♭3</b>	4	5	6	7
	minor Melodic	Im <sup>Δ</sup> [Mel] T	IIm7 [Dor <sup>b9</sup> ] SD	♭III <sup>Δ#5</sup> [Lyd <sup>#5</sup> ] T	IV7 [Lyd <sup>b7</sup> ] SD	V7 [Mixo <sup>b13</sup> ] D	VIm7 <sup>b5</sup> [Locr <sup>9</sup> ] T	VIIIm7 <sup>b5</sup> [S.Locr] D
	minor Harmonic	1 Im <sup>Δ</sup> [Harm] T	2 IIm7 <sup>b5</sup> [Locr <sup>13</sup> ] SD	<b>♭3</b> ♭III <sup>Δ#5</sup> [Ion <sup>#5</sup> ] T	4 IVm7 [Dor <sup>#4</sup> ] SD	5 V7 [Sp.Phr] D	<b>♭6</b> ♭VI <sup>Δ</sup> [Lyd <sup>#9</sup> ] T	7 VII <sup>°</sup> [U.Locr] D
	minor Dorian	1 Im7 [Dor] T	2 IIm7 [Phr] SD	<b>♭3</b> ♭III <sup>Δ</sup> [Lyd] T	4 IV7 [Mixo] SD	5 Vm7 [Aeol] SD(D)	6 VIm7 <sup>b5</sup> [Locr] T	<b>♭7</b> ♭VII <sup>Δ</sup> [Ion] SD
	minor Natural (Aeolian)	1 Im7 [Aeol] T	2 IIm7 <sup>b5</sup> [Locr] SD	<b>♭3</b> ♭III <sup>Δ</sup> [Ion] T	4 IVm7 [Dor] SD	5 Vm7 [Phr] SD(D)	<b>♭6</b> ♭VI <sup>Δ</sup> [Lyd] T	<b>♭7</b> ♭VII7 [Mixo] SD

The interchange – on V – between the Natural scale with the Harmonic scale is, as learned in the previous part on minor Functional Harmony (page 167), *essential* to provide a Dominant chord to the minor key (or tonality), and is therefore indispensable from a *functional* point of view.

All other interchanges are not essential for functional reasons, and are therefore purely *modal changes*. Shifting from Natural to Dorian, or from Harmonic to Melodic, provides a *brightening* of these minor scales.

## FUNCTIONAL MAJOR/MINOR MULTIMODAL SYSTEMS

Modal interchanges are also possible between Major and minor. Shifting from Major to minor, and conversely, from minor to Major, are definitely *modal changes*.

	Major (Ionian)	1 I <sup>Δ</sup> [Ion] T	2 IIm7 [Dor] SD	3 III <sup>Δ</sup> m7 [Phr] T	4 IV <sup>Δ</sup> [Lyd] SD	5 V7 [Mixo] D	6 VI <sup>Δ</sup> m7 [Aeol] T	7 VII <sup>Δ</sup> m7 <sup>b5</sup> [Locr] D
From Bright to Dark	Major <sup>b6</sup>	1	2	3	4	5	<b>6</b>	7
		I <sup>Δ</sup> [Maj <sup>b6</sup> ] T	II <sup>Δ</sup> m7 <sup>b5</sup> [Dor <sup>b5</sup> ] SDm	III <sup>Δ</sup> m7 [Phr <sup>b4</sup> ] T	IV <sup>m</sup> <sup>Δ</sup> [Lyd <sup>b3</sup> ] SDm	V7 <sup>b9</sup> [Mixo <sup>b9</sup> ] D	<b>VI<sup>Δ</sup><sup>b5</sup></b> [Lyd <sup>#2-#5</sup> ] T	VII <sup>°</sup> [Locr <sup>b7</sup> ] D
From Bright to Dark	minor Melodic	1	2	<b>3</b>	4	5	6	7
		Im <sup>Δ</sup> [Mel] T	II <sup>Δ</sup> m7 [Dor <sup>b9</sup> ] SD	<b>III<sup>Δ</sup><sup>b5</sup></b> [Lyd <sup>#5</sup> ] T	IV7 [Lyd <sup>b7</sup> ] SD	V7 [Mixo <sup>b13</sup> ] D	VI <sup>Δ</sup> <sup>b5</sup> [Locr <sup>9</sup> ] T	VII <sup>Δ</sup> [S.Locr] D
From Bright to Dark	minor Harmonic	1	2	<b>3</b>	4	5	<b>6</b>	7
		Im <sup>Δ</sup> [Harm] T	II <sup>Δ</sup> m7 <sup>b5</sup> [Locr <sup>13</sup> ] SD	<b>III<sup>Δ</sup><sup>b5</sup></b> [Ion <sup>#5</sup> ] T	IV <sup>m</sup> <sup>7</sup> [Dor <sup>#4</sup> ] SD	V7 [Sp.Phr] D	<b>VI<sup>Δ</sup></b> [Lyd <sup>#9</sup> ] T	VII <sup>°</sup> [U.Locr] D
From Bright to Dark	minor Dorian	1	2	<b>3</b>	4	5	6	<b>7</b>
		Im7 [Dor] T	II <sup>Δ</sup> m7 [Phr] SD	<b>III<sup>Δ</sup></b> [Lyd] T	IV7 [Mixo] SD	Vm7 [Aeol] SD(D)	VI <sup>Δ</sup> <sup>b5</sup> [Locr] T	<b>VII<sup>Δ</sup></b> [Ion] SD
From Bright to Dark	minor Natural (Aeolian)	1	2	<b>3</b>	4	5	<b>6</b>	<b>7</b>
		Im7 [Aeol] T	II <sup>Δ</sup> m7 <sup>b5</sup> [Locr] SD	<b>III<sup>Δ</sup></b> [Ion] T	IV <sup>m</sup> <sup>7</sup> [Dor] SD	Vm7 [Phr] SD(D)	<b>VI<sup>Δ</sup></b> [Lyd] T	<b>VII7</b> [Mixo] SD

The most common modal interchanges happen with the Dominant chords – Major-V7 [Mixo], Major<sup>b6</sup>-V7<sup>b9</sup> [Mixo<sup>b9</sup>], Melodic-V9 [Mixo<sup>b13</sup>] and Harmonic V7<sup>b9-b13</sup> [Sp.Phr] – as we've seen in the part on Dominant Chord Scales (page 125). Once again, the change from Major to minor, and back, sounds a lot “easier” than the opposite, though the opposite is possible too.

Other interchanges are quite common too. We saw the minor cadence being used in a Major context, exchanging the Major-IIm7 [Dor] SD chord for a minor-II<sup>Δ</sup>m7<sup>b5</sup> [Locr] SD chord, and conversely.

These are the only Major/minor *modal changes* we've seen so far<sup>1</sup>. But there are many more possibilities we still need to learn about.

<sup>1</sup> We've actually seen other modal changes too, like e.g. Blues, that will be explained very soon.

## MODAL MAJOR/MINOR MULTIMODAL SYSTEMS

The interchanges between the “old”, so-called *church*, modes – the Lydian, Ionian, Mixolydian, Dorian, Aeolian, Phrygian and Locrian modes<sup>1</sup> – are quite common too, though strictly *modal*.

Modes that include 3, i.e. the Major third, are obviously “Major” modes.

Modes that include  $\flat 3$ , i.e. the minor third, are obviously “minor” modes.

		1	2	3	#4	5	6	7
From Bright to Dark	Lydian	I $\Delta$ [Lyd] T	II7 [Mixo] SD	III $m7$ [Aeol] T	#IV $m7^{\flat 5}$ [Locr] SD	V $\Delta$ [Ion] SD(D)	V $Im7$ [Dor] T	VII $m7$ [Phr] SD
		1	2	3	4	5	6	7
Ionian (Major)	Ionian (Major)	I $\Delta$ [Ion] T	II $m7$ [Dor] SD	III $m7$ [Phr] T	IV $\Delta$ [Lyd] SD	<b>V7</b> <b>[Mixo]</b> <b>D</b>	V $Im7$ [Aeol] (T)	VII $m7^{\flat 5}$ [Locr] D
		1	2	3	4	5	6	$\flat 7$
Mixo-lydian	Mixo-lydian	I7 [Mixo] T	II $m7$ [Aeol] SD	III $m7^{\flat 5}$ [Locr] (T)	IV $\Delta$ [Ion] SD	V $m7$ [Dor] SD(D)	V $Im7$ [Phr] T	$\flat VII^{\Delta}$ [Lyd] SD
		1	2	$\flat 3$	4	5	6	$\flat 7$
Dorian	Dorian	Im7 [Dor] T	II $m7$ [Phr] SD	$\flat III^{\Delta}$ [Lyd] T	IV7 [Mixo] SD	V $m7$ [Aeol] SD(D)	VII $m7^{\flat 5}$ [Locr] (T)	$\flat VII^{\Delta}$ [Ion] SD
		1	2	$\flat 3$	4	5	6	$\flat 7$
Aeolian (minor Natural)	Aeolian (minor Natural)	1	2	$\flat 3$	4	5	$\flat 6$	$\flat 7$
		Im7 [Aeol] T	II $m7^{\flat 5}$ [Locr] SD	$\flat III^{\Delta}$ [Ion] T	IV $m7$ [Dor] SD	V $m7$ [Phr] SD(D)	$\flat VI^{\Delta}$ [Lyd] T	$\flat VII7$ [Mixo] SD
Phrygian	Phrygian	1	$\flat 2$	$\flat 3$	4	5	$\flat 6$	$\flat 7$
		Im7 [Phr] T	$\flat II^{\Delta}$ [Lyd] SD	$\flat III7$ [Mixo] T	IV $m7$ [Aeol] SD	V $m7^{\flat 5}$ [Locr] SD(D)	$\flat VI^{\Delta}$ [Ion] T	$\flat VIIm7$ [Dor] SD
Locrian	Locrian	1	$\flat 2$	$\flat 3$	4	$\flat 5$	$\flat 6$	$\flat 7$
		Im $7^{\flat 5}$ [Locr] (T)	$\flat II^{\Delta}$ [Ion] SD	$\flat IIIm7$ [Dor] T	IV $m7$ [Phr] SD	$\flat V^{\Delta}$ [Lyd] SD(D)	$\flat VI7$ [Mixo] T	$\flat VIIm7$ [Aeol] SD

All these chords are possible *modal* interchanges.

The only mode *with* a functional Dominant chord is the Ionian (Major) mode. None of the other modes generates a functional Dominant chord. That’s why all the possible interchanges between these modes are considered *modal* and *non-functional*.

Which brings us, inevitably, to the conclusion that one speaks of *functional* systems only in regard to the presence of a (or more) functional Dominant chord(s). Indeed, the other functions, Tonic and Subdominant, are always available.

<sup>1</sup> The Locrian mode, though, was *not* a church mode!

If one wishes to provide a Dominant chord to the modes that lack one – as we did for the Aeolian (or Natural minor) mode in the minor Functional Harmony (page 167) – this is what happens.

To include the indispensable (dominant) tritone of the tonality one needs to ...

- Lydian mode              lower the  $\sharp 4^{\text{th}}$  degree              => Ionian mode
- Ionian mode              (no need)              => Ionian mode
- Mixolydian mode        raise the  $\flat 7^{\text{th}}$  degree              => Ionian mode
- Dorian mode              raise the  $\flat 7^{\text{th}}$  degree              => Melodic mode
- Aeolian mode            raise the  $\flat 7^{\text{th}}$  degree              => Harmonic mode
  
- Phrygian mode            raise the  $\flat 7^{\text{th}}$  degree              => Phrygian<sup>7</sup> mode
- Locrian mode            raise the  $5^{\text{th}}$  and the  $\flat 7^{\text{th}}$  degree              => Phrygian<sup>7</sup> mode

The first five handlings bring us back to the already known *functional* multimodal systems mentioned above, with the Ionian, Harmonic and Melodic scales as parent scales for Dominant chords. The Major<sup>b6</sup> parent scale is not present here, and is therefore also usually considered a *modal* scale (though still providing a *functional* Dominant).

The last two handlings are quite unusual (though theoretically possible<sup>1</sup>), which explains why both the Phrygian and the Locrian mode are not used (very often) for interchanges in *functional* multimodal systems. However, from a strictly *modal* point of view, the Phrygian<sup>2</sup> and Locrian modes are perfectly available for interchanges.

<sup>1</sup> Using the Phrygian<sup>7</sup> scale as parent scale for a Dominant chord is not usual, especially because the consecutive semitones in the scale – 7, 1 and  $\flat 2$  – give the scale a cluster like sound; even more so when keeping the  $\flat 7^{\text{th}}$  degree to fill in the harmonic gap between  $\flat 6$  and 7 –  $\flat 7$ , 7, 1,  $\flat 2$ .

Interestingly, the resulting chord scale for the V7-chord would be the [Altered] scale, *with* the avoid 4<sup>th</sup> degree (C), which *could* explain the “missing link” between the V7 [Alt] scale and the “original” tonality.  
(See Tension #11 on page 130.)

C Phrygian <sup>7</sup>					C	D $\flat$	E $\flat$	F	G	A $\flat$	(B $\flat$ )	B
					1	$\flat 2$	$\flat 3$	4	5	$\flat 6$	( $\flat 7$ )	7
G Altered	1	$\flat 2$	$\sharp 2$	3	(4)	$\sharp 4$	$\flat 6$	$\flat 7$	1	$\flat 2$	$\sharp 2$	3
	G	A $\flat$	A $\sharp$	B	(C)	C $\sharp$	E $\flat$	F	G	A $\flat$	A $\sharp$	B

<sup>2</sup> E.g. Spanish Music. See Modal Cadences – Phrygian mode (page 269).

## DETERMINING THE PARENT SCALE FOR MODAL INTERCHANGES

Determining the correct parent scale(s) for a modal interchange chord can be tricky.

Take for example the Fm7 chord in a C context (Major or minor).

It can be any of these interchanges:

- The Aeolian- (or Natural minor-) IVm7 [Dor]
- The Phrygian-IVm7 [Aeol]
- The Locrian-IVm7 [Phr]

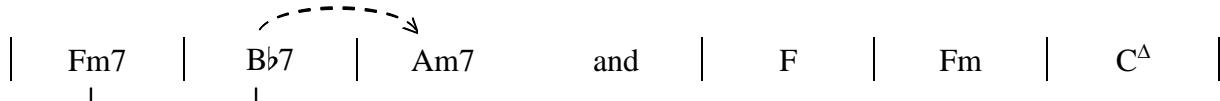
And, less common, though theoretically also possible

- The Harmonic-IVm7 [Dor<sup>#4</sup>]

And, if one considers the *triad* IVm also, it can be

- The Major<sup>b6</sup>-IVm<sup>(Δ)</sup> [Lyd<sup>b3</sup>]

Any of these solutions *is* actually an option, so the context should guide your choices. Take these two contexts (taken out of the examples below and analysis's in the next section):



In the first context the Fm7 is a *relative-II* chord (conveniently here, in a sub-cadence towards VIm7); in the second context, the Fm (triad) is an *isolated* chord (i.e. not in a II-V cadence) between F and C<sup>Δ</sup>. We have three different methods at our disposal to determine the correct parents scale(s) and the resulting chord scale(s) for that Fm(7) chord.

### “Stricter Rule”

This is certainly the “easiest” method, but also the less interesting one, moreover, it works only with relative-II chords (first context), not for isolated chords. The “stricter rule” tells us to ignore the multiple options and to stick to the [Dorian] chord scale for relative-IIIm7chords and to the [Locrian] chord scale for relative-IIIm7<sup>b5</sup>.<sup>1</sup>

If the chord scale for Fm7 (in a C context) is [Dorian], then the parent scale for this modal interchange chord cannot but be C Aeolian (or C Natural minor).

**Fm7 is the Aeolian-IVm7 [Dor].**

This way of determining the parent scale is somehow pointless. Indeed, why bother determining a parent scale for a chord when we already know its chord scale?

### “Key Signature”

A “safer” method is to analyze which altered tones are required by the chord, and to find the appropriate “key signature”<sup>2</sup> that includes those tones.

Fm7 comes with the altered A♭ and E♭ – Fm comes with only the altered A♭.

We need a key signature with three flats to have B♭, E♭ and A♭.

Three lowered tones means C Aeolian (or C Natural minor).

**Fm7 is the Aeolian-IVm7 [Dor].**

<sup>1</sup> See [Chord Scales and Parent Scales for Relative-II Chords](#) (page 116).

<sup>2</sup> See [Key](#) (page 14).

The result is the same as above. The *primary* function, the modal interchange chord Aeolian-IVm7 [Dor] *confirms* the *secondary* function of the relative-II [Dor].

Determining the parent scale with the key signature will mostly – but not always! – confirm the [Dor] or [Locr] chord scales for relative-II chords (see “Stricter Rule” above).

### “Residual Tones”

The most interesting (or “adventurous”) way consists in altering *only* those tones that are required by the chord, and to keep all other tones of the scale as residual tones<sup>1</sup>.

Fm7	Chord Scale	1	2	<b>b3</b>	#4	5	6	<b>b7</b>		= [Dor <sup>#4</sup> ]	
		F	G	A <b>♭</b>	B	C	D	E <b>♭</b>			
	Parent Scale			C	D	<b>E♭</b>	F	G	A <b>♭</b>	B	= C Harmonic minor
				1	2	<b>b3</b>	4	5	<b>b6</b>	7	

Now, the result is different. **Fm7 is the Harmonic-IVm7 [Dor<sup>#4</sup>]**. The *primary* function *does not* confirm its possible *secondary* function as a relative-II [Dor] chord.

We might want to stick to the Aeolian-IVm7 [Dor] though, since we’ve seen that the Harmonic-IVm7 [Dor<sup>#4</sup>] is rarely used.

But determining the parent scale with the residual tones is *the best way* for *isolated* chords (see second context above). Consider the Fm (triad) chord:

Fm	Chord Scale	1	2	<b>b3</b>	#4	5	6	7		= [Lyd <sup>b3</sup> ]	
		F	G	A <b>♭</b>	B	C	D	E			
	Parent Scale			C	D	E	F	G	A <b>♭</b>	B	= C Major <sup>b6</sup>
				1	2	3	4	5	<b>b6</b>	7	

This gives yet another result. **Fm is the Major<sup>b6</sup>-IVm<sup>Δ</sup> [Lyd<sup>b3</sup>] SDm chord.**

With these three ways of determining the parent scale(s) we stated that, in a C context

The *relative-II* chord Fm7 is

- the Aeolian-IVm7 [Dor]

And that the *primary* function of the chord *confirms* its *secondary* function.

The *isolated* Fm (triad) is, depending on which 7<sup>th</sup> it includes, Fm7 or Fm<sup>Δ</sup>

- the Aeolian-IVm7 [Dor]
- the Harmonic-IVm7 [Dor<sup>#4</sup>], rarely used, though theoretically possible
- the Major<sup>b6</sup>-IVm<sup>Δ</sup> [Lyd<sup>b3</sup>]

And that this is, either way, a *minor Sub-Dominant* (SDm) chord.

We ruled out the other options:

- the Phrygian-IVm7 [Aeol]
- the Locrian-IVm7 [Phr]

The two last options being *too dark*, i.e. coming with more lowered tones than required by the chord.

<sup>1</sup> See Residual Tones (page 100).

## Primary Functions of Relative-II Chords

Most modal interchanges encountered in songs will be relative-II chords. When we first saw the List of Secondary II-V Cadences (page 115), we ended up with lots of question marks in the *primary* function of the relative-II chords. These were chords that could not yet be explained as being part of the main tonality (C Major in the examples below), though they had a clear *secondary* function as relative-II chord towards their target chord. Remember that the method consists of analyzing the *primary* function of these relative-II chords, since their secondary function ( $\text{IIIm7 of}$ ) is already highlighted with a hook.

These chords with question marks can now be explained as modal interchange chords. The List of Secondary II-V Cadences below is not comprehensive, it includes only secondary cadences and sub-cadences in C Major (not in C minor). (**Modal interchanges are in bold.**)

Major cadences			minor cadences		
Dm7	G7	C $\Delta$	Dm7 $\flat^5$	G7	C $\Delta$
IIm7	V7	I $\Delta$	<b>IIm7<math>\flat^5</math></b>	V7	I $\Delta$
[Dor]	[Mixo]	[Ion]	<b>[Locr]</b>	[Mixo]	[Ion]
C Maj			C Aeol	C Maj	

Dm7 $\flat^5$  includes the Ab tone (three flats: B $\flat$ , E $\flat$ , A $\flat$ ) => this is the Aeolian-IIIm7 $\flat^5$  [Locr].

Since this is the *primary* II, there's obviously no *secondary* function.

It could be analyzed as the *brighter* Major $\flat^6$ -IIIm7 $\flat^5$  [Dor $\flat^5$ ] SDm though.

Em7	A7	Dm7	Em7 $\flat^5$	A7	Dm7
IIm7	V7/II	IIm7	<b>IIm7<math>\flat^5</math></b>	V7/II	IIm7
[Phr]	[Mixo $\flat^{13}$ ]	[Dor]	<b>[Locr]</b>	[Mixo $\flat^{13}$ ]	[Dor]
C Maj	Dm Mel	C Maj	C Mixo	Dm Mel	C Maj

Em7 $\flat^5$  includes the B $\flat$  tone (one flat: B $\flat$ ) => this is the Mixolydian-IIm7 $\flat^5$  [Locr].

Its *primary* function *confirms* its *secondary* function as relative-IIm7 $\flat^5$  [Locr].

F#m7	B7	Em7	F#m7 $\flat^5$	B7	Em7
?	V7/III	IIIIm7	<b>#IVm7<math>\flat^5</math></b>	V7/III	IIIIm7
[Dor]	[Sp.Ph]	[Aeol]*	<b>[Locr]</b>	[Sp.Ph]	[Aeol]*
E Maj	Em Harm	Em Nat*	C Lyd	Em Harm	Em Nat*

F#m7 includes the F# and C# tones (two sharps: F#, C#). There's (obviously, because of C#) no C mode to be found with more than one sharp => still analyzed with a question mark.

This chord has no *primary* function in C. Its only possible function is *secondary*, as relative-IIm7 [Dor] (in E Major).

F#m7 $\flat^5$  includes the F# tone (one sharp: F#) => this is the Lydian-#IVm7 $\flat^5$  [Locr].

Its *primary* function *confirms* its *secondary* function as relative-IIm7 $\flat^5$  [Locr].

\* Because of the residual tone F $\sharp$  of V7/III, the IIIm7 sounds better as an [Aeolian] chord. When IIIm7 is introduced by its own dominant, it sounds as if a modulation occurred towards E minor.<sup>1</sup>



Gm7 includes the B $\flat$  tone (one flat: B $\flat$ ) => this is the Mixolydian-Vm7 [Dor].

Its *primary function confirms* its *secondary function* as relative-IIIm7 [Dor].

Gm7 $b^5$  includes the B $\flat$  and D $\flat$  tones (four flats: B $\flat$ , E $\flat$ , A $\flat$ , D $\flat$ ) => this is the Phrygian-Vm7 $b^5$  [Locr]. Its *primary function confirms* its *secondary function* as relative-IIIm7 $b^5$  [Locr].

We'll see later that there are yet other *brighter* SDm options for this chord.

\* Because of the residual tone B $\flat$  of V7/IV, the IV $\Delta$  sounds better as an [Ionian] chord. When IV $\Delta$  is introduced by its own dominant, it sounds as if a modulation occurred towards F Major.<sup>2</sup>



Am7 $b^5$  includes the E $\flat$  tone (two flats: B $\flat$ , E $\flat$ ) => this is the Dorian-VIm7 $b^5$  [Locr].

Its *primary function confirms* its *secondary function* as relative-IIIm7 $b^5$  [Locr].

We'll see later that there are yet *brighter* SDm options for this chord.



Bm7 includes the F $\sharp$  tone (one sharp: F $\sharp$ ) => this is the Lydian-VIIIm7 [Phr].

Its *primary function DOES NOT confirm* its *secondary function* as relative-IIIm7 [Dor].

A [Dorian] option for that chord is still possible though (and might be preferable<sup>3</sup>), but then *only* in *secondary function* (i.e. IIIm7 in A Major), i.e. without modal interchange.

<sup>1</sup> See Tonal Change on IIIm (page 106).

<sup>2</sup> See Tonal Change on IV $\Delta$  (page 105).

<sup>3</sup> See Avoid the Avoids in this same part (page 230).

C#m7	F#7	Bm7 <sup>b5</sup>	C#m7 <sup>b5</sup>	F#7	Bm7 <sup>b5</sup>
?	V7/VII	VIIIm7 <sup>b5</sup>	?	V7/VII	VIIIm7 <sup>b5</sup>
[Dor]	[Sp.Phr]	[Aeol]	[Locr]	[Sp.Phr]	[Aeol]
B Maj	Bm Harm	C Maj	Bm Nat	Bm Harm	C Maj

C#m7 includes the C# and G# tones (three sharps: F#, C#, G#) and C#m7<sup>b5</sup> includes the C# tone (two sharps: F#, C#). There's (obviously, because of C#) no C mode to be found with more than one sharp => still analyzed with a question mark.  
 These chords have no *primary* function in C. Their only possible function is *secondary* as relative-IIIm7 [Dor] (in B Major) and relative-IIIm7<sup>b5</sup> [Locr] (in Bm Natural).

The following list is the List of Sub-Cadences (page 138) we saw previously (*without* minor cadences).

Abm7	Db7	C <sup>A</sup>	Bbm7	Eb7	Dm7
?	SubV7/I	I <sup>A</sup>	?	SubV7/II	IIIm7
[Dor]	[Lyd <sup>b7</sup> ]	[Ion]	[Dor]	[Lyd <sup>b7</sup> ]	[Dor]
(Gb Maj)	NPS	C Maj	Cm Phr	NPS	C Maj

Abm7 includes the Ab, Cb, Eb and Gb tones (six flats: Bb, Eb, Ab, Db, Gb, Cb). There's (obviously, because of Cb) no C mode to be found with more than five flats => still analyzed with a question mark. This chord has no function in C. Its only possible function is *secondary* as relative-SubIIIm7/I [Dor] (or IIIm7 in Gb Major).

Bbm7 includes the Bb, Db and Ab tones (four flats: Bb, Eb, Ab, Db) => this is the Phrygian-  
 bVIIIm7 [Dor]. Its *primary* function *confirms* its *secondary* function as relative-SubIIIm7  
 [Dor].

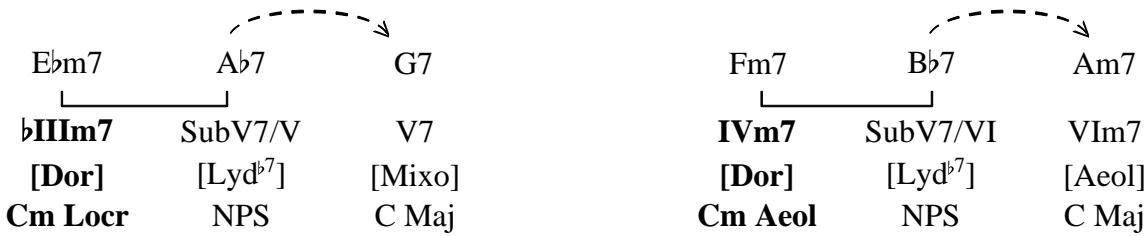
Cm7	F7	Em7	Dbm7	Gb7	F <sup>A</sup>
?	SubV7/III	IIIIm7	?	SubV7/IV	IV <sup>A</sup>
[Dor]	[Lyd <sup>b7</sup> ]	[Phr]*	[Dor]	[Lyd <sup>b7</sup> ]	[Ion]**
Cm Dor	NPS	C Maj	(Cb Maj)	NPS	F Maj

Cm7 includes the Eb and Bb tones (two flats: Bb, Eb) => this is the Dorian-Im7 [Dor].  
 Its *primary* function *confirms* its *secondary* function as relative-SubIIIm7 [Dor].

Dbm7 includes the Db, Ab and Cb tones (six flats: Bb, Eb, Ab, Db, Gb, Cb). There's (obviously, because of Cb) no C mode to be found with more than five flats => still analyzed with a question mark. This chord has no *primary* function in C. Its only possible function is *secondary* as relative-subIIIm7/IV [Dor] (or IIIm7 in Cb Major).

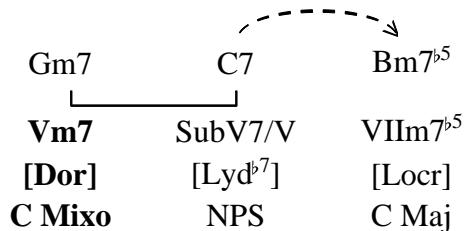
\* The SubV7/III doesn't include the F# tone (see V7/III above), the IIIIm7 consequently sounds as a regular IIIm7 [Phr], i.e. *without* modulation towards E minor.

\*\* Because of the residual tone Bb of SubV7/IV, the IV<sup>A</sup> sounds better as an [Ionian] chord, or as if a modulation occurred towards F Major.



E♭m7 includes the E♭, G♭, B♭ and D♭ tones (five flats: B♭, E♭, A♭, D♭, G♭) => this is the Locrian-bIIIm7 [Dor]. Its *primary* function *confirms* its *secondary* function as relative-SubIIIm7 [Dor].

Fm7 includes the A♭ and E♭ tones (three flats: B♭, E♭, A♭) => this is the Aeolian-IVm7 [Dor]. Its *primary* function *confirms* its *secondary* function as relative-SubIIIm7 [Dor].



Gm7 includes the B♭ tone (one flat: B♭) => this is the Mixolydian-Vm7 [Dor]. Its *primary* function *confirms* its *secondary* function as relative-SubIIIm7 [Dor].

### Conclusion

The primary function, if any, mostly confirms the secondary function [Dor] or [Locr] of the relative-II chords. Pay attention though with the ...

- IIIm7 [Phr] (instead of [Dor])
- VIm7 [Aeol] (instead of [Dor])
- VIIIm7 [Phr] (instead of [Dor])

The “stricter” rule for relative-IIIm7 with a [Dor] chord scale applies in *most* cases, but not in *all* cases. The “stricter” rule for relative-IIIm7<sup>⁵</sup> with a [Locr] chord scale applies in *all* cases.

But we’re about to learn about new SDm options for these relative-II chords.  
See minor Sub-Dominants (SDm) (page 232).

## Modal Interchange in Parallel Harmony

Remember the “parallel” approach chords we saw previously<sup>1</sup>. Some of these chords can be analyzed as modal interchange chords (**in bold**).

### **m7 [Dor] to m7 [Dor]**

Coming from IIIm7:

C <sup>Δ</sup>	Em7	E♭m7	Dm7	G7
I <sup>Δ</sup>	IIIm7	<b>♭IIIm7</b>	IIm7	V7
[Ion] CMaj	[Phr]	[Dor]	[Dor]	[Mixo]
	<b>Cm Locr</b>		CMaj	

E♭m7 includes the E♭, G♭, B♭ and D♭ tones (five flats: B♭, E♭, A♭, D♭, G♭) => C Locrian.

The E♭m7, as passage from IIIm7 to IIm7, can be analyzed as the Locrian-♭IIIm7 [Dor].

Coming from VIm7:

C <sup>Δ</sup>	Am7	A♭m7	Gm7	C7
I <sup>Δ</sup>	VIm7	?	Vm7	V7/VI
[Ion] CMaj	[Aeol]	[Dor]	[Dor]	[Mixo]
	<u>NPS</u>		C Mixo	F Maj

A♭m7 includes the A♭, C♭, E♭ and G♭ tones (six flats: B♭, E♭, A♭, D♭, G♭, C♭). There's (obviously, because of C♭) no C mode to be found with more than five flats => still analyzed with a question mark. The A♭m7 chord, as passage from VIm7 to Vm7 (yet another modal interchange chord), has *no function* in the C tonality, it's just a parallel m7 [Dor] approach chord.

Coming from IIm7:

... Em7	Dm7	D♭m7	Cm7	F7
... IIIm7	IIm7	?	Im7	SubV7/III
... [Phr]	[Dor]	[Dor]	[Dor]	[Lyd <sup>b7</sup> ]
... CMaj	<u>NPS</u>		Cm Dor	NPS

D♭m7 includes the D♭, A♭ and C♭ tones (six flats: B♭, E♭, A♭, D♭, G♭, C♭). There's (obviously, because of C♭) no C mode to be found with more than five flats => still analyzed with a question mark. The D♭m7 chord, as passage from IIm7 to Im7 (yet another modal interchange chord) has *no function* in the C tonality, it's just a parallel m7 [Dor] approach chord.

<sup>1</sup> See Parallel Harmony (page 156).

**$\Delta [Lyd]$  to  $\Delta [Lyd]$** 

Dm7	<b>D<math>\flat</math><sup>Δ</sup></b>	C <sup>Δ</sup>
II $m$ 7	<b>bII<sup>Δ</sup></b>	I <sup>Δ</sup>
[Dor]	<b>[Lyd]</b>	[Ion]
CMaj	<b>Cm Phr</b>	CMaj

D $\flat$ <sup>Δ</sup> includes the D $\flat$  and A $\flat$  tones (four flats: B $\flat$ , E $\flat$ , A $\flat$ , D $\flat$ ) => C Phrygian.

The D $\flat$ <sup>Δ</sup>, as approach to I<sup>Δ</sup>, can be analyzed as the Phrygian-bII<sup>Δ</sup> [Lyd].

## ANALYSIS OF A SONG WITH MODAL INTERCHANGES

Let's review the previous songs we've analyzed so far that still had some question marks.

'All Of Me' (Simons & Marks)<sup>1</sup> – here, only the last 8 bars – can now be analyzed as follows.

The musical score consists of two staves of music in G major, 4/4 time. The first staff shows chords F, Fm, C<sup>Δ</sup>, Em7, and A7. The second staff shows chords Dm7, G7, C<sup>6</sup>, Eb<sup>o</sup>, Dm7, and G7. Below each chord is its analysis: IV6 [Lyd] C Major, IVm [Lyd $\flat$ 3] C Major $\flat$ 6, I $m$ 7 [Ion] C Major, IIIm7 [Phr] NPS, V7/(II) [Mixo b13] Dm Melodic; Dm7 [Dor] C Major, V7/I [Mixo] C Major, I6 [Ion] NPS, bIII<sup>o</sup> [Dim 1 -1/2] NPS, II $m$ 7 [Dor] C Major, and V7/I [Mixo] C Major.

Second bar: The Fm is analyzed as a Major $\flat$ <sup>6</sup>-IVm [Lyd $\flat$ <sup>3</sup>] ( $m^{\Delta}$ ) SDm (minor Sub-Dominant) chord, suggested by the absence of a 7<sup>th</sup> in the chord.

But, since the 7<sup>th</sup> is left to the choice of the performer, one could also opt for the darker Aeolian-IVm7 [Dor].

<sup>1</sup> See Analysis of a Song with Secondary Dominants (page 111).

‘I Should Care’ (Cahn/Stordahl/Weston)<sup>1</sup> (B-part only) can now be analyzed as follows.

The image shows four staves of musical notation for the B-part of 'I Should Care'. Each staff includes a harmonic analysis below it, identifying chords and their modal implications. The first staff starts with F#m7b5, followed by B7b9, Em7, A7, Dm7, G7, and CΔ. The second staff starts with Em7b5, followed by A7sus4, A7, Dm7, Fm7, and Bb7. The third staff starts with Am7, followed by Bm7b5, E7b9, Am, Am/G, D7/F#, and Fm6. The fourth staff starts with C/E, followed by Eb°, Dm7, G7, C6, F7, Em7, and A7. The analysis below each staff provides specific modal contexts for each chord.

**Staff 1:**

- F#m7b5: #IVm7b5 [Locr] (C Lyd)
- B7b9: V7/III [Sp.Phr] (E Harm)
- Em7: IIIIm7 [Dor] (D Maj)
- A7: V7/II [Mixo]
- Dm7: IIIm7 [Dor] (C Maj)
- G7: V7 [Mixo]
- CΔ: IΔ [Ion]

**Staff 2:**

- Em7b5: IIIIm7b5 [Locr] (C Mixo)
- A7sus4: V7sus4/II [Sp.Phr] (D Harm)
- V7/II: V7/II (C Maj)
- IIm7: IIm7 [Dor] (C Maj)
- Fm7: IVm7 [Dor] (C Aeol)
- Bb7: bVII7 [Mixo]

**Staff 3:**

- Am7: VIIm7 [Aeol] (C Maj)
- Bm7b5: VIIIm7b5 [Locr] (C Maj)
- E7b9: V7/VI [Sp.Phr] (A Harm)
- Am: VIm [Mel] (A Mel)
- Am/G: VIIm7 [Dor] (G Maj)
- D7/F#: V7/V [Mixo] (G Maj)
- Fm6: IVm6 [Lyd<sup>b3</sup>] (C Maj b6)

**Staff 4:**

- C/E: I [Ion] (C Maj)
- Eb°: bIII [Dim.1-1/2] (NPS)
- Dm7: IIIm7 [Dor] (C Maj)
- G7: V7 [Mixo]
- C6: I6 [Ion] (NPS)
- F7: SubV7/III [Lyd b7] (NPS)
- Em7: IIIIm7 [Dor] (D Maj)
- A7: V7/II [Mixo]

Bar 1: F#m7b5 is a Lydian-#IVm7b5 [Locr] chord (*and* relative-IIIm7b5[Locr]).

Bar 5: Em7b5 is a Mixolydian-IIIIm7b5 [Locr] chord (*and* relative-IIIm7b5[Locr]).

Bar 8: Fm7 is an Aeolian-IVm7 [Dor] chord (*and* relative-IIIm7 [Dor]).

Bb7 is an Aeolian- $\flat$ VII7 [Mixo] chord. This chord will have yet another option later.<sup>2</sup>

Bar 12: Fm6 is a Major $\flat$ 6-IVm7 [Lyd<sup>b3</sup>] chord, suggested by the absence of a 7<sup>th</sup>.

But, since the 7<sup>th</sup> is left to the choice of the performer, the darker Aeolian-IVm7 [Dor] is an option too.

Bar 15: F7 is still analyzed as SubV7/III [Lyd<sup>b7</sup>].

It could be analyzed as a Dorian-IV7 [Mixo] (or as a Blues-IV7 [Mixo]<sup>3</sup>) or as a Melodic-IV7 [Lyd<sup>b7</sup>] with the same chord scale as the very first option.

<sup>1</sup> See Analysis of a Song with Secondary II-V Cadences (page 121).

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<sup>2</sup> See minor Sub-Dominants (SDm) (page 232).

<sup>3</sup> See next section on A Modal Approach to the Blues (page 222).

‘Rock Example’<sup>1</sup> with auxiliary IV-chords can be analyzed as follows.

C pedal (= keep C in the bass all the time)

Every auxiliary IV-chord is analyzed as a modal interchange chord, gradually brightening up the modal color of the tonality:

- Db is a Phrygian- $\flat$ II $^\Delta$  [Lyd] chord
- Ab is a Aeolian- $\flat$ VII $^\Delta$  [Lyd] chord
- Eb is a Dorian- $\flat$ III $^\Delta$  [Lyd] chord
- Bb is a Mixolydian- $\flat$ VII $^\Delta$  [Lyd] chord
- F is the Major-IV $^\Delta$  [Lyd] chord

‘Hey Joe’ (Billy Roberts)<sup>2</sup> (in E Major) with a similar (Blues) idea, i.e. with retrogressive (going *up* the circle of fifths) chord changes.

- C7 is a Locrian- $\flat$ VI7 [Mixo] chord
- G7 is a Prygian- $\flat$ III7 [Mixo] chord
- D7 is an Aeolian- $\flat$ VII7 [Mixo] chord
- A7 is a Dorian-IV7 [Mixo] chord
- E7 is the Mixolydian- (or Blues-) I7 [Mixo] chord

<sup>1</sup> See [The Auxiliary IV-Chord](#) (page 158).

<sup>2</sup> See [The Auxiliary IV-Chord](#) (page 158).

**Lament**

J.J. Johnson

Fm                       $E\flat m7$        $A\flat 7$        $D\flat A$        $Gm7$        $C7$   
 Im       $\flat VII m7$       V7/VI       $\flat VI^{\Delta}$       IIIm7      V7  
 [Mel]    [Dor]      [Mixo]    [Lyd]      [Dor]      [Mixo]  
 F Mel    \_\_\_\_\_ F Phr    D $\flat$  Maj    F Aeol    F Maj    \_\_\_\_\_

F                       $Am7\flat 5$       D7      Gm7       $Em7\flat 5$       A7       $\bigcirc$   
 I      IIIIm7 $\flat 5$       V7/II      IIIm7      VIIIm7 $\flat 5$       V7/VI  
 [Ion]    [Locr]    [Sp.Phr]    [Dor]    [Locr]    [Sp.Phr]  
 F Maj    F Mixo    G Harm    F Maj    D Harm    \_\_\_\_\_

Dm      C7      B $\flat$ m $6$       Am7      Dm7      Gm7       $Em7\flat 5$       A7  
 VIIm    V7      IVm6      IIIm7      VIIm7      IIIm7      VIIIm7 $\flat 5$       V7/VI  
 [Mel]    [Mixo]    [Lyd.m]    [Phr]    [Aeol]    [Dor]    [Locr]    [Sp.Phr]  
 D Mel    F Maj    F Maj $\flat 6$     F Maj    \_\_\_\_\_ F Maj    D Harm    \_\_\_\_\_

Dm       $E\flat m7$       A $\flat 7$        $D\flat A$        $Gm7\flat 5$        $C7\sharp 9$       D.C. al  $\bigcirc$   
 VIIm     $\flat VII m7$       V7/ $\flat VI$        $\flat VI^{\Delta}$       IIIm7 $\flat 5$       V7 $\flat 9$   
 [Mel]    [Dor]      [Mixo]    [Lyd]      [Locr]    [Sp.Phr]  
 D Mel    F Phr    D $\flat$  Maj    F Aeol    F Harm    \_\_\_\_\_

$\bigcirc$       Dm      C7 B $\flat$ m $6$       Am7      Dm7      Bm7 $\flat 5$       B $\flat$ m7      E $\flat$ 7  
 VIIm    V7      IVm6      IIIm7      VIIm7      #IVm7 $\flat 5$       IVm7       $\flat VII 7$   
 [Mel]    [Mixo]    [Lyd.m]    [Phr]    [Aeol]    [Locr]    [Dor]    [Mixo]  
 D Mel    F Maj    F Maj $\flat 6$     F Maj    \_\_\_\_\_ F Lyd    F Aeol    \_\_\_\_\_

F      Dm7      D $\flat$ 7      C7      F      (Gm7 $\flat 5$       C7 $\flat 9$ )  
 I      VIIm7      SubV7/V      V7      I      (IIIm7 $\flat 5$       V7 $\flat 9$ )  
 [Ion]    [Aeol]    [Lyd $\flat$ 7]    [Mixo]    [Ion]    [Locr]    [Sp.Phr]  
 F Maj    NPS    F Maj    F Maj    F Aeol    F Harm    \_\_\_\_\_

© ???

### ***Notes on the analysis***

‘Lament’ (J.J. Johnson), written in F Major, is a good example of a song with modal interchange chords. The possible chord scale (and parent scale) options are now multiple in most cases. The choices I’ve made are for illustration only.

To keep a better track of the dominant generating parent scales, the chord scale choices are all “Basic” options (from bright to dark: Major-V7 [Mixo], Major<sup>b6</sup>-V7 [Mixo<sup>b9</sup>], Melodic-V7 [Mixo<sup>b13</sup>] and Harmonic-V7 [Sp.Phr]) instead of their brighter “*Lydian*” variants ([Lyd<sup>b7</sup>], [Dim ½-1], [Wh.T] and [Alt] respectively) without parent scale (NPS). “*Lydian*” variants, in this song, sound great though! I haven’t commented *every* dominant chord of the song below, but wherever there’s a comment, I’ve let the melody direct my choices. Remember that you can make other choices when the melody is left out for improvisation purposes.

Bar 1: Fm is the Melodic-Im [Mel]. The only altered tone required by the chord, in regard to the F Major key, is the A♭ tone (b3), hence the Melodic chord scale (and parent scale). Other, darker, options could have been made as well.

Bar 2-3 (and 14-15): E♭m7, the primary function as Phrygian-♭VIIIm7 [Dor] confirms its secondary function as relative-IIIm7 chord.

A♭7, Major-V7/♭VI [Mixo] (in D♭ Major) because this chord targets a (D♭) Major chord, and because the D♭ tone in the melody (= Av11 of A♭7) rules out a “*Lydian*” dominant chord scale. With the F tone in the melody as well (= T13 of A♭7), the only possible alternative is the Major<sup>b6</sup>-V7 [Mixo<sup>b9</sup>].

D♭<sup>A</sup>, I’ve opted for the brighter [Lyd] chord scale instead of the [Ion] option (expected for a Δ-chord introduced by its dominant).

Bar 6: Am7<sup>b5</sup>, the primary function as Mixolydian-IIIIm7<sup>b5</sup> [Locr] confirms its secondary function as relative-IIIm7<sup>b5</sup> chord.

D7, Harmonic-V7/II [Sp.Phr], instead of the expected Melodic-V7/II [Mixo<sup>b13</sup>], because of the residual tone E♭ in the former chord (= T♭9 of D7). With the B♭ tone in the melody as well (= T♭13 of D7), the only possible alternative is [Alt].

Bar 9 (and 17): Dm, I’ve opted for the brighter VIm [Mel] chord (as in bar 13 also), tonal change in Dm. Darker options are possible too.

C7, Major-V7 [Mixo], with T13 as required by the melody, and B♭m6, Major<sup>b6</sup>-IVm6 [Lyd<sup>b3</sup>] (SDm). The tempo of the changes would make other (“*Lydian*” dominant, or darker subdominant) options, with more altered tones, more difficult to play.

Bar 19: Bm7<sup>b5</sup>, Lydian-♯IVm7<sup>b5</sup> [Locr], is not (for once) a relative-IIIm7<sup>b5</sup> chord, but an approach chord towards B♭m7 in the next bar.

Bar 20: B♭m7, Aeolian-IVm7 [Dor], and E♭7, Aeolian-♭VII7 [Mixo]. A minor Subdominant option, SDm ♫VII7 [Lyd<sup>b7</sup>] for the latter will become an option very soon.

Bar 22: D♭7, SubV7/V [Lyd<sup>b7</sup>] is a more functional, and brighter, option than the evenly possible, modal and darker, Locrian-♭VI7 [Mixo] option.

C7, Major-V7 [Mixo], the melody requires a chord scale with T13.

### ***Conclusion of this Chapter***

The numerous possible modal interchanges, as *primary* function for relative-II<sup>m7</sup> and relative-II<sup>m7<sup>b5</sup></sup> chords in secondary II-V cadences, seem *mostly* to confirm their *secondary* function in the key of the target chord (the *tonal* changes, or transient modulations), though *NOT always*. So, it's really your choice, according to your own insights, to see these relative-II chords as *tonal* changes (as seen before), or merely as *modal* changes. But, to see them as *merely* modal changes supports the theory proposed by Arnold Schönberg (1874-1951) that it's not *that* easy to escape to the attraction of the “very first” *main* central tone, and that lots of composers, who think they're modulating to another key, actually keep “orbiting around” that main central tone.

Moreover, there are modal interchange chords that are NOT relative-II chords, but *coloring* (= *modal*) and/or approach chords. It's important to be able to find, and explain, these chords too.

We've now seen *all* the possible chords, generated by *all* the parent scales known so far (with the addition of the Major<sup>b6</sup> parent scale). But there are still more possible modal changes, called minor Sub-Dominants (SDm) and Chromatically Altered Sub-Dominants (chrSD), that are generated by yet other parent scales. We'll study these possibilities later in this part too.

But first, let's go back to the Blues.



## A Modal Approach to the Blues

We've learned that the Blues is an atypical harmonic system, with its Tonic I7, Subdominant IV7 and Dominant V7 main chords that originated by the addition of the blue notes. All three chords can actually be seen as modal interchange chords in a multimodal Blues system.

### MAJOR BLUES

Let me first remind you the (simplest) 12-bar Blues format as seen before:

C7	C7	C7	C7
I7	I7	I7	I7
[Blues]	[Blues]	[Blues]	[Blues]
(C Blues)			

F7	F7	C7	C7
IV7	IV7	I7	I7
[Blues]	[Blues]	[Blues]	[Blues]
(C Blues)			

G7	F7	C7	C7
V7	IV7	I7	I7
[Blues]	[Blues]	[Blues]	[Blues]
(C Blues)			

The analysis, *with modal interchange chords*, could now become:

C7	C7	C7	C7
I7	I7	I7	I7
[Mixo]	[Mixo]	[Mixo]	[Mixo]
C Mixolydian			

F7	F7	C7	C7
IV7	IV7	I7	I7
[Mixo]	[Mixo]	[Mixo]	[Mixo]
C Dorian			

G7	F7	C7	C7
V7	IV7	I7	I7
[Mixo]	[Mixo]	[Mixo]	[Mixo]
C Ionian			

C Dorian \_\_\_\_\_ C Mixolydian \_\_\_\_\_

Indeed, with the typical blue notes  $\flat 3$  and  $\flat 7$  included in the I7 and IV7 chords ...

- I7, including  $\flat 7$  ( $\flat 7$  of the chord), is generated by the Mixolydian parent scale, with a [Mixo] chord scale.
- IV7, including  $\flat 3$  ( $\flat 7$  of the chord), is generated by the Dorian parent scale, with a [Mixo] chord scale.
- V7, without blue notes, is generated by the Ionian<sup>1</sup> parent scale, with a [Mixo] chord scale.

If we add the missing blue notes to all these *parent scales* –  $\sharp 4$  always,  $\flat 7$  or  $\flat 3$  wherever they’re missing – one becomes the C Extended Blues scale.<sup>2</sup>

The Major Blues is a multimodal system, *hanging in between* Major and minor, based (or *centered*) on the Mixolydian mode<sup>3</sup>. The Dorian mode is needed for the IV7, and the Ionian mode is needed for the V7.<sup>4</sup> (**Blues chords are in bold**)

From Bright to Dark	Ionian	1	2	3	4	5	6	7
		I $^\Delta$ [Ion]	IIIm7 [Dor]	IIIIm7 [Phr]	IV $^\Delta$ [Lyd]	V7 [Mixo]	VIIm7 [Aeol]	VIIIm7 $^{\flat 5}$ [Locr]
		T	SD	T	SD	Blues D	T	D
	Mixo-lydian	1	2	3	4	5	6	$\flat 7$
		I7 [Mixo]	IIIm7 [Aeol]	IIIIm7 $^{\flat 5}$ [Locr]	IV $^\Delta$ [Ion]	Vm7 [Dor]	VIIm7 [Phr]	$\flat VII^\Delta$ [Lyd]
		Blues T	SD	T	SD	SD(D)	T	SD
	Dorian	1	2	$\flat 3$	4	5	6	$\flat 7$
		Im7 [Dor]	IIIm7 [Phr]	$\flat III^\Delta$ [Lyd]	IV7 [Mixo]	Vm7 [Aeol]	VIIm7 $^{\flat 5}$ [Locr]	$\flat VII^\Delta$ [Ion]
		T	SD	T	Blues SD	SD(D)	T	SD

The Blues chords I7 and IV7 are sometimes used as modal interchange chords in songs that aren’t Blues songs, just to add a bluesy color to the song. Which means that you can “reverse<sup>5</sup>” the scale option for those chords to “just playing the Blues” over them, i.e. playing the (C) *Blues scale* instead of playing the original parent scale (or their [Mixo] chord scale).

Other Mixolydian and Dorian chords that include the blue notes  $\flat 7$  and/or  $\flat 3$  – chords in grey do not include a blue note – are, likewise, sometimes used as modal interchanges too, just to add a bluesy color to the song. They’re therefore sometimes referred to as *Blues T* (Tonic) chords and *Blues SD* (Subdominant) chords. And, for that same reason, the Mixolydian and Dorian modes are often called “*Blues modes*” (see also the minor Blues, below).

<sup>1</sup> Or, possibly, generated by the Melodic parent scale, still including  $\flat 3$ , or  $\flat 13$  of the chord, with a [Mixo $^{\flat 13}$ ] chord scale. See next section on minor Blues (page 224).

<sup>2</sup> +B (7) in the Ionian scale. (See Blues “Chord Scales” on page 96.)

<sup>3</sup> Blues harp players that play a C Major Blues use a diatonic harp in F (Major), or C Mixolydian.

<sup>4</sup> This *Modal Approach to the Blues* was made famous with the Miles Davis album with the appropriate title ‘Kind of Blue’, released in 1959.

<sup>5</sup> Expressing the historical chronology of the styles: going from Blues to Jazz, and “reverse” back to Blues.

## MINOR BLUES

Now that we've also seen the minor Functional Harmony, this *minor Blues*<sup>1</sup> is a new typical Blues format, with only *real Blues chord scales* – *not Major Blues scales* – except on V7:

Cm7	Cm7	Cm7	Cm7
Im7	Im7	Im7	Im7
[Blues]	[Blues]	[Blues]	[Blues]
(C Blues)			

Fm7	Fm7	Cm7	Cm7
IVm7	IVm7	Im7	Im7
[Blues]	[Blues]	[Blues]	[Blues]
(C Blues)			

A♭7	G7	Cm7	Cm7
SubV7/V	V7	Im7	Im7
[Lyd♭⁷]	[Blues]	[Blues]	[Blues]
(C Blues)			

Both the Tonic Im7 and the Subdominant IVm7 are minor chords, only the Dominant remains a functional V7-chord<sup>2</sup> (as it should in minor *Functional Harmony*).

There's also a typical minor Blues feature with the SubV7/V (A♭7) introducing the Dominant V7. Its chord scale is the [Lyd♭⁷] chord scale, though most die-hard Blues musicians keep playing the (C) Blues scale over this chord.

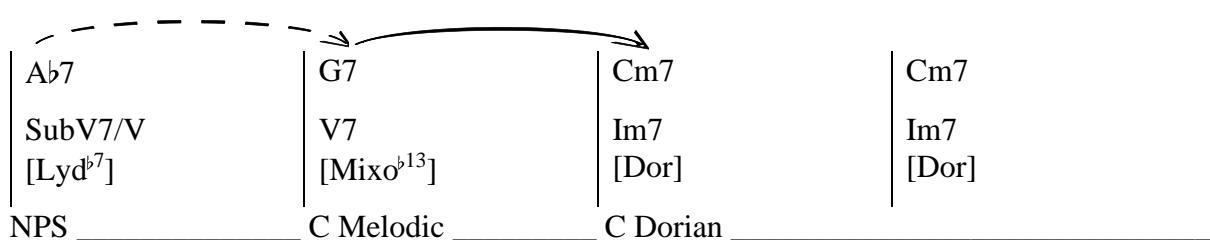
The analysis, *with modal interchange chords*, could now become:

Cm7	Cm7	Cm7	Cm7
Im7	Im7	Im7	Im7
[Dor]	[Dor]	[Dor]	[Dor]
C Dorian			

Fm7	Fm7	Cm7	Cm7
IVm7	IVm7	Im7	Im7
[Dor]	[Dor]	[Dor]	[Dor]
C Aeolian			
C Dorian			

<sup>1</sup> Based on 'The Thrill Is Gone' (Rick Darnell, Roy Hawkins), a Blues standard by B.B. King.

<sup>2</sup> There are minor Blues songs with a Dorian-Vm7 [Aeol] chord too though.



Indeed, with the typical blue notes  $\flat 3$  and  $\flat 7$  (and  $\flat 6$  in IVm7) included in the chords ...

- Im7, including  $\flat 3$  and  $\flat 7$  ( $\flat 3$  and  $\flat 7$  of the chord), is generated by the Dorian parent scale, with a [Dor] chord scale.
- IVm7, including  $\flat 3$  ( $\flat 7$  of the chord) and  $\flat 6$  ( $\flat 3$  of the chord), is generated by the Aeolian parent scale, with a [Dor] chord scale.
- V7<sup>b13</sup>, including  $\flat 3$  (T<sup>b13</sup> of the chord), is generated by the Melodic parent scale, with a [Mixo<sup>b13</sup>] chord scale.

The minor Blues is a minor multimodal system based (*centered*) on the Dorian (minor Blues) mode.<sup>1</sup> The Aeolian mode is needed for the IVm7, and the Melodic mode is needed for the V7 (as in minor functional harmony). (**Blues chords are in bold**)

From Bright to Dark	Melodic	1	2	$\flat 3$	4	5	6	7
		Im <sup>Δ</sup> [Mel]	IIm7 [Dor <sup>b9</sup> ]	$\flat$ III <sup>Δ<sup>b5</sup></sup> [Lyd <sup>#5</sup> ]	IV7 [Lyd <sup>b7</sup> ]	<b>V7</b> [Mixo <sup>b13</sup> ]	VIm7 <sup>b5</sup> [Locr <sup>9</sup> ]	VIIIm7 <sup>b5</sup> [S.Locr]
		T	SD	T	SD	<b>Blues D</b>	T	D
	Dorian	1	2	$\flat 3$	4	5	6	$\flat 7$
		<b>Im7</b> [Dor]	IIm7 [Phr]	$\flat$ III <sup>Δ</sup> [Lyd]	IV7 [Mixo]	Vm7 [Aeol]	VIm7 <sup>b5</sup> [Locr]	$\flat$ VII <sup>Δ</sup> [Ion]
		<b>Blues T</b>	SD	T	SD	SD(D)	T	SD
	Aeolian	1	2	$\flat 3$	4	5	$\flat 6$	$\flat 7$
		Im7 [Aeol]	IIm7 <sup>b5</sup> [Locr]	$\flat$ III <sup>Δ</sup> [Ion]	<b>IVm7</b> [Dor]	Vm7 [Phr]	$\flat$ VI <sup>Δ</sup> [Lyd]	$\flat$ VII7 [Mixo]
		T	SD	T	<b>Blues SD</b>	SD(D)	T	SD

The Melodic-V7 [Mixo<sup>b13</sup>] is quite often used in Major Blues too, because it still includes the  $\flat 3$  blue note which the Ionian-V7 [Mixo] does not include.

The Melodic-IV7 [Lyd<sup>b7</sup>] is also sometimes, though less often, used in Major Blues.

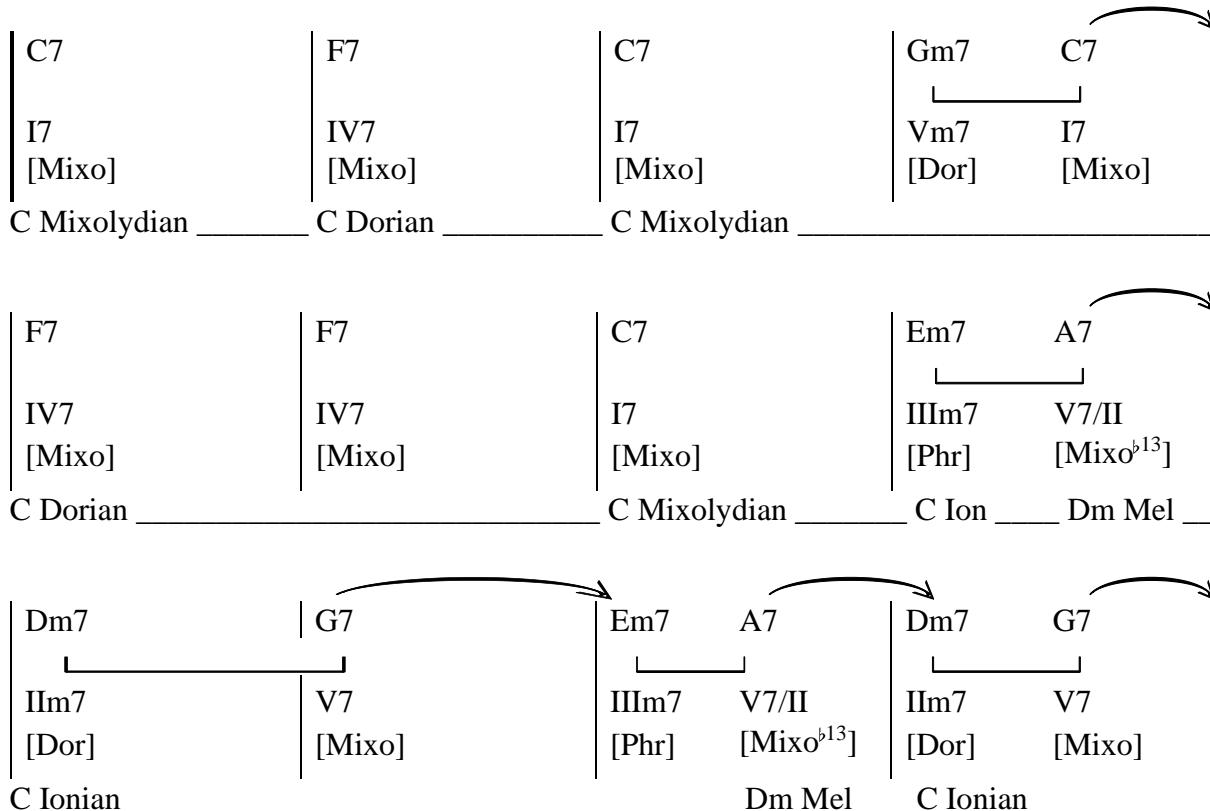
Other Melodic and Aeolian (and Dorian too, see previous section) chords that include the blue notes  $\flat 7$  and/or  $\flat 3$  – chords in grey do not include a blue note – are sometimes used as modal interchanges (in *Major* songs), as *Blues T* and *Blues SD* chords, just to add a bluesy color to the song.

<sup>1</sup> Blues harp players that play a C minor Blues use a diatonic harp in B<sup>flat</sup> (Major), or C Dorian.

## MODAL ANALYSIS OF BLUES

Let's review a few Blues progressions seen before.<sup>1</sup>

### Blues with Secondary II-V Cadences



All the chords (except A7, in bars 8 and 11) are analyzed as modal interchange chords.

Bar 4: the modal analysis of both the Mixolydian-Vm7 [Dor] and the Mixolydian-I7 [Mixo] confirm their *secondary* function as IIIm7/IV and V7/IV.

Bar 8 and 11: Em7 is analyzed as the *primary* Ionian- (or Major-) IIIIm7, as seen in the part on tonal changes<sup>2</sup>, and as such, it doesn't confirm its *secondary* function as IIIm7/II.

A [Dor] option (in D Major) is possible for this chord though, providing a “no avoids” chord scale.<sup>3</sup>

A7 is analyzed as V7/II [Mixo<sup>b13</sup>], as seen in the part on tonal changes.

The [Whole tone] scale provides a no avoid option. If the chord scale option for the previous chord is [Dor], then the [Mixo] and, even better, the “no avoids” [Lyd<sup>b7</sup>] scales are options too. Though, *any* dominant chord scale is always possible.

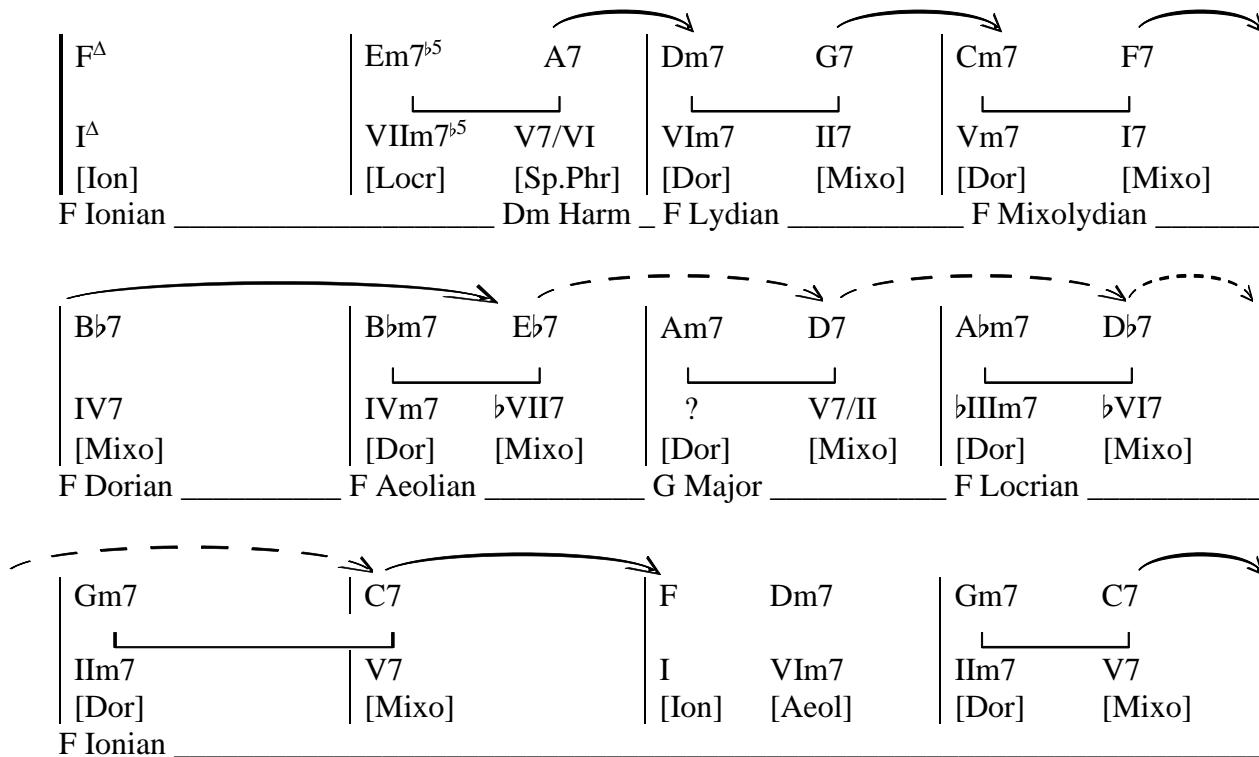
<sup>1</sup> See More About the Blues (page 161).

<sup>2</sup> “The primary function prevails.”

<sup>3</sup> See chapter Avoid the Avoids (page 230) in this same part.

## Swedish Blues

### 'Blues For Alice' (Charlie Parker)<sup>1</sup>



All chords are analyzed as modal interchange chords, but three:

- bar 2: A7 = V7/VI (secondary dominant)
- bar 7: Am7 = ? (no primary function => secondary relative-II)
- D7 = V7/II (secondary dominant)

Bars 1 to 4: The modal analysis of all chords (but A7 in bar 2) confirm their secondary function as tonal changes in their respective target tonality.

Bars 6 to 9: I propose four consecutive [Dor] – [Mixo] chord scales to enhance the parallelism of the harmony.

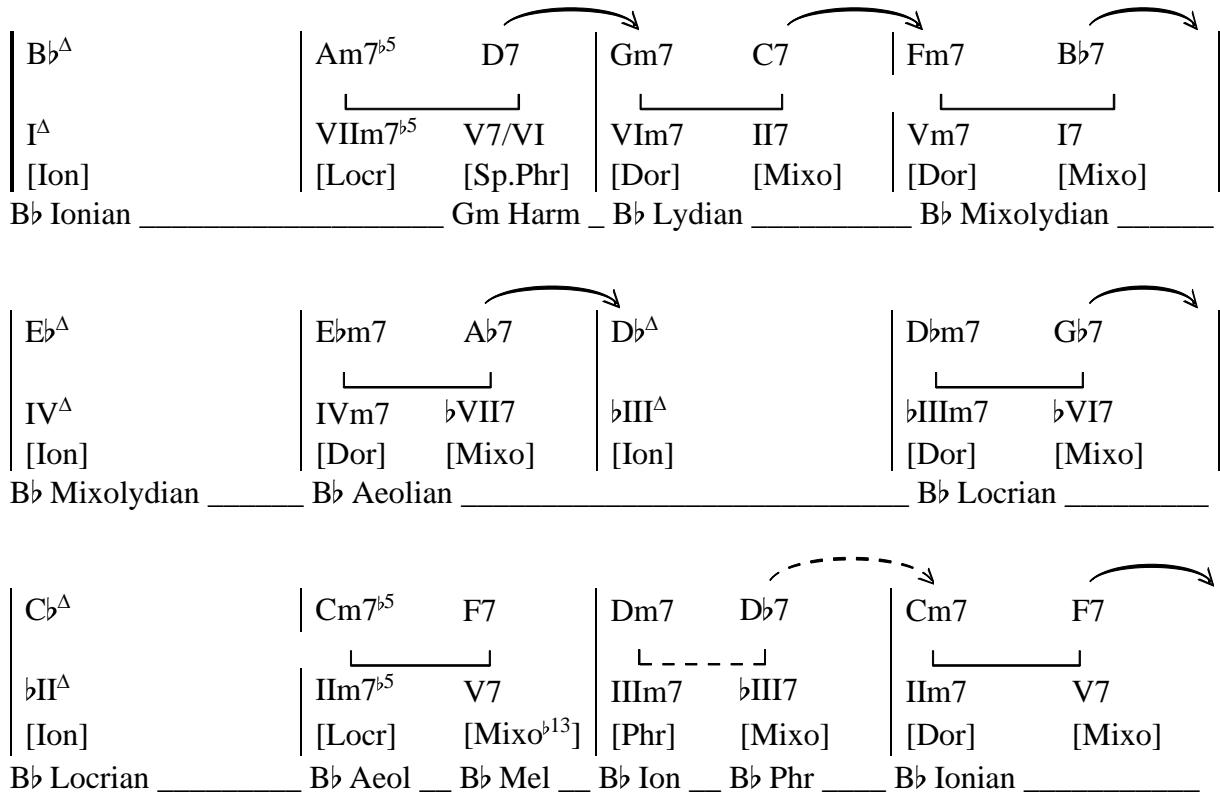
The modal analysis of the relative-IIIm7 chords confirm their secondary function. Except, Am7 [Dor] is *not* a modal change but a tonal change in G Major (an Ionian-IIIIm7 [Phr] or a Lydian-IIIIm7 [Aeol] would not have been parallel).

The modal analysis of E♭7 and D♭7 *does not* confirm their secondary SubV7 function. The [Mixo] chord scale option sounds more bluesy. Though, a [Lyd<sup>b7</sup>] chord scale for *all* dominant chords is an option too.

<sup>1</sup> © 1956 Atlantic Music Corp. (renewed 1984)

**'Bluesette' (Toots Thielemans)<sup>1</sup>**

(in a 12-bar 6/8 meter instead of the usual 24-bar 3/4 meter)



All chords (except D7, in bar 2) are analyzed as modal interchange chords.

The modal analysis confirms the secondary function of all these chords (except the secondary function of D♭7 as SubV7/II in bar 11).

Bar 4 and 5: B♭ Mixolydian chords *or* modulation (tonal change) towards E♭ Major.

Bar 6 and 7: B♭ Aeolian chords *or* modulation (tonal change) towards D♭ Major.

Bar 8 and 9: B♭ Locrian chords *or* modulation (tonal change) towards C♭ Major.

Bar 10: Gradual *brightening up* from the dark B♭ Aeolian, to the brighter B♭ Melodic, to the yet brighter B♭ Ionian (or Major) in bar 11.



## Avoid the Avoids

Now that we've seen that many chords come with multiple chord scale options, it can be useful to have *some* clues on how to determine "your best" choice.

First and foremost, the choice should be personal, according to your ear and liking. Of course, that also means that you'll need to be aware of *all* your options, be able to recognize them, to play them, and last but not least, to make a clear choice without wavering (you can always change later).

But there are also some practical, *and* stylistic, reasons why you would opt for the one, instead of for another, choice. Basically, there are three main elements that will guide your choice:

- Does the chord scale include avoid tones?
- Are there consecutive semitones in the chord scale?
- What color do I want to hear?

All these choices are *essentially modal* choices.

### Jazz

In Jazz, being an improvisation-based style, the (average) musician tends to make practical choices, fast choices that are obvious and "ready" to be played on sight-reading, or by ear.

Jazz musicians also "hate" avoid tones<sup>1</sup>, because "landing" on an avoid tone, i.e. without resolving it downwards to the actual chord tone, is a clumsiness that can happen more often than one would like in the heat of an improvisation, and it really does sound "clumsy" (i.e. *too dark*).

Therefore, it's quite common to "Avoid the Avoids" by *brightening* up the chord scales, turning them into chord scales with, ideally, no avoids at all, or, possibly, at least less avoids. To give just a few ideas:

Category	Dark chord scale	Avoids		Brighter chord scale	Avoids
Natural modes	[Ion]	Av11	=>	[Lyd]	–
	[Phr]	Av♭9 – Av♭13	=>	[Aeol]	Av♭13
	[Mixo]	Av11	=>	[Lyd♭7]	–
	[Aeol]	Av♭13	=>	[Dor]	–
	[Locr]	Av♭9	=>	[Locr⁹]	–
minor chords (when introduced by their dominant)	[Phr] [Aeol] [Dor]	Av♭9 – Av♭13 Av♭13 –	=>	[Mel]	–
Dominant chord scales	[Mixo]	Av11	=>	[Lyd♭7]	–
	[Mixo♭⁹]	Av11	=>	[Dim ½-1]	–
	[Mixo♭¹³]	Av11	=>	[Wh.T]	–
	[Sp.Phr]	Av11	=>	[Alt]	–

<sup>1</sup> This is a stylistic tendency since the Be-Bop era (since the 1940's and 1950's), not so in older jazz styles.

Dominant chords are definitely the chords that are the easiest to alter, i.e. easy to darken or to brighten up. A good dominant chord scale choice can help you to *prepare* the exact chord scale wished for on the target chord. The voice leading (phrasing) combinations are too numerous to list, but here are a few examples taken from the previous parts and chapters, just to contradict some “evidences”. We saw that:

- A Major-IV<sup>Δ</sup> [Lyd] (F<sup>Δ</sup>), when introduced by its dominant (C7), sounds “better” as an [Ion] chord because of the ♭7<sup>th</sup> degree (residual tone B♭) of the dominant.  
However, that ♭7<sup>th</sup> (B♭) could be an *approach tone* (upward leading tone) towards the #11 (B) of the [Lyd] target chord.
- A dominant chord that includes Tb13 (G7<sup>♭13</sup>) prepares to a minor target chord (Cm).  
However, that Tb13 (E♭) could be an *approach tone* (upward leading tone) towards the Major 3<sup>rd</sup> (E) of the Major target chord.
- Conversely, a dominant chord that includes T13 (G13) prepares to a Major target chord (C). However, that T13 (E) could be an *approach tone* (downward leading tone) towards the ♭3<sup>rd</sup> (E♭) of the minor target chord.
- ...

Consecutive semitones in the chord scale is also something many musicians will try to avoid, because it tends to sound chromatic and unclear (cluster like).<sup>1</sup>

Category	Dark chord scale	Avoids		Brighter chord scale	Avoids
Diminished chord scales	[U.Locr]	Av♭9 + consecutive semitones	=>	[Dim 1-½]	–
	[Locr <sup>♯7</sup> ]	Av♭9 + consecutive semitones	=>	[Dim 1-½]	–
	[U.Locr <sup>9</sup> ]	consecutive semitones	=>	[Dim 1-½]	–

### Other Styles

In other musical styles, the options are often “fixed” (i.e. *not* improvised, but a pre-defined idea, sometimes written on a score). The (fixed, composed) choices can be guided by the typical color of the chord scale (exotic, Arabic, folky, gypsy, “strange” ...).

- Avoid tones are not avoided as much, since their needed resolutions can be, and mostly are, foreseen and resolved in advance (i.e. predefined, written on the score).
- Consecutive semitones can be sought for effect.

The new scales we’re about to see in the next chapters are often “strange” scales that are less used in Jazz<sup>2</sup>, though they’re rooted in a long (classical) tradition. The few clues given above should help you to make your personal choices as you learn still more options.

<sup>1</sup> Though playing chromatically is often “tasted” too.

<sup>2</sup> Once again, it’s difficult to generalize since every musician makes his own choices, sometimes (often?) *regardless* of the style.

## minor Sub-Dominants (SDm)

It's certainly a good thing to review a few scale concepts before learning about the minor Sub-Dominant chords, their parent scales and their chord scales.

All the parent scales we've seen so far can be subdivided in two distinct groups.

### Natural Scales

The old church modes – from bright to dark: Lydian, Ionian, Mixolydian, Dorian, Aeolian, Phrygian and Locrian<sup>1</sup> – are “natural” parent scales, i.e. they can all be played on a piano without using the black keys.

	F Lydian	F	G	A	B	C	D	E	F
		1	2	3	#4	5	6	7	8=1
Major scales	C Ionian	C	D	E	F	G	A	B	C
		1	2	3	4	5	6	7	8=1
	G Mixolydian	G	A	B	C	D	E	F	G
		1	2	3	4	5	6	7	8=1
minor scales	D Dorian	D	E	F	G	A	B	C	D
		1	2	3	4	5	6	7	8=1
	A Aeolian <sup>2</sup>	A	B	C	D	E	F	G	A
		1	2	3	4	5	6	7	8=1
	E Phrygian	E	F	G	A	B	C	D	E
		1	2	3	4	5	6	7	8=1
	B Locrian	B	C	D	E	F	G	A	B
		1	2	3	4	5	6	7	8=1

All the chord scales that are generated by natural modes are themselves natural modes.

To keep track of them, you just need to remember their stepwise order on a piano:

C Ionian – D Dorian – E Phrygian – F Lydian – G Mixolydian – A Aeolian – B Locrian

The Lydian mode generates, in order: [Lyd] – [Mixo] – [Aeol] – [Locr] – [Ion] ... and so on.

<sup>1</sup> The Locrian mode is, strictly speaking, not an old church mode, but it is a “natural” scale.

<sup>2</sup> It's because the Aeolian scale is a “natural” scale, that it's also called the minor *Natural* scale, compared to the Harmonic and Melodic scales that are “synthetic” scales.

## Synthetic Scales

The Harmonic, Melodic and Major<sup>b6</sup> modes, on the other side, are “synthetic” parent scales. You’ll always need, at least one, black key(s) to be able to play them.

Major scales	C Major <sup>b6</sup>	C	D	E	F	G	A♭	B	C
		1	2	3	4	5	♭6	7	8=1
minor scales	D Melodic	D	E	F	G	A	B	C♯	D
		1	2	♭3	4	5	6	7	8=1
	A Harmonic	A	B	C	D	E	F	G♯	A
		1	2	♭3	4	5	♭6	7	8=1

The Major<sup>b6</sup> scale provides a darkening of the Major scale, *without* becoming minor.<sup>1</sup>  
 The Melodic scale provides a brightening of the Dorian scale, *without* becoming Major.  
 The Harmonic scale provides a brightening of the Aeolian scale, *without* becoming Major.  
 All three scales are *hanging in between Major and minor*.

Because all these scales are synthetic, they generate other, complex, much harder to remember, synthetic chord scales like:

Parent scale	Chord scales						
	on I	on II	on III	on IV	on V	on VI	on VII
Major <sup>b6</sup>	[Maj <sup>b6</sup> ]	[Dor <sup>b5</sup> ]	[Phr <sup>b4</sup> ]	[Lyd <sup>♭3</sup> ]	[Mixo <sup>b9</sup> ]	[Lyd <sup>#2/#5</sup> ]	[Locr <sup>♭7</sup> ]
Melodic	[Mel]	[Dor <sup>b9</sup> ]	[Lyd <sup>♯5</sup> ]	[Lyd <sup>♯7</sup> ]	[Mixo <sup>b13</sup> ]	[Locr <sup>9</sup> ]	[S.Locr] <sup>2</sup>
Harmonic	[Harm]	[Locr <sup>13</sup> ]	[Ion <sup>♯5</sup> ]	[Dor <sup>#4</sup> ]	[Sp.Phrg] <sup>3</sup>	[Lyd <sup>♯9</sup> ]	[U.Locr] <sup>4</sup>

Because of their complexity, these parent scales and chord scales are often unknown, dismissed or unacknowledged by many musicians. And, if acknowledged, they come with lots of different names, according to the theoretician or school that teaches them. We saw for example that the Major<sup>b6</sup> was also called Moll-Dür (= *Minor-Major*, in German), Mixte-Majeure (= *Hybrid Major*, in French), Gemengd (= *Hybrid*, in Dutch), Harmonic Major (= Harmonic with a Major 3<sup>rd</sup>) ... Five different names for only one scale!

Moreover, a similar name sometimes refers to different scales, again, depending on the school or language. To avoid confusion, I tend to use names that cannot be ambiguous, like most names above. Indeed, Major<sup>b6</sup> cannot be understood otherwise as “the Major scale with a lowered 6<sup>th</sup> degree”. Some names however – the ones **in bold above** – are so widespread that we cannot ignore them.

<sup>1</sup> As does the “natural” Mixolydian scale. Think of Major Blues!

<sup>2</sup> [Super Locrian]

<sup>3</sup> [Spanish Phrygian] or [Mixo<sup>b9/b13</sup>]

<sup>4</sup> [Ultra Locrian]

The parent scales we're about to see – the ones that generate minor Sub-Dominant chords – are, like the Major<sup>b6</sup>, the Harmonic and the Melodic scale, all *hanging in between Major and minor*, or *in between minor and “yet more minor”*, and they're all (even more so) complex and thus often unacknowledged synthetic scales. Most of these *parent scales* have been named with a, more or less known, more or less universal, name.

Because the generated *chord scales* are also difficult to remember, one tends to simply call them e.g. the Major<sup>b6</sup>- $\flat$ VI <sup>$\Delta$ #5</sup> [Mode VI] instead of Major<sup>b6</sup>- $\flat$ VI <sup>$\Delta$ #5</sup> [Lyd<sup>#2/#5</sup>]. I'll list the parent scales and subsequent chord scales as completely (and as pragmatically) as possible in the next chapters. But for the performer/composer/improviser it's definitely easier to *remember the techniques used* than it is to remember all the scales.

## IN BETWEEN MAJOR AND MINOR

### Lowering the 6<sup>th</sup> degree of the Major parent scales

Let me remind you of the recent analysis of the last 8 bars of ‘All Of Me’ (Simons & Marks)<sup>1</sup> in the previous chapter on Modal Interchange (page 203).

- Second bar:
- Option 1: The Fm is analyzed as a Major<sup>b6</sup>-IVm [Lyd<sup>b3</sup>] ( $m^\Delta$ ) SDm chord, suggested by the absence of a 7<sup>th</sup> in the chord.
  - Option 2: But, since the 7<sup>th</sup> is left to the choice of the performer, one could also opt for the darker Aeolian-IVm7 [Dor].

Indeed, when we determine the parent scale using each of the three methods seen before:

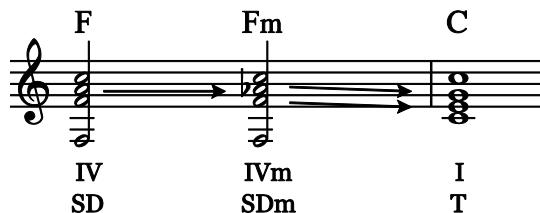
- The “stricter rule” method says: This *isolated* Fm chord is not a relative-II chord. The “stricter rule” – [Dor] for relative-IIIm7 chords – doesn't apply.
- The “key signature” method says: The chord includes the Ab tone, we need three flats to include the Ab tone => Aeolian-IVm7 [Dor].
- The “residual tones” method says: One needs only to alter the A tone of the parent scale to the Ab tone required by the chord => Major<sup>b6</sup>-IVm<sup>(Δ)</sup> [Lyd<sup>b3</sup>] SDm (*minor Sub-Dominant*)

The Major<sup>b6</sup> parent scale generates *the minor Sub-Dominant* IVm<sup>Δ</sup>, with a *brighter* color (only *one* lowered tone) than the darker Aeolian-IVm7 (with *three* lowered tones).

<sup>1</sup> © 1931 by Irving Berlin Inc.

And that's exactly what (most) minor Subdominants do. They sound brighter than modal interchanges with minor parent scales, because they are generated by parent scales that are *darker than Major*, though still *brighter than minor*. They hang *in between* Major and minor.<sup>1</sup>

The origin of the IVm SDm chord is *contrapuntal*, to reinforce the resolution from the subdominant IV chord towards the tonic I chord with a double semitone resolution. By lowering the 6<sup>th</sup> degree of the parent scale (or the 3<sup>rd</sup> of the IV chord), the A tone (see below: upper middle voice) becomes an A♭ tone that resolves by semitone to the G tone, and the F tone (lower middle voice) also resolves by semitone to the E tone.



The old classical name<sup>2</sup> for this Major<sup>b6</sup>-IVm chord – *the minor Sub-Dominant* – became a concept – *the SDm chords*, i.e. plural – and a technique (lowering the 6<sup>th</sup> degree of the parent scale) that can apply to *any* subdominant chord ...

... of the Major scale:

Major-SD		Major <sup>b6</sup> -SDm
IIm7 [Dor]	=>	IIm7 <sup>b5</sup> [Dor <sup>b5</sup> ]
IV <sup>Δ</sup> [Lyd]	=>	IVm <sup>Δ</sup> [Lyd <sup>b3</sup> ]
IV6 [Lyd] <sup>3</sup>	=>	IVm6 [Lyd <sup>b3</sup> ]
V9sus4 [Mixo] <sup>4</sup>	=>	V7 <sup>b9</sup> sus4 [Mixo <sup>b9</sup> ]

... and of the (also “Major”) Mixolydian scale:

Mixo-SD		Mixo <sup>b6</sup> -SDm <sup>5</sup>
IIm7 [Aeol]	=>	IIm7 <sup>b5</sup> [Locr <sup>b9</sup> ]
IV <sup>Δ</sup> [Ion]	=>	IVm <sup>Δ</sup> [Mel]
Vm7 [Dor] <sup>6</sup>	=>	Vm7 [Dor <sup>b9</sup> ]
♭VII <sup>Δ</sup> [Lyd]	=>	♭VII7 [Lyd <sup>b7</sup> ]

<sup>1</sup> Just as the Major Blues. See previous section [A Modal Approach to the Blues](#) (page 222).

<sup>2</sup> Remember the old German name of the Major<sup>b6</sup> scale, the *Moll-Dür* scale, meaning “a *minor* subdominant to a Major tonic”.

<sup>3</sup> The IV6 [Lyd] chord is actually the same as the IV<sup>Δ</sup> [Lyd], as their chord scales suggest. It’s mentioned here only because the SDm IVm6 chord is used very often.

<sup>4</sup> The V7sus4 (V9sus4), with its ambiguous SD(D) function, is a subdominant chord too since it doesn’t include the tritone needed for a “full” dominant function.

<sup>5</sup> The Mixo<sup>b6</sup> scale is exactly the same as the dominant chord scale [Mixo<sup>b13</sup>], though here, as a parent scale to SDm chords.

<sup>6</sup> The Vm7, with its ambiguous SD(D) function, is a subdominant chord too since it doesn’t include the tritone needed for a “full” dominant function.

Note that both new parent scales – the Major<sup>b6</sup> and Mixo<sup>b6</sup> scales – are “Major” scales, i.e. they include the Major 3<sup>rd</sup> of the tonality. Consequently, all the generated chords and chord scales include the Major 3<sup>rd</sup> of the tonality too. They hang *in between* Major and minor.

The **Aeolian-IIm7<sup>b5</sup> [Locr]**, the **Aeolian-IVm7 [Dor]** and its inversion the **Aeolian-**bVI** [Lyd]** (= IVm7 inversed on its 3<sup>rd</sup>), the **Aeolian-**bVI**<sup>Δ</sup> [Lyd]**, and the **Aeolian-**bVII**7 [Mixo]**, are all considered SDm chords too, because they also include the **b6** degree of the tonality. Though, these chords are generated by parent scales *with the minor 3<sup>rd</sup> of the tonality also*. These chords *do not* hang in between Major and minor. They’re regular, *darker*, modal *interchanges with the Aeolian minor scale*<sup>1</sup> as seen in the previous chapters.

### Lowering the 2<sup>nd</sup> degree of the Major parent scales

Lowering the 2<sup>nd</sup> degree of the Major parent scales also generates some SDm chords, though quite rarely used.

Major-SD		Major <sup>b2</sup> -SDm	Chord scale starting on
IIm7 [Dor]	=>	$\flat\text{II}^{\Delta\#5}$ [Lyd <sup>#2/#5/#6</sup> ]	[Mode II] (D $\flat$ <sup>Δ#5</sup> )
IV <sup>Δ</sup> [Lyd]	=>	see below	
IV6 [Lyd] <sup>2</sup>	=>	$\flat\text{II}^{\Delta\#5}$ on IV [Lyd <sup>b6</sup> ]	[Mode IV] (D $\flat$ <sup>Δ#5</sup> /F)
V9sus4 [Mixo]	=>	$\flat\text{II}^{\Delta\#5}$ on V [Mixo <sup>b5</sup> ]	[Mode V] (D $\flat$ <sup>Δ#5</sup> /G)

Mixo-SD		Mixo <sup>b2</sup> -SDm	Chord scale starting on
IIm7 [Aeol]	=>	$\flat\text{II}^{\Delta\#5}$ [Lyd <sup>#2/#5</sup> ]	[Mode II] (D $\flat$ <sup>Δ#5</sup> )
IV6 [Ion]	=>	$\flat\text{II}^{\Delta\#5}$ on IV [Maj <sup>b6</sup> ]	[Mode IV] (D $\flat$ <sup>Δ#5</sup> /F)
Vm7 [Dor]	=>	Vm7 <sup>b5</sup> [Dor <sup>b5</sup> ]	
$\flat\text{VII}^{\Delta}$ [Lyd]	=>	$\flat\text{VIIIm}^{\Delta}$ [Lyd <sup>b3</sup> ]	

### Lowering the 2<sup>nd</sup> and the 6<sup>th</sup> degrees of the Major parent scales

The combination of both **b2** and **b6** generates these SDm chords, quite unusual too:

Major-SD		Major <sup>b2/b6</sup> -SDm <sup>3</sup>	Chord scale starting on
IIm7 [Dor]	=>	$\flat\text{II}^{\Delta}$ [Lyd <sup>#2/#6</sup> ]	[Mode II] (D $\flat$ <sup>Δ</sup> )
IV <sup>Δ</sup> [Lyd]	=>	see below	
IV6 [Lyd]	=>	$\flat\text{II}^{\Delta}$ on IV [Harm <sup>#4</sup> ] <sup>4</sup>	[Mode IV] (D $\flat$ <sup>Δ</sup> /F)
V9sus4 [Mixo]	=>	$\flat\text{II}^{\Delta}$ on V [Mixo <sup>b9/b5</sup> ]	[Mode V] (D $\flat$ <sup>Δ</sup> /G)

<sup>1</sup> Or, theoretically also possible, modal interchanges with the Harmonic *minor* scale:  
IIm7<sup>b5</sup> [Locr<sup>13</sup>], IVm7 [Dor<sup>#4</sup>],  $\flat\text{VI}_6$  [Lyd<sup>#9</sup>].

<sup>2</sup> The IV6 [Lyd] chord is the same as the IV<sup>Δ</sup> [Lyd]. The IV6 is needed to see what impact the lowered 2<sup>nd</sup> degree has on the IV chord.

<sup>3</sup> This scale is also called the *Double Harmonic* scale, because it is built with two consecutive Harmonic tetrachords.

<sup>4</sup> Also known as the *Hungarian Gypsy* scale.

Mixo-SD		Mixo <sup>b2/b6</sup> -SDm <sup>1</sup>	Chord scale starting on
IIm7 [Aeol]	=>	$\flat\text{II}^\Delta$ [Lyd <sup>#2</sup> ]	[Mode II] ( $\text{D}\flat^\Delta$ )
IV6 [Ion]	=>	$\flat\text{II}^\Delta$ on IV [Harm]	[Mode IV] ( $\text{D}\flat^\Delta/\text{F}$ )
Vm7 [Dor]	=>	$\text{Vm7}^{\flat 5}$ [Locr <sup>13</sup> ]	
$\flat\text{VII}^\Delta$ [Lyd]	=>	$\flat\text{VIIIm7}$ [Dor <sup>#4</sup> ]	

Because all these chords are quite unusual, and therefore also often unacknowledged, many musicians will prefer to use their Phrygian equivalents: the **Phrygian- $\flat\text{II}^\Delta$  [Lyd]**, the **Phrygian-IVm7 [Aeol]**, the **Phrygian-Vm7<sup>b5</sup> [Locr]** and the **Phrygian- $\flat\text{VIIIm7}$  [Dor]**, that by analogy (also including  $\flat 2$  and  $\flat 6$  of the parent scales) are also considered SDm chords. These chords, however, are all generated by the Phrygian mode. They *do not* hang in between Major and minor. They're regular, *darker*, modal *interchanges with* the Phrygian *minor* scale as seen in the previous chapters.

## IN BETWEEN MINOR AND MAJOR

Just for comparison, and to understand the concept of SDm chords better (the next chords *are not* SDm chords, and they're not new either), it's interesting to see how the concept can be reversed.

By *brightening* – raising the  $\flat 6^{\text{th}}$  degree of – the Harmonic minor scale, one becomes the Melodic parent scale with the SD chord Melodic-IV7 [Lyd<sup>b7</sup>]. Because that chord is a *Major* chord, it *could* be called (and actually used to be called<sup>2</sup>) *the Major Sub-Dominant in minor*.

By analogy, the Melodic-IIm7 [Dor<sup>b9</sup>] and the Melodic-V7sus4 [Mixo<sup>b13</sup>] *would* also be called *Major Subdominants in minor*.

*Brightening* – raising the  $\flat 6^{\text{th}}$  degree of – the Aeolian (or Natural minor) scale gives the Dorian parent scale. Consequently, the Dorian-IIm7 [Phr], the Dorian-IV7 [Mixo], the Dorian-Vm7 [Aeol] and the Dorian- $\flat\text{VII}^\Delta$  [Lyd] *would* also be called *Major Subdominants in minor*.

<sup>1</sup> The Mixo<sup>b2/b6</sup> scale is exactly the same as the dominant chord scale [Mixo<sup>b9/b13</sup>], better known as the [Sp.Ph]  
scale, though here, as a parent scale to SDm chords.

<sup>2</sup> Remember the old German name for the Melodic scale, the *Dür-Moll* scale meaning “a *Major* subdominant to a minor tonic”.

## IN BETWEEN MINOR AND “YET MORE MINOR”

### Lowering the 2<sup>nd</sup> degree of the minor parent scales

There are also *minor* Sub-Dominants *in minor* that hang in between the Aeolian and the Phrygian modes.

When lowering the 2<sup>nd</sup> degree of the Aeolian scale, one becomes the Phrygian scale. But lowering the 2<sup>nd</sup> degree of the *Harmonic* scale, gives the *Neapolitan minor* parent scale, conveniently called here, the *Harmonic<sup>b2</sup>* scale.

This scale is called the *Neapolitan* minor scale because it was (supposedly) introduced by 18<sup>th</sup> century Neapolitan composers who used the (SDm) classical Neapolitan Sixth Chord<sup>1</sup> a lot. The origin, again, is contrapuntal to provide a double semitone resolution from the SD IVm, becoming SDm bII, to the Tonic Im (first example below).

Fm       $\text{D}\flat/\text{F}$       Cm       $\text{D}\flat/\text{F}$       G7      Cm  
 IVm SD      bII/3 SDm      Im T      bII/3 SDm      V7 D      Im T

This SDm chord, though, was more often used to prepare to the Dominant, before resolving to the Tonic (second example above).<sup>2</sup>

The *darkening* of the Harmonic scale, using b2 instead of 2, justifies the classification of this chord as a SDm chord<sup>3</sup>. The technique can apply to *any* subdominant chord of the Harmonic scale:

Harmonic-SD		Harmonic <sup>b2</sup> -SDm	Chord scale starting on
IIIm7 <sup>b5</sup> [Locr <sup>13</sup> ]	=>	$\text{bII}^\Delta$ [Lyd <sup>#6</sup> ]	[Mode II] ( $\text{D}\flat^\Delta$ )
IVm7 [Dor <sup>#4</sup> ]	=>	see below	
IVm6 [Dor <sup>#4</sup> ]	=>	$\text{bII}^\Delta$ on IV [Aeol <sup>#4</sup> ]	[Mode IV] ( $\text{D}\flat^\Delta/\text{F}$ )
V7 <sup>b9</sup> sus4 [Sp.Phr]	=>	$\text{bII}^\Delta$ on V [Locr <sup>3</sup> ]	[Mode V] ( $\text{D}\flat^\Delta/\text{G}$ )

<sup>1</sup> The classical name for that chord – the sixth chord – comes from its first inversion on the 3<sup>rd</sup> ( $\text{D}\flat/\text{F}$  or  $\text{bII}$  on IV), creating a sixth interval between the middle lower voice F (3<sup>rd</sup> of the chord) and the upper voice  $\text{D}\flat$  (root of the chord). According to classical voice leading rules, i.e. to avoid parallel fifths in the resolution, that chord *must* be inverted. The name is also *in opposition* to the *added* sixth chord, e.g.  $\text{D}\flat 6$ .

<sup>2</sup> The Neapolitan Sixth Chord was sometimes used in Major contexts too, bringing us back to the SDm bII on IV (or  $\text{D}\flat^\Delta/\text{F}$ ) seen in the previous section In Between Major and minor (page 234).

<sup>3</sup> Indeed, darkening SD chord gives SDm chords, while brightening them gives “Major” subdominants, as we’ve seen in the previous section In Between minor and Major (page 237).

None of these *Neapolitan* chords are used very often because their chord scales are complex, often unacknowledged, *and* because they all include the consecutive semitones B, C, D $\flat$  (in C), giving them a cluster like sound. Many musicians will therefore prefer to use their Phrygian equivalents, the **Phrygian- $\flat$ II $^\Delta$  [Lyd]**, the **Phrygian-IVm7 [Aeol]**, the **Phrygian-Vm7 $^b$ 5 [Locr]**, plus the **Phrygian- $\flat$ VIIIm7 [Dor]**<sup>1</sup>, that by analogy (also including  $\flat$ 2 of the parent scales) are considered SDm chords too. These chords, however, are all generated by the Phrygian mode. They *do not* hang in between Aeolian and Phrygian. They're regular, *darker*, modal *interchanges* with the Phrygian scale as seen in the previous chapters.

The technique is applied to the Melodic parent scale too. Lowering the 2<sup>nd</sup> degree of the Melodic scale creates the *Neapolitan Major*<sup>2</sup> parent scale, more conveniently called the *Melodic $^b$ 2* scale below. The resulting SDm chords are also quite unusual:

Melodic-SD		Melodic $^b$ 2-SDm	Chord scale starting on
IIIm7 [Dor $^b$ 9]	=>	$\flat$ II $^\Delta$ [Lyd $^{\sharp 5/\flat 6}$ ]	[Mode II] (D $\flat$ $^\Delta$ )
IV7 [Lyd $^b$ 7]	=>	IV7 $^{b13}$ [Lyd $^{\flat 6/\flat 7}$ ] (or, actually, [Wh.T]) <sup>3</sup>	[Mode IV] (F7 $^{b13}$ )
IV6 [Lyd $^b$ 7]	=>	see above	
V7sus4 [Mixo $^b$ 13]	=>	V7 $^b$ 5 [Mixo $^{\flat 5/\flat 13}$ ] (or, actually, [Wh.T]) <sup>4</sup>	[Mode V] (G7 $^b$ 5)

And, finally, the technique can apply to the Dorian parent scale too. The resulting SDm chords are actually used quite often:

Dorian-SD		Dorian $^b$ 2-SDm
IIIm7 [Phr]	=>	$\flat$ II $^{\Delta\sharp 5}$ [Lyd $^{\sharp 5}$ ]
IV7 [Mixo]	=>	IV7 $^{b13}$ [Mixo $^{\flat 13}$ ]
Vm7 [Aeol]	=>	Vm7 $^b$ 5 [Locr $^9$ ]
$\flat$ VII $^\Delta$ [Ion]	=>	$\flat$ VIIIm $^\Delta$ [Mel]

<sup>1</sup> See also the Phrygian SDm chords in the previous section In Between Major and minor (page 234).

<sup>2</sup> Both the Neapolitan minor and the Neapolitan Major scales start with a Phrygian tetrachord ( $\frac{1}{2} - 1 - 1$ ), but the Neapolitan minor ends with a *Harmonic* tetrachord ( $\frac{1}{2} - 1\frac{1}{2} - \frac{1}{2}$ ), hence the adjective *minor*, whereas the Neapolitan Major ends with a *Major* tetrachord ( $1 - 1 - \frac{1}{2}$ ), hence the adjective *Major*.

<sup>3</sup> When skipping the 5<sup>th</sup> of the chord.

<sup>4</sup> When skipping the 4<sup>th</sup> of the chord. That's why this chord isn't noted with the appendix sus4.

## Chromatically Altered Sub-Dominants

All the previous SDm chords provide a darkening of the original parent scale.

There are Sub-Dominant chords that provide a *brightening* of the original parent scale too, they're called *Chromatically Altered Sub-Dominants*.

### Raising the 4<sup>th</sup> degree of the parent scale

These chromatic altered subdominants (chrSD) are generated by raising the 4<sup>th</sup> degree of the parent scale. By raising that degree to #4, we have a possible resolution to 5 (instead of the usual resolution from 4 to the Major 3). Chromatic SD chords always resolve to the Tonic chord (or go back to SD)<sup>1</sup>, and their logic is *contrapuntal*, i.e. they only exist *in order to* create an upward leading tone resolution from #4 to 5 (in any voice of the consecutive chords, though most often in the bass).

The technique can apply to *any* subdominant chord (minor subdominants also), and *even to dominants* becoming chromatic subdominants.

The next Lydian-chrSD chords – each with an example of their resolution to the tonic chord – have already been seen in the chapter on modal interchanges. The first two, the **Lydian-II7 [Mixo]** and the **Lydian-#IVm7<sup>b5</sup> [Locr]**, are definitely the most used. The others are quite rarely used.

Major-SD		Lydian-chrSD		Resolution	(in C)
IIIm7 [Dor]	=>	II7 [Mixo]	=>	I/3	(C/E)
IV <sup>Δ</sup> [Lyd]	=>	#IVm7 <sup>b5</sup> [Locr]	=>	I/5	(C/G)
V7sus4 [Mixo]	=>	V <sup>Δ</sup> sus4 [Ion]	=>	I <sup>Δ</sup>	(C <sup>Δ</sup> )
(D) V7 [Mixo]	=>	V <sup>Δ</sup> [Ion]	=>	I <sup>Δ</sup>	(C <sup>Δ</sup> )
(D) VIIIm7 <sup>b5</sup> [Locr]	=>	VIIIm7 [Phr]	=>	I <sup>Δ</sup>	(C <sup>Δ</sup> )

Mixolydian-SD		Lydian <sup>b7</sup> -chrSD <sup>2</sup>
IIIm7 [Aeol]	=>	II7 [Mixo <sup>b13</sup> ]
IV <sup>Δ</sup> [Ion]	=>	#IVm7 <sup>b5</sup> [S.Locr]
Vm7 [Dor]	=>	Vm <sup>Δ</sup> [Mel]
♭VII <sup>Δ</sup> [Lyd]	=>	♭VII <sup>Δ#5</sup> [Lyd <sup>#5</sup> ]

<sup>1</sup> If the Lydian-II7 [Mixo] would resolve to the dominant V7, it would actually be the V7/V.

<sup>2</sup> This Lydian<sup>b7</sup> scale is exactly the same as the dominant [Lyd<sup>b7</sup>] scale, though here as a parent scale to chromatic subdominant chords.

The **Dorian<sup>#4</sup>-#IV° [U.Locr]** is the next most used chrSD chord. We've encountered it in Blues, in the second (SD) phrase as a passage chord between F7 and C7.<sup>1</sup>

Dorian-SD		Dorian <sup>#4</sup> -chrSD
IIm7 [Phr]	=>	II7 [Sp.Phr]
IV7 [Mixo]	=>	#IV° [U.Locr]
Vm7 [Aeol]	=>	Vm <sup>Δ</sup> [Harm]
♭VII <sup>Δ</sup> [Ion]	=>	♭VII <sup>Δ5</sup> [Ion <sup>5</sup> ]

The technique can apply to *all* subdominants *and* minor subdominants. However, whenever the parent scale includes the ♭6<sup>th</sup> degree – for example, the Aeolian<sup>#4</sup> scale – the chord scale that starts on the ♯4<sup>th</sup> degree will always include a diminished 3<sup>rd</sup>, making it increasingly difficult to (1) find a correct chord symbol without using enharmonic writing, and (2) to find a good name for the chord scale without referring to the parent scale, e.g. Aeolian<sup>#4</sup> [Mode IV].

F♯ [Locrian ♭3/♭7] or [Mode IV]

1 ♭2 ♭3 ♯4 5 ♭6 ♭7 ?? → A♭7/G♭

1 2 ♭3 ♯4 5 ♭6 ♭7

C Aeolian #4

The same difficulties occur with parent scales including the ♭2<sup>nd</sup> degree – for example, the Lydian<sup>♭2</sup> scale. The chord scale that starts on ♭2 will always include an augmented 3<sup>rd</sup>.

D♭ [Lydian ♯2/♯3/♯5/♯6] or [Mode II]

1 ♭2 3 ♯4 5 6 7 F♯m7(♭5)/D♭

1 ♭2 3 ♯4 5 6 7

C Lydian ♭2

Listing up all the possibilities is therefore an exercise that can bring a lot more confusion than clarification. But it's important to *remember* that *all* SD and SDm chords *can be chromatically altered*. The best method is to remember (only) the *parent* scales for chrSD(m) chords:

From Bright to Dark		Parent Scales to SD		Parent Scales to chrSD
	Natural modes	(Lydian)	=>	(already includes ♯4)
		Major (or Ionian)	=>	Lydian
		Mixolydian	=>	Lydian <sup>7</sup>
		Dorian	=>	Dorian <sup>#4</sup>
		Aeolian	=>	Aeolian <sup>#4</sup>
		Phrygian	=>	Phrygian <sup>#4</sup>
		(Locrian)	=>	(not possible, ♭5!)

<sup>1</sup> See Blues with Auxiliary Diminished Chords (page 163).

From Bright to → Dark	Synthetic modes	Parent Scales to SD		Parent Scales to chrSD	
		Melodic	=>	Melodic <sup>#4</sup>	Or, actually, Lydian <sup>b3</sup>
		Harmonic	=>	Harmonic <sup>#4 1</sup>	

From Bright to → Dark	Altered modes	Parent Scales to SDm		Parent Scales to chrSDm	
		Major <sup>b6</sup>	=>	Lydian <sup>b6</sup>	
		Major <sup>b2</sup>	=>	Lydian <sup>b2</sup>	
		Major <sup>b2/b6</sup>	=>	Lydian <sup>b2/b6</sup>	
		Mixolydian <sup>b6</sup>	=>	Lydian <sup>b6/b7</sup>	or, Whole Tone (without 5)
		Mixolydian <sup>b2</sup>	=>	Lydian <sup>b2/b7</sup>	or, Diminished ½-1 (with #2)
		Mixolydian <sup>b2/b6</sup>	=>	Lydian <sup>b2/b6/b7</sup>	or, Spanish Phrygian <sup>#4</sup>
		Melodic <sup>b2</sup>	=>	Melodic <sup>b2/#4</sup>	or, Lydian <sup>b2/b3</sup>
		Harmonic <sup>b2</sup>	=>	Harmonic <sup>b2/#4</sup>	
		Dorian <sup>b2</sup>	=>	Dorian <sup>b2/#4</sup>	or, Diminished ½-1 (with 3)

Once you're able to remember the construction of their parent scales, the next step is to think the chord scales to the chrSD(m) chords as

- [Mode II] for II or  $\flat$ II
- [Mode IV] for  $\sharp$ IV
- [Mode V] for V
- [Mode VI] for  $\flat$ VI <sup>2</sup>
- [Mode VII] for VII or  $\flat$ VII

... and to be creative when it comes to find the best chord symbol for each possible chord!

<sup>1</sup> Also known as the *Hungarian Gypsy* scale.

<sup>2</sup> Remember the  $\flat$ VI6 SDm chord as an inversion of IVm7, and its  $\flat$ VI $\Delta$  variant.



## Analysis of a Song with (random) Modal Changes

‘Fall’ is a song I composed – in C Major – as an experiment, trying to use as much modal interchange chords as possible. It also includes (only a few) minor subdominant chords (SDm) and just one chromatically altered subdominant chord (ChrSDm).

Both the introduction as the end of the song also prepare to the last part of this book on Modal Non-Functional Harmony (page 249).

### Notes on the Analysis

Bars 1 and 2 (up to 8): These 2 bars repeating themselves are a reminder of bars 45 and 46, but here, using only *modal voicings*. We’ll learn about modal voicings, and we’ll see how this can be analyzed as a *non-functional vertical modal structure*, in the next part of this book.

- Note that the dominant, with this particular voicing, analyzed here as a V7 [Alt] chord, actually *does not* include the tritone of the tonality, and is consequently *non-functional*.
- The Mixo<sup>b6</sup>- $\flat$ VII7 [Lyd<sup>b7</sup>] is a SDm.

Bar 11: The Em9 is, due to its 9<sup>th</sup> (F# in the melody), a *Lydian-IIIIm7* [Aeol].

The following Em7 is analyzed as the “regular” (Major- or) Ionian-IIIIm7 [Phr] because of the return to F natural tone in the melody. It could be held as the Lydian-IIIIm7 though, for convenience, since the F-tone is really only a short passage tone.

Bar 12: Fm7, Aeolian-IVm7 [Dor] and B $\flat$ 7, Aeolian- $\flat$ VII7 [Mixo] are both SDm chords, though strictly speaking, they’re “only” modal interchange chords with the Aeolian mode.  $\flat$ VII7 *could* be, just as in bar 2, a [Lyd<sup>b7</sup>] chord, and as such, a “real” Mixo<sup>b6</sup>-SDm chord (*hanging in between* Major and minor). But the Aeolian interchange analysis provides a homogenous parent scale for both chords.

Bars 13 to 16:

- E $\flat$ m7 is analyzed as the modal interchange chord Locrian- $\flat$ IIIIm [Dor] (confirming its secondary function towards D $\flat$  Major).
- A $\flat$ 7 is the V7 [Mixo] of D $\flat$  Major (but could also be the [Lyd<sup>b7</sup>] variant). It actually *could* (stubbornly, see further) be analyzed as the Locrian- $\flat$ VI $^\Delta$  [Mixo] interchange chord.
- D $\flat$  $^\Delta$  is analyzed as the modal interchange chord Phrygian- $\flat$ II $^\Delta$  [Lyd] because of the G natural tone in the melody, though, the G tone could be seen as “just a chromatic approach” towards the following A $\flat$  tone.

This analysis keeps, stubbornly, focusing on modal interchange chords (since that was the starting idea of the song), while a “regular” modulation towards D $\flat$  Major (IIIm7 [Dor] – V7 [Mixo] – I $^\Delta$  [Ion]) would definitely be easier (and is actually what I think when I’m improvising over this fragment). But it helps to understand the Schönberg theory (no modulation, only modal changes).

Bar 18 (and 22, 30, 40): G7<sup>b9</sup> is a Harm-V7 [Sp.Ph] modal change (or [Alt] variant).

Bars 20 and 21: F#m7 $^{b5}$  is a Lydian-#IVm7 $^{b5}$  [Locr] ChrSDm resolving to the C/G (I/5).

Bars 24 and 25: The analysis could also (conveniently) be seen as a modulation towards F Major (just as bars 13 to 16), *but* with a Harmonic-V7 [Sp.Ph] (or [Alt]) modal change in F minor.

# Fall

Raphaël Van Goubergen

4 D/C E♭/F C/B♭ D♭/G D/C E♭/F C/B♭ D♭/G D/C

I<sup>Δ</sup> IVm7 ♯VII7 V7 I<sup>Δ</sup> IVm7 ♯VII7 V7 I<sup>Δ</sup>  
 [Lyd] [Dor] [Lyd ♭7] [Alt] [Lyd] [Dor] [Lyd ♭7] [Alt] [Lyd]  
 C Lyd C Aeol C Mixo ♭6 NPS C Lyd C Aeol C Mixo ♭6 NPS C Lyd

5 E♭/F C/B♭ D♭/G D/C E♭/F C/B♭

IVm7 ♯VII7 V7 I<sup>Δ</sup> IVm7 ♯VII7  
 [Dor] [Lyd ♭7] [Alt] [Lyd] [Dor] [Lyd ♭7]  
 C Aeol C Mixo ♭6 NPS C Lyd C Aeol C Mixo ♭6

9 C<sup>Δ</sup> Dm7 Em<sup>9</sup> Em7 Fm7 B♭7

I<sup>Δ</sup> IIIm7 IIIIm9 IIIIm7 IVm7 ♯VII7  
 [Ion] [Dor] [Aeol] [Phr] [Dor] [Mixo]  
 C Maj C Maj C Lyd C Maj C Aeol C Aeol

13 E♭m7 A♭7 D♭<sup>Δ</sup>

♭IIIIm7 V7/II ♭II<sup>Δ</sup>  
 [Dor] [Mixo] [Lyd]  
 C Locr D♭ Maj C Phr

17 Dm7 G<sup>7</sup>♭9 C<sup>Δ</sup> F♯m7♭5

IIIm7 V7 I<sup>Δ</sup> ♯IVm7♭5  
 [Dor] [Sp.Ph] [Ion] [Locr]  
 C Maj C Harm C Maj C Lyd

21 C/G Dm7/G G<sup>7</sup>♭9 C<sup>Δ</sup> Gm7 C<sup>7</sup>♭9

I<sup>Δ</sup> V7sus4 V7 I<sup>Δ</sup> Vm7 V7/IV  
 [Ion] [Mixo] [Sp.Ph] [Ion] [Dor] [Sp.Ph]  
 C Maj C Harm C Maj C Maj C Mixo F Aeol

Fall - 2

25 F<sup>Δ</sup> F#m7<sup>b5</sup> B<sup>7b9</sup> Em7 E<sup>b7</sup>  
 IV<sup>Δ</sup> [Ion] #IVm7<sup>b5</sup> V<sub>7/III</sub> IIIm7 SubV<sub>7/II</sub>  
 C Mixo C Lyd E Aeol C Lyd NPS  
 Dm7 G<sup>7b9</sup> C<sup>Δ</sup> Bbm7 E<sup>b7</sup>

29 IIIm7 V<sub>7</sub> I<sup>Δ</sup> bVIIm7 V<sub>7/VI</sub>  
 [Dor] [Sp.Phr] [Ion] [Dor] [Mixo]  
 C Maj C Harm C Maj C Phr Ab Maj

33 Ab<sup>Δ</sup> Am7<sup>b5</sup> D<sup>7b9</sup> Gm7 Gb<sup>Δ</sup>  
 bVI<sup>Δ</sup> [Ion] VIm7<sup>b5</sup> V<sub>7/V</sub> Vm7 bV<sup>Δ</sup>  
 C Phr C Dor G Harm C Dor C Locr

37 Fm7 Em7<sup>b5</sup> Ebm7 Ab<sup>9</sup> Dm7 G<sup>7#9</sup>  
 IVm7 IIIm7<sup>b5</sup> bIIIIm7 SubV<sub>7/V</sub> IIIm7 V<sub>7</sub>  
 [Dor] [Loer] [Dor] [Lyd b7] [Dor] [Sp.Phr]  
 C Aeol C Mixo C Loer NPS C Maj C Harm

41 C<sup>Δ</sup> Dm7 Em<sup>9</sup> Em7 F<sup>Δ</sup> B<sup>b7</sup>  
 I<sup>Δ</sup> [Ion] IIIm7 IIIIm9 IIIIm7 IV<sup>Δ</sup> bVII<sub>7</sub>  
 C Maj C Lyd C Maj [Phr] [Lyd] C Mixo b6

45 C<sup>Δ</sup> Fm7 B<sup>b7</sup> G<sup>7#9</sup> 1. Cm6/9  
 I<sup>Δ</sup> IVm7 bVII<sub>7</sub> V<sub>7</sub> Im6/9  
 [Lyd] [Dor] [Lyd b7] [Alt] [Dor]  
 C Lyd C Aeol C Mixo b6 NPS C Dor

repeat and fade

49 2. E<sup>b6/C</sup> D7/C D<sup>bΔ/C</sup> C E<sup>b6/C</sup> D7/C D<sup>bΔ/C</sup> C  
 Im7 I<sup>Δ</sup> Im7 I<sup>Δ</sup> Im7 I<sup>Δ</sup> Im7 I<sup>Δ</sup>  
 [Dor] [Lyd] [Phr] [Lyd] [Dor] [Lyd] [Phr] [Lyd]  
 C Dor C Lyd C Phr C Lyd C Dor C Lyd C Phr C Lyd

Bars 26 and 27: The analysis could, more conveniently, be seen as a modulation towards E minor (Natural-IIm $7^{\flat 5}$  [Locr] – Harmonic-V7 [Sp.Phr] – Natural-Im [Aeolian]).

Bar 28: Eb7. I've opted for a SubV7/II [Lyd $\flat 7$ ] analysis for *functional* reasons only.

It could (stubbornly) be analyzed as the *modal non-functional* Phrygian- $\flat$ III7 [Mixo] too.

Bars 32 and 33: The analysis could (conveniently) be seen as a modulation in Ab Major.

Bars 34 and 35: The analysis could (conveniently) be seen as a modulation in G minor (Natural-IIm $7^{\flat 5}$  [Locr] – Harmonic-V7 [Sp.Phr] – Natural-Im [Aeolian]).

Bars 37 and 38: *non-functional vertical modal* structure.

- Ab9 is the SubV7/V [Lyd $\flat 7$ ]. It actually *could*, stubbornly, be analyzed as the Locrian- $\flat$ VI $^\Delta$  [Mixo] interchange chord.

Bar 44: B $\flat$ 7 is analyzed as the SDm Mixo $^{\flat 6}$ - $\flat$ VII7 [Lyd $\flat 7$ ] chord, unlike in bar 12, since the chord is not preceded by the Fm7, or Aeolian-IVm7 [Dor], but by the “regular” Major-IV $^\Delta$  [Lyd] chord (the E tone is residual).

Bar 45 and 46: See bars 1 and 2. This time, the chords are not expressed in typical modal voicings, and are, as such, a lot more functional (T – SDm – SDm – D), but the chord scale options are the same (though *could* be different: e.g. B $\flat$ 7, Aeolian- $\flat$ VII7 [Mixo]).

Bar 47: The Cm $^{6/9}$  conclusive chord is analyzed as a Dorian-Im [Dor] chord, though it could be the Melodic-Im [Mel] chord too.

Bars 49 and 50 (and 51 and 52): *non-functional vertical modal* structure with a *pedal bass*.<sup>1</sup> The tonality of C alternates Dorian, Lydian and Phrygian *colors*. The last C triad chord could also be the Major-I $^\Delta$  [Ion] instead of the Lydian-I $^\Delta$  [Lyd]. The Lydian option though, contributes to the “floating” sound of this “repeat and fade outro”.

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<sup>1</sup> See the next part on Modal Non-Functional Harmony (page 249).



## MODAL NON-FUNCTIONAL HARMONY

This last book-part is only an introduction to *Modal Non-Functional Harmony*. The subject, especially the *Modal Jazz*, deserves a book on its own<sup>1</sup>. My intention is mainly to draw the attention of the reader that Functional Harmony doesn't cover the whole spectrum of music as we're used to hear it in our everyday lives. Modal Non-Functional music is much more present in the common musical practice than one might expect. A fast overview of the history of (Western) music helps to understand.<sup>2</sup>

### What is Modal Music?

Before the Renaissance, music was *monophonic*, i.e. just a melody, without accompanying chords (no harmony), written in one of the six church (or natural) modes: Lydian, Ionian, Mixolydian, Dorian, Aeolian or Phrygian (the Locrian mode was not in use as a church mode). The music was *modal*.

From the early Renaissance on, polyphonic music was developed, first in counterpoint, i.e. different independent *melodies* written above each other. The result of counterpoint, multiple melodic tones sounding together, led inevitably to the discovery of chords and harmony. “Classical”<sup>3</sup> composers gathered in “schools” and developed the *Major/minor Functional Harmony*, music that needs chords with clear functions (subdominant, dominant and tonic chords) to create *functional cadences* with only one goal: to establish, and assert – even, sometimes, after lots of wanderings<sup>4</sup> – the predominance of the absolute final target chord, the central chord, with its root, the central *tone*, the *tonic*, hence also often simply called *tonal* music, as opposed to *modal*.

In the meantime, popular – i.e. “non classically educated” – musicians, unaware<sup>5</sup> of the new tonal (polyphonic, harmonic and functional) music, kept on playing modal music (monophonic, without chords). New, mostly Indian and Arabic, modes also made their introduction in the Western world, brought to us mainly by travelling Gypsies.

In the 20<sup>th</sup> century, from the 1960's on, under influence of the Jazz using modern chord symbols, popular (originally monophonic) modal music was harmonized with chords<sup>6</sup>. But, using chords that are too functional – in particular *dominant*<sup>7</sup> chords – tends to disrupt the sheer *modality* of the music. To be able to establish, and to maintain, the typical color of the (of a) mode needed a new way of looking at the harmony, i.e. to strip the chords of their function. That's how the concept of *Modal Non-Functional Harmony* came into existence.

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<sup>1</sup> For those interested in Modal Jazz, I advise reading specialized books like ‘Modal Jazz Composition and Harmony – Volume 1’ by Ron Miller.

<sup>2</sup> See also Basic Concepts – Modality (page 13).

<sup>3</sup> They did of course not yet refer to themselves as *classical* composers. The label “classical” appeared only for the first time in the 19<sup>th</sup> century.

<sup>4</sup> Remember the Schönberg theory (no modulations, only modal changes).

<sup>5</sup> Or, not adherent to “*the classical school*”.

<sup>6</sup> Classical Romantic composers did actually the same, already starting in the late 19<sup>th</sup> century, though (obviously) not yet using modern (jazz) chord symbols.

<sup>7</sup> Remember how we established that functional music depends on the use of functional dominant chords in Modal Major/minor Multimodal Systems (page 206).

## Establishing the Color of a Mode

There are different factors that will contribute to the *modality*, i.e. to a clear establishment of the typical modal color. These factors will mostly be needed together, to reinforce each other.<sup>1</sup> Throughout this chapter, I'll use a little very simple tune in C Dorian – building it up following the history of modal music, first in a “medieval” kind of way, and gradually going up to a “contemporary” harmonized version – just to illustrate *how* each factor contributes to (or disrupts) the modality. The specific *non-functional* aspect of the music will become clear at the end of this chapter. Let's start with a few general advices:

1. Stay diatonic! Do not allow tonal, nor modal, changes. Once the tonic and the mode is chosen (I chose C Dorian for illustration) hold on to it ... at least long enough to establish the modality.
2. The use of triads helps a lot to *hear* the modality, though usually not to *understand* modality in depth. Try to use triads at first, and then gradually enrich the voicings of the chords.

## CHARACTERISTIC TONE

Every mode has (at least) one characteristic tone, by opposition, or in reference, to other (close) modes<sup>2</sup>. The characteristic tone(s) will mostly depend on the musical context.

In a Major/minor comparison, the Major characteristic tone is the Major 3<sup>rd</sup>, while the minor characteristic tone is, by opposition, the minor 3<sup>rd</sup>.

But, when we compare the natural modes with each other, we find other typical *modal* characteristic tones.

Major modes	Lydian	1	2	3	<b>#4</b>	5	6	7
	Ionian (= Major reference)	1	2	3	4	5	6	7
	Mixolydian	1	2	3	4	5	6	<b>b7</b>

If the Ionian mode is the Major reference, the tone that characterizes the Lydian mode must be the #4<sup>th</sup> degree, while the tone that characterizes the Mixolydian mode must be the b7<sup>th</sup> degree.

Conversely, when comparing the Ionian mode to the Lydian mode, the characteristic tone of the Ionian mode will be the natural 4<sup>th</sup> degree, while compared to the Mixolydian mode, it will be the natural 7<sup>th</sup> degree.

Generally, it is accepted as a fact that the characteristic tones for these modes, i.e. regardless of the context, are:

- Lydian:      **#4**
- Ionian:      4      (i.e. compared to the Lydian mode)
- Mixolydian:    b7

<sup>1</sup> And also, to allow variation.

<sup>2</sup> See [Characteristics of the Chord Scales](#) (page 73).

minor modes	Dorian	1	2	$\flat 3$	4	5	<b>6</b>	$\flat 7$
	Aeolian (= minor reference)	1	2	$\flat 3$	4	5	$\flat 6$	$\flat 7$
	Phrygian	1	<b><math>\flat 2</math></b>	$\flat 3$	4	5	$\flat 6$	$\flat 7$
	Locrian	1	$\flat 2$	$\flat 3$	4	<b><math>\flat 5</math></b>	$\flat 6$	$\flat 7$

If the Aeolian mode is the minor reference, the tone that characterizes the Dorian mode must be the (natural) 6<sup>th</sup> degree, while the tone that characterizes the Phrygian mode must be the  $\flat 2^{\text{nd}}$  degree.

Conversely, when comparing the Aeolian mode to the Dorian mode, the characteristic tone of the Aeolian mode will be the  $\flat 6^{\text{th}}$  degree, while compared to the Phrygian mode, it will be the (natural) 2<sup>nd</sup> degree.

The Locrian mode is the only mode with a  $\flat 5^{\text{th}}$  degree, so that must be its characteristic tone. Chords with a  $\flat 5^{\text{th}}$  degree, though, are considered unstable. They're best avoided altogether. The Locrian mode, with a m7<sup>5</sup>-chord as *tonic* chord, is therefore quite difficult to establish, and thus rarely or never used.<sup>1</sup>

Generally, it is accepted as a fact that the characteristic tones for these modes, i.e. regardless of the context, are:

- Dorian:      6
- Aeolian:       $\flat 6$       (i.e. compared to the Dorian mode)
- Phrygian:       $\flat 2$
- Locrian:       $\flat 5$

Now, we have *one* typical characteristic tone for each natural mode. That tone will obviously be an indispensable tone to use in the melody, or a *typical modal color tone* in the chords that you'll use. Remember that other tones *could* become characteristic tones when yet other comparisons than the ones described above are relevant.

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<sup>1</sup> At least as a *starting point* to compose a modal song.

## PEDAL BASS AND OSTINATO

The tonic (or root) is needed as a reference to the color of the mode (and to its characteristic tone). There's really no better way to assert that tonic than the *pedal bass*. This is a typical modal technique – an early, medieval, form of “polyphony”<sup>1</sup> – that uses the tonic as a continuous held bass tone on which the song/melody can be built, allowing us to hear the intervals created between the melodic tones and their tonic.<sup>2</sup>

Here's an example of a simple (Irish jig style) tune, in C Dorian, with a pedal bass. The A natural tone (6<sup>th</sup> degree) is the characteristic tone (Ch.T.) of the mode.

The key signature includes 3 flats, as for C minor natural (or Aeolian, the minor reference), to indicate the comparison between C Dorian and C Aeolian, highlighting the characteristic tone (as seen in the previous section).

The pedal bass can be played in a more rhythmical way, like this.

Or, to avoid a too static bass, it can be replaced by an ostinato<sup>3</sup> – often called a bass riff, or a bass vamp – like this.

Ostinato's can be found in any register of the music. It doesn't need to be played in the bass (only). The tune itself is actually an ostinato too. And other ostinatos<sup>4</sup> could yet be played by an accompanying guitar for example. Working with different layers of ostinatos is a simple form of polyphonic counterpoint.

<sup>1</sup> Real polyphony would have at least two *melodies* above each other. In this case, we only have one melody against one bass tone.

<sup>2</sup> Think of the Scottish bagpipes with their drone(s).

<sup>3</sup> Ostinato (Italian) means “obstinate”. The pattern repeats itself in an obstinate, stubborn, way.

<sup>4</sup> *Ostinati* in Italian

## MODAL PLATEAU'S

Typically, the tune will repeat itself a few times, in a vamp kind of way (ostinato), playing the same mode over and over again, so as to establish the modality unambiguously. But after a while, we surely would like some kind of variation. Here's a version with a possible variation:

The musical notation consists of two staves. The top staff is in treble clef and the bottom staff is in bass clef. Both staves are in G major (indicated by a key signature of one sharp). The top staff has three measures. The first measure contains a quarter note followed by an eighth-note pair. The second measure contains a quarter note followed by an eighth-note pair. The third measure contains a quarter note followed by an eighth-note pair. Above each of these three measures is the label "Ch.T.". The bottom staff has four measures. The first two measures contain a quarter note followed by an eighth-note pair. Above each of these two measures is the label "Ch.T.". The next two measures contain a quarter note followed by an eighth-note pair. Above each of these two measures is the label "Ch.T.".

Line 1 is the original tune, line 2 is the variation. Both parts are in C Dorian. As long as the (whole) tune stays in the same mode – like most Pop and Folk songs do – one speaks of a *linear modal* structure.

Another variation option is to allow tonal changes (new tonic) and/or modal changes (different mode), like this:

The musical notation consists of three staves. The first staff is in treble clef and the second staff is in bass clef. Both staves are in G major (indicated by a key signature of one sharp). The first staff has three measures labeled "Ch.T." above the notes. A bracket below the staff is labeled "C Dorian". The second staff has four measures. The first two measures are labeled "Ch.T." above the notes. A bracket below the staff is labeled "Bb Mixolydian". The next two measures are labeled "Ch.T." above the notes. A bracket below the staff is labeled "Ab Mixolydian". The third staff has three measures labeled "Ch.T." above the notes. A bracket below the staff is labeled "C Dorian".

Line 1 is the original tune in C Dorian. Line 2 is the variation with the first two bars in B $\flat$  Mixolydian, and the next two bars in A $\flat$  Mixolydian. Line 3 resumes the original tune.

Each modal “episode” is called a *modal plateau*. A modal plateau should always last long enough to be able to establish the modality of the new mode. Whenever a song uses different modal plateau's, like here, one speaks of a *plateau modal* structure.

Plateau modal structures are used quite a lot in Jazz. They're not typical for “popular” – in the broadest sense of the word – music that tends to use linear modal structures.

In Modal Jazz, modes sometimes alternate as fast as each bar (and even on each beat). Such a structure is then called *vertical* modal. To establish the modality in vertical modal structures – obviously a challenge when you need to do this bar per bar, or beat per beat – will require new “tools”: *typical modal voicings*.

## MODAL VOICINGS

### “Traditional Diatonic” Modal Voicings

Each mode can be considered a parent scale that generates a diatonic series of chords<sup>1</sup>, built in a piling up of thirds (*tertiary voicing*). Actually, exactly the same as we saw in Modal Major/minor Multimodal Systems (page 206). The only difference is that, in non-functional modal harmony, the generated chords are not considered functional chords (SD or D) but ...

- The first chord, (is still) the Tonic
- *Characteristic chords*, i.e. the chords that help to establish the modality
- Non-characteristic chords.

The characteristic chords are the ones that include the characteristic tone(s) of the mode. Take the C Dorian mode, with its diatonic series of chords:

- Cm7 (Im7) is the Tonic chord.
- Dm7 (IIIm7), F7 (IV7) and BbΔ (bVIIΔ) are *Characteristic chords* (Ch) because they include the characteristic tone (6<sup>th</sup> degree of the mode).
- Am7b5 (VIIm7b5) is either a characteristic chord (Ch), either to be avoided (Av) as a non-stable chord in modal cadences, because of its lowered 5<sup>th</sup>.<sup>2</sup>
- EbΔ (bIIIΔ) and Gm7 (Vm7) can be used, though they’re not characteristic chords.

We can use these chords to “harmonize” the previous C Dorian tune like this:

<sup>1</sup> ... and chord scales, though, the chord scales of the generated chords are, in this case, less relevant. What we want is to establish the modality of the *parent scale*.

<sup>2</sup> Depending on which bass tone you’ll use below it.

Am7b5/C (tonic in pedal) sounds as, or actually is, Cm6, and is a typical characteristic chord in C Dorian.

Am7b5, i.e. with A in the bass, is a non-stable chord (see the section below on Modal Cadences on page 264).

The tonic chord Cm (Im) is alternated with the *characteristic* chords B $\flat$ <sup>(Δ)</sup> (bVII<sup>Δ</sup>) and F<sup>(7)</sup> (IV7)<sup>1</sup>. The tonic though is *kept as a pedal bass* throughout the whole tune. This is indeed the best way to *hear*, and thus to establish, the modality, i.e. to keep hearing the “chords” in reference to the tonic of the mode. The “chords” that are used are in fact only new *voicings* of the same mode, or *modal voicings*, they’re not “real chords” (hence “harmonize”, between quotes, above also).<sup>2</sup>

This kind of technique – i.e. alternating the (traditional diatonic) tonic with (traditional diatonic) characteristic chords, or in better words, alternating different *voicings* of the same mode – works fine in linear and/or plateau modal structures, in which each “plateau” lasts long enough to establish the modality.

### “Typical” Modal Voicings

In *vertical* modal structures though, with different modes following each other at a very fast tempo, one needs to be able to establish the modality in just one beat, in just one voicing.

#### Tertiary Voicings

If you want the tonic chord to include the characteristic tone (the 6<sup>th</sup> degree in Dorian) using a *tertiary* voicing, you’ll need all seven tones of the mode (=> Cm7<sup>9/11/13</sup>). To lighten up the voicing, you can leave the lower chord tones (the body of the chord: 3<sup>rd</sup>, 5<sup>th</sup> and/or 7<sup>th</sup>) out, in order to maintain a hybrid chord (four-note or triad).

Or you can use the characteristic tone as a pivot tone to build chords around it (four note chords or triads in the example below, more than four-notes is an option too if you like):

The resulting chords are exactly the same<sup>3</sup> as the “traditional diatonic” modal voicings seen above. Obviously, you can play these chords in any convenient, or better sounding, inversion and tessitura you like.

#### Quartal Voicings

You can also use a *quartal* voicing, i.e. a piling up of fourths instead of thirds, around the characteristic tone. Traditional chord symbols, though, are insufficient to give the real idea of the voicing; wherever possible, I propose a (more or less) working chord symbol.

<sup>1</sup> The sevenths of the chords are included in the melody. The use of triads is typical for Pop/Folk songs. You could add the sevenths in the chords if you prefer a richer sound in the accompaniment.

<sup>2</sup> These “chords” are best seen as *auxiliary* chords. See [The Auxiliary IV-Chord](#) (page 158).

<sup>3</sup> Cm6 is the same as Am7<sup>b5</sup>/C.

Cm<sup>6</sup>/₉    Cm<sup>6</sup>/₉    Cm<sup>6</sup>/₉    Cm<sup>6</sup>/₉

Obviously, you can play these chords in any convenient, or better sounding, inversion and tessitura you like, which inevitably brings us to ...

### ***Mixed Voicings***

The chords below are exactly the same as the chords in quartal voicings above, only this time the (randomly chosen) inversions give *mixed* voicings in thirds, fourths and seconds:

Cm<sup>6</sup>/₉    Cm<sup>6</sup>/₉    Cm<sup>6</sup>/₉    Cm<sup>6</sup>/₉

You actually can build whatever mixed voicing you like, using thirds, fourths and seconds, above, around or below the characteristic tone. Ideally, the resulting voicing should include *all relevant* characteristic tones (depending on the context).

### ***Cluster Voicings***

Finally, some musicians like to use *cluster* voicings, i.e. a piling up of seconds only.

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### ***Important notes***

#### Synthetic modes:

All the modes (all the scales, parent scales and chord scales) we've seen so far, not only the natural modes but synthetic modes also, can be used as modal plateau (or modal voicing). You could be inspired to write a tune (or just a plateau) in the Melodic mode, the Harmonic mode, the Spanish Phrygian mode, the Major<sup>b6</sup> (Moll-Dür) mode, the Harmonic<sup>#4</sup> (Hungarian Gypsy) mode, the Major<sup>b2/b6</sup> (Double Harmonic) mode ... (and on any tonic you like, of course).

#### Multiple characteristic tones:

Remember that if other tones than the 6<sup>th</sup> degree (in the Dorian examples above) are also relevant characteristic tones, the modal voicings you use preferably should include them too.

For example: If you'd like to establish the *Melodic* mode, instead of the Dorian mode,

- the natural 7<sup>th</sup> degree becomes a characteristic tone too,  
i.e. in comparison to the Dorian mode (with a b7<sup>th</sup> degree).
- the 6<sup>th</sup> degree keeps being a characteristic tone too,  
i.e. in comparison to the Harmonic mode (with a b6<sup>th</sup> degree),
- and, the b3<sup>rd</sup> is the characteristic minor tone (actually the only altered degree)  
i.e. in comparison to the Ionian (or Major) mode.

All three degrees – b3, 6 and 7 – should be included in your modal voicings (depending on the relevancy of the comparisons, given the context).

#### No avoid tones:

In modal non-functional harmony, there are no avoid tones.

For example: The characteristic tone for the Ionian mode is the 4<sup>th</sup> degree.

Throughout the book, up to now, that 4<sup>th</sup> degree has always been considered an avoid tone (Av11) on the C<sup>Δ</sup> [Ion] chord. But, if you want to establish the Ionian mode in “just one” voicing, you’ll need to include that 4<sup>th</sup> degree too (e.g. C<sup>Δ</sup>sus4).

Better, if you want that tone to be heard as *the* characteristic *Ionian* tone, the Major 3<sup>rd</sup> degree will be necessary too, to hear the typical *bite* created between 3 and 4. So, you’ll end up with a voicing that includes both the 3<sup>rd</sup> and the 4<sup>th</sup> degree, something that would normally be considered “not done”.

### **Examples Mode per Mode**

For the diatonic series of chords, mode per mode, please refer to next section on Modal Cadences (page 264).

Below are possible “typical” modal voicings for each natural mode. The chord symbols are only an attempt to render the voicing, they’re open to discussion. When you write a score, and you want the voicings to be played exactly as you’ve made them up, you’ll need to write them in full detail on the staff. If you leave the choice of the voicings to the performer, a good way, though not (yet) very usual in the common practice, would be to write C Lydian (instead of C<sup>A#4</sup>), C Ionian (instead of C<sup>A11</sup>), and so on.

Lydian: typically including the characteristic tone **#4** (F#), the Major 7<sup>th</sup> (B) (relevant characteristic tone in comparison to the Lydian<sup>b7</sup> mode with a b7<sup>th</sup> degree), and the Major 3<sup>rd</sup> (E) (characteristic tone for a Major mode).

Ionian: typically including the characteristic tone **4** (F), the Major 7<sup>th</sup> (B) (relevant characteristic tone in comparison to the Mixolydian mode with a b7<sup>th</sup> degree), and the Major 3<sup>rd</sup> (E) (characteristic tone for a Major mode).

Mixolydian: typically including the characteristic tone **b7** (Bb), the perfect 4<sup>th</sup> (F) (relevant characteristic tone in comparison to the Lydian<sup>b7</sup> mode with a #4<sup>th</sup> degree), and the Major 3<sup>rd</sup> (E) (characteristic tone for a Major mode).

Dorian: typically including the characteristic tone **6** (A), the minor 7<sup>th</sup> (Bb) (relevant characteristic tone in comparison to the Melodic mode with a natural 7<sup>th</sup> degree), and the minor 3<sup>rd</sup> (Eb) (characteristic tone for a minor mode).

Aeolian: typically including the characteristic tone **b6** (Ab) *with* the 5<sup>th</sup> (G) (to hear the *bite* with b6), the Major 2<sup>nd</sup> (D) (relevant characteristic tone in comparison to the Phrygian mode with a b2<sup>nd</sup> degree), and the minor 3<sup>rd</sup> (Eb) (characteristic tone for a minor mode).

Phrygian: typically with the characteristic *chord* **bII<sup>A</sup>** (Db<sup>A</sup>) (obviously including the characteristic tone **b2** (Db). (Other comparisons are usually not, or less, relevant.)

Locrian: (rarely used) typically with the characteristic *chord* **bV<sup>A</sup>** (G<sup>bA</sup>) (obviously including the characteristic tone **b5** (G<sup>b</sup>). (Other comparisons are usually not, or less, relevant.)

## EXAMPLES OF PLATEAU AND VERTICAL MODAL STRUCTURES

### 12-bar Major Blues

The Major Blues is a modal plateau structure: every blues chord, I7, IV7 and V7, is itself a Mixolydian plateau – C Mixolydian, F Mixolydian and G Mixolydian. Remember this Blues example<sup>1</sup>:

Each *auxiliary* IV-chord (IV/I, IV/IV and IV/V) is in fact another “*traditional diatonic modal voicing*” of the Mixolydian mode. Note the pedal bass in the chord symbols for each chord (and the ostinato bass on the score) confirming that these are in fact modal plateaux.

But, the 12-bar Major Blues can of course also be seen as a *functional* song, with a dominant V7, using modal interchange chords, as we’ve seen in the previous book part.

### 12-bar minor Blues

The minor Blues is a modal plateau structure: Im7 and IVm7 are each a Dorian plateau – C Dorian and F Dorian – V7 usually is a G Mixolydian<sup>13</sup> plateau (or sometimes, with the Gm7-chord, Gm Dorian plateau too).

But, the 12-bar minor Blues can of course also be seen as a *functional* song, certainly with a dominant V7, using modal interchange chords, as we’ve seen in the previous book part.

### ‘So What’ (Miles Davis)

‘So What’ is probably the most famous Jazz example of a Dorian plateau structure: AA-parts in D Dorian, B-part (completely identical but) in E♭ Dorian, A-part (back) in D Dorian.

Remember this Jazz example<sup>2</sup>:

The *Dorian central chord* Im7 (Dm7) is alternated with its typical (auxiliary) IV-chord (G/D), though on a pedal bass, confirming that this is a modal plateau.

<sup>1</sup> See [The Auxiliary IV-Chord](#) (page 158).

<sup>2</sup> See [The Auxiliary IV-Chord](#) (page 158).

### **'Fall' (Raphaël Van Goubergen)**

Let's review<sup>1</sup> the fragments that were commented as being *non-functional vertical modal structures*. The easiest fragment, *because it uses a pedal bass*, is ...

(reminder of the previous analysis:)

Bars 49 and 50 (and 51 and 52): non-functional vertical modal structure with a pedal bass.

The tonality of C alternates Dorian, Lydian and Phrygian colors. The last C triad chord could also be the Major-I<sup>Δ</sup> [Ion] instead of the Lydian-I<sup>Δ</sup> [Lyd]. The Lydian option though, contributes to the “floating” sound of this “repeat and fade outro”.

49 | 2. E♭6/C      D7/C      D♭Δ/C      C  
 Im7 [Dor]      IΔ [Lyd]      Im7 [Phr]      IΔ [Lyd]  
 C Dor      C Lyd      C Phrygian      C Lyd

In a modal non-functional analysis, this is how it would (could) look:

<b>E♭6/C</b> Im7 C Dorian (or C Aeolian) (or C Phrygian)	<b>D7/C</b> I <sup>Δ</sup> C Lydian (or Lydian <sup>b7</sup> ) (or C Ionian)	<b>D♭Δ/C</b> Im7 C Phrygian (or C Mixolydian)	<b>C</b> I C Lydian (or C Mixolydian)
--	--	--	--

The *chord scales* and the *parent scales* on the original analysis are indeed exactly the same. There's no need to write both down.

The chord scales, the modes, are the actual parent scales.

- D♭Δ/C is a *typical* modal voicing for C Phrygian.
- E♭6/C (= actually Cm7), D7/C and C are *open* voicings, hence the multiple options.<sup>2</sup>  
If you want these voicings to be less open, you'll need to add – or replace some expendable tones by – more characteristic tones:

<b>E♭6/C</b> Dorian Aeolian Phrygian	=> add 6      (or A) => add b6      (or Ab) => add b2      (or Db)
<b>D7/C</b> Lydian Lydian <sup>b7</sup>	=> add 7      (or B) => add b7      (or Bb)
<b>C</b> Lydian Ionian Mixolydian	=> add #4 and 7      (or F# and B) => add 4 and 7      (or F and B) => add 4 and b7      (or F and Bb)

<sup>1</sup> See Analysis of a Song with (random) Modal Changes (page 244).

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<sup>2</sup> The list of possible options is not comprehensive. There are *much* more possibilities with “stranger” modes too.

The second fragment has a *moving* bass.

(*reminder of the previous analysis:*)

Bars 1 and 2: These 2 bars repeating themselves are a reminder of bars 45 and 46, but here, using only *modal voicings*. We'll learn about modal voicings, and we'll see how this can be analyzed as a *non-functional vertical modal structure*, in the next part of this book.

- Note that the dominant, with this particular voicing, analyzed here as a V7 [Alt] chord, actually *does not* include the tritone of the tonality, and is consequently non-functional.
- The Mixo $\flat^6$ - $\flat$ VII7 [Lyd $\flat^7$ ] is a SDm.

Bar 45 and 46: See bars 1 and 2. This time, the chords are not expressed in typical modal voicings, and are, as such, a lot more functional (T – SDm – SDm – D), but the chord scale options are the same (though *could* be different: e.g. B $\flat$ 7, Aeolian- $\flat$ VII7 [Mixo]).

In a modal non-functional analysis, *since the bass is moving*, this is how it would look:

<u>Bars 1 and 2</u>	D/C	E $\flat$ /F	C/B $\flat$	Db/G
<u>Bars 45 and 46</u>	C $\Delta$	Fm7	B $\flat$ 7	G7 $\sharp^9$
	C Lydian	F Dorian (or F Aeolian)	B $\flat$ Lydian $\flat^7$	G Altered (or G Dim1-1/2)

Bars 1 and 2 are *open* voicings. Bars 45 and 46, with its functional analysis, give us a clue on which *modes* (chord scales) to use:

- The combination of both D/C (bar 1) and C $\Delta$  (bar 45) give us a *very* clear idea, actually the *full* Lydian mode, for this chord. Though, separately, the voicings are still open.
- The combination of both E $\flat$ /F (bar 1) and Fm7 (bar 45) give us a *quite* clear idea of the Dorian mode, though without the characteristic tone 6, absent in both voicings, this *could* be the Aeolian mode too. Separately, the voicings are still open.
- The combination of both C/B $\flat$  (bar 2) and B $\flat$ 7 (bar 46) give us a *very* clear idea, actually the *full* Lydian $\flat^7$  mode, for this chord. Though, separately, the voicings are still open.
- The combination of both Db/G (bar 2) and G7 $\sharp^9$  (bar 46) give us a *quite* clear idea of the Altered mode, though without the characteristic tone  $\flat$ 6, absent in both voicings, this *could* be the Diminished 1-1/2 mode too. Separately, the voicings are still open.

The third fragment is similar to the previous fragment: the bass is *moving*.

(*reminder of the previous analysis:*)

Bars 37 and 38: non-functional vertical modal structure.

- A♭9 is the SubV7/V [Lyd♭⁷]. It actually *could*, stubbornly, be analyzed as the Locrian-♭VI<sup>Δ</sup> [Mixo] interchange chord.

37      Fm7      Em7<sup>b5</sup>      Ebm7      A♭9  
 IVm7      IIIm7<sup>b5</sup>      bIIIm7      SubV7/V  
 [Dor]      [Loer]      [Dor]      [Lyd b7]  
 C Aeol      C Mixo      C Loer      NPS

The chords *have no functional relation* to each other (except Ebm7 and Ab7 as a possible II-V cadence). In a modal non-functional analysis, this is how it would look:

Fm7	Em7 <sup>b5</sup>	E♭m7	A♭9
F Dorian (or F Aeolian) (or F Phrygian)	E Locrian (or E Locrian <sup>9</sup> )	E♭ Dorian (or E♭ Aeolian) (or E♭ Phrygian)	A♭ Lydian <sup>b7</sup> (or A♭ Mixolydian)

(The list of possible options is not comprehensive.) If you want these voicings to be less open, you'll need to add (or replace some expendable tones by) more characteristic tones:

Fm7	Dorian	=> add 6 (or D)
	Aeolian	=> add b6 (or Db)
	Phrygian	=> add b2 (or Gb)
Em7 <sup>b5</sup>	Locrian	=> add b2 (or F)
	Locrian <sup>9</sup>	=> add 2 (or F#)
E♭m7	Dorian	=> add 6 (or C)
	Aeolian	=> add b6 (or Cb)
	Phrygian	=> add b2 (or Fb)
A♭9	Lydian <sup>b7</sup>	=> add #4 (or D)
	Mixolydian	=> add 4 (or Db)

The last two fragments are a good illustration of the following statement:<sup>1</sup>

Chord scales are also often referred to as modes. There's a slight conceptual difference though: A **mode** is a **color** you would apply to the **parent scale**, while a **chord scale** applies **only to the chord**. Of course, when a chord is seen as an *independent tonal system* – a tonality on its own – the *chord scale is just a mode* (just a “way” of playing, just another color of the chord).

Indeed, Jazz musicians, who are accustomed to focus on *chord* scales (instead of *parent* scales), are actually always (more or less) playing *modal* (be it functional or non-functional).

<sup>1</sup> See Parent Scale and Chord Scale (page 27).

### **Improvisation Vamp**

Here's a new example, a sequence of chords without functional relation to each other, I use as improvisation vamp in a song in Fm. The tempo of the song is slow enough to establish the modes, meaning, you *could* see this fragment as a *plateau* structure, instead of a vertical structure.

E♭m9/F F Phr	Fm7 F Dor	E♭m9/F F Phr	Fm7 F Dor	B <sup>Δ</sup> /F F Locr	Fm7 F Phr	B <sup>Δ</sup> /F F Locr	Fm7 F Dor
E♭m9 E♭ Dor	Fm7 F Dor	E♭m9 E♭ Dor	Fm7 F Dor	B <sup>Δ</sup> B Lyd	E <sup>Δ</sup> E Lyd	A <sup>Δ</sup> A Lyd	D <sup>Δ</sup> D Lyd
E♭7 <sup>#</sup> 9 E♭ Alt	C7 <sup>#</sup> 9 C Alt	E♭7 <sup>#</sup> 9 E♭ Alt	C7 <sup>#</sup> 9 C Alt	Fm7 F Dor	...	Song continues in Fm	

The first line, *with a pedal bass* in F, are modal voicings for different modes of F.

The common idea for the whole line is: keep the same tonic F.

- E♭m9/F is a typical Phrygian voicing.
- Fm7 is an open voicing.  
My standard choice is the Dorian mode, though I sometimes use F Aeolian too.
- B<sup>Δ</sup>/F is a typical Locrian voicing.

The second line, *with a moving bass*, are modal voicings for different *tonics*.

The common idea for each 4 bars is: keep the same mode (Dorian first, Lydian second).

The voicings open up, providing more options, but the Dorian and Lydian options are easy sounding modes (actually, “no avoids” modes).

The third line prepares, with the E♭7<sup>#</sup>9 [Alt], to the dominant C7<sup>#</sup>9 (Harmonic-)V7 [Alt] that, at the end, resolves to the tonic Fm. The common idea is: keep the same Altered mode for these 4 bars.

Now, it's up to you to experiment on all these examples, with other, perhaps “stranger”, options too, whether or not adapting the modal voicings to your own needs.<sup>1</sup>

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<sup>1</sup> For yet more far-fetched typical Jazz vertical modal structures, I advise you to read ‘Modal Jazz Composition and Harmony – Volume 1’ by Ron Miller.

## Modal Cadences

If the bass, instead of playing a constant tonic as pedal bass, plays an ostinato bass following the (traditional) diatonic chords you'll end up (you *might* end up) with *modal cadences*.

Let's use our little, harmonized, tune in C Dorian as an example.

The tonic chord Cm (I<sup>m</sup>) is still alternated with the chords B (bVII) and F (IV)<sup>1</sup>. But since the bass is now following the chords, the song becomes ambiguous:

What is the tonic? Is the tune still in C Dorian, or is it in B Major?

- If it's still played in an “ostinato” (obstinate) way, you'll probably keep hearing it in C Dorian.
- But, if you add the 7<sup>ths</sup> to the chords – Cm7, B<sup>A</sup> and F7 – the tendency towards B Major increases. B<sup>A</sup>, though now including the *characteristic 6<sup>th</sup>* degree of C Dorian, tends to sound as I<sup>A</sup>, Cm7 tends to sound as II<sup>m</sup>7, and F7 tends to sound as V7 of B.
- And, if you change the order of the chords to Cm7 – F7 – B<sup>A</sup> – Cm7, the cadence will sound a lot as the subdominant II<sup>m</sup>7 – dominant V7 – and tonic I<sup>A</sup> confirming B as the tonic, and disrupting the original C Dorian idea.

To avoid disrupting the modality, you cannot use chords that sound too *functional*, hence *non-functional* harmony.

- You'll either use triads only (typical “Pop”), in which case you can never have a *full dominant chord* (i.e. including the – or a – tritone). This technique though is still not a guarantee to establish the modality. Usually, the result is (or can be) still ambiguous.
- Or, you'll need to use *typical modal cadences* (often with very few chords) that keep the modality intact, without tending towards another tonic. There are, of course, “disrupting” cadences to avoid too.

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<sup>1</sup> The sevenths of the chords are included in the melody. The use of triads is typical for Pop/Folk songs. You could add the sevenths in the chords if you prefer a richer sound in the accompaniment.

# Typical Modal Cadences

**Reminder:**

- Chords that include the characteristic tone of the mode are characteristic chords (Ch).
  - Chords with a  $\flat 5^{\text{th}}$  are best avoided (Av) – even if including the characteristic tone – because of their instability (due to the tritone from root to  $\flat 5^{\text{th}}$ ).
  - You can use triads or four-note chords (or more).  
But, always be aware if the chord (still) includes the characteristic tone.
  - Non-characteristic chords are of course available too, if you like.
  - The list of typical cadences below is not comprehensive. Be creative.

## *Lydian mode*

C <sup>A</sup>	D7	Em7	F#m7 <b>b5</b>	G <sup>A</sup>	Am7	Bm7
I <sup>A</sup>	II7	IIIm7	IVm7 <b>b5</b>	V <sup>A</sup>	VIIm7	VIIIm7
T	Ch		Av	Ch		Ch

Characteristic tone: #4

### Typical cadences:

I	IIIIm	II	I
I <sup>A</sup>	I <sup>A</sup>	VIIIm7	VIIIm7
I <sup>A</sup>	IIIIm9	IIIIm9	I <sup>A</sup>
I <sup>A</sup>	IIIIm7 VIIm7	I <sup>A</sup>	VIIIm7

### Cadences to avoid:

$V^\Delta - I^\Delta$	tends to sound like $I^\Delta - IV^\Delta$	in G Major: $G^\Delta - C^\Delta$
$II7 - V^\Delta$	tends to sound like $V7 - I^\Delta$	in G Major: $D7 - G^\Delta$

Examples:

‘I Can’t Make You Love Me’ written by Mike Reid and Allen Shamblin (recorded by Bonnie Raitt) is a superb example of a Lydian Pop song.

## *Ionian mode*

C <sup>Δ</sup>	Dm7	Em7	F <sup>Δ</sup>	G7	Am7	Bm7 <sup>♭5</sup>
I <sup>Δ</sup>	IIIm7	IIIIm7	IV <sup>Δ</sup>	V7	VIIm7	VIIIm7 <sup>♭5</sup>
T	Ch		Ch	Ch		Av

Characteristic tone(s): 4 (compared to Lydian – and 7, compared to Mixolydian)

The Ionian mode *is* the Major mode. It'll always sound like "regular" Major music.

There is, however, a remarkable fact to note from a *functional* point of view:  
The fact that 4 and 7 (the tritone) are the characteristic tones of the Ionian mode is in itself the actual fundament of Major *functional* harmony.

And there is, conversely, a remarkable fact to note from a *modal non-functional* point of view:  
The typical common Pop practice of writing Major songs with the V triad chord (G), i.e.  
*without* its 7<sup>th</sup> (not the *dominant* V7, or G7), is a typical *modal* and *non-functional* practice.

Most Pop songs<sup>1</sup> are indeed on this thin line between “regular functional tonal” and/or still “non-functional modal”. That is because most Pop songs use only *diatonic triad* chords.<sup>2</sup>

I often submit my younger students – who are usually very, and only, influenced by Pop music – to this little interesting test. Take any Major Pop song using a V triad chord. Change the triad V to the four-note dominant V7 chord, and watch the reaction of the students. They’re pulling their noses at that 7<sup>th</sup>. They find that it sounds “strange”, or “inappropriate”.

And, I often find myself too preferring the sound of a Pop song *without* the dominant V7, but with the triad V instead. That is because chords that sound too *functional* disrupt the *modality* of the song. These Pop songs are best described as *modal non-functional* songs in C Ionian (or Major, if you like), and not as *tonal functional* songs in C Major. The difference being very, very, thin indeed.

#### Typical cadences:

I	V	VI <sup>m</sup>	IV	“4-chord song” <sup>3</sup>
I	VI <sup>m</sup>	IV	V	typical 60's and 70's
I <sup>Δ</sup>	I <sup>Δ</sup>	IV <sup>Δ</sup>	IV <sup>Δ</sup>	

... too many cadences to list (see examples below).

#### Cadences to avoid:

There are no cadences to avoid. VII<sup>m</sup>7<sup>b5</sup><sup>5</sup> is (still) an avoid chord (which is no surprise).

#### Examples:

Most Major Pop songs.

<sup>1</sup> Especially since the 1980's to the present.

<sup>2</sup> Or, also typical Pop, add2-chords, and even the *typical modal* I<sup>add4</sup>-chord (C<sup>add4</sup>).

<sup>3</sup> The “4-chord song” is a “concept” made famous by the Australian comedy group ‘Axis Of Awesome’ on YouTube in 2009. The 4-chord song (and the “reversed” minor variant, VI<sup>m</sup> – IV – I – V or Im – ♭VI – ♭III – ♭VII. See the Aeolian mode) is the most used chord progression for Pop songs at the moment I write this book. One, out of two Pop songs (or perhaps three?) aired on the radio's is such a 4-chord song. It's used to such a surreal extent that it has become “downright indigestible” and “plainly boring”, in my humble opinion. We'd certainly like Pop writers to come up with a little more creativity and adventure in their songs.

***Mixolydian mode***

C7      Dm7      Em $7^{\flat 5}$       F $\Delta$       Gm7      Am7      B $b\Delta$   
 I $7$       II $m7$       III $Im7^{\flat 5}$       IV $\Delta$       V $m7$       VI $Im7$        $bVII^{\Delta}$   
 T      Av      Ch      Ch

Characteristic tone:  $\flat 7$  (compared to Ionian – and 4, compared to Lydian $^{\flat 7}$ )

Typical cadences:

|| I $7$       | V $m7$       | I $7$       | V $m7$       ||  
 || I $7$       |  $bVII^{\Delta}$       | I $7$       |  $bVII^{\Delta}$       ||

Cadences to avoid:

- |                     |  |   |
|---------------------|--|---|
| I $7$ – IV $\Delta$ | tends to sound like V $7$ – I $\Delta$ | in F Major: C $7$ – F $\Delta$                |
| I $7$ – VI $Im7$    | tends to sound like V $7$ – III $m7$   | in F Major: C $7$ – Am $7$ (= SubT $^1$ of F) |
| I $7$ – II $m7$     | tends to sound like V $7$ – VI $Im7$   | in F Major: C $7$ – Dm $7$ (= SubT $^2$ of F) |

Examples:

Lots of 60's and 70's Major bluesy Pop, Rock, Soul, Funk ... songs.

***Dorian mode***

Cm7      Dm7      Eb $\Delta$       F7      Gm7      Am $7^{\flat 5}$       B $b\Delta$   
 I $m7$       II $m7$        $bIII^{\Delta}$       IV $7$       V $m7$       VI $Im7^{\flat 5}$        $bVII^{\Delta}$   
 T      Ch      Ch      Ch      Av      Ch

Characteristic tone: 6

Typical cadences:

	Im $7$	IV $7$	Im $7$	IV $7$	
	Im $7$	II $m7$	Im $7$	II $m7$	
	Im $7$	$bVII^{\Delta}$	Im $7$	$bVII^{\Delta}$	

Cadences to avoid:

- IV $7$  –  $bVII^{\Delta}$     tends to sound like V $7$  – I $\Delta$     in B $b$  Major: F $7$  – B $b\Delta$

Examples:

Lots of 60's and 70's minor bluesy Pop, Rock, Soul, Funk, Latin ... songs.

<sup>1</sup> Substitution Tonic II $m7$  chord of F $\Delta$  in F Major.

<sup>2</sup> Substitution Tonic VI $Im7$  chord of F $\Delta$  in F Major.

***Aeolian mode***

Cm7    Dm7<sup>b5</sup>    Eb<sup>A</sup>    Fm7    Gm7    Ab<sup>A</sup>    Bb7  
 IIm7    IIIm7<sup>b5</sup>    bIII<sup>A</sup>    IVm7    Vm7    bVI<sup>A</sup>    bVII7  
 T              Av              Ch              Ch              Ch              Ch

Characteristic tone:  $\flat 6$ Typical cadences:

Im	$\flat VII$	$\flat VI$	Im	$\flat VII$	$\flat VI$	
Im	$\flat VI$	$\flat VII$	Im	$\flat VI$	$\flat VII$	
Vm	IVm		Im	Im		end of phrase for 'Ain't No Sunshine' (Bill Withers) <sup>1</sup>
Im	$\flat VI$		$\flat III$	$\flat VII$		Ambiguous! But typical. <sup>2</sup>

... too many cadences to list (see examples below).

Cadences to avoid:

- $\flat VII7 - \flat III^A$  tends to sound like  $V7 - I^A$
- $\flat VII7 - Vm7$  tends to sound like  $V7 - IIIIm7$
- $\flat VII7 - Im7$  tends to sound like  $V7 - VIIm7$
- $IVm7 - \flat VII7$  tends to sound like  $IIIm7 - V7$
- $\flat VI^A - \flat III^A$  tends to sound like  $IV^A - I^A$

- in E $\flat$  Major:  $B\flat 7 - Eb^A$
- in E $\flat$  Major:  $B\flat 7 - Gm7$  (= SubT<sup>3</sup> of E $\flat$ )
- in E $\flat$  Major:  $B\flat 7 - Cm7$  (= SubT<sup>4</sup> of E $\flat$ )
- in E $\flat$  Major:  $Fm7 - B\flat 7$
- in E $\flat$  Major:  $Ab^A - Eb^A$

Examples:Most minor Pop songs without the (Harmonic or Melodic) dominant V7 chord.<sup>1</sup> See Common minor Cadences (page 189).<sup>2</sup> See 4-chord song in the subsection on the Ionian mode above.  
This cadence tends to sound in E $\flat$  Major instead of in C Aeolian (or minor).<sup>3</sup> Substitution Tonic IIIm7 chord of E $\flat$ <sup>A</sup> in E $\flat$  Major.<sup>4</sup> Substitution Tonic VIIm7 chord of E $\flat$ <sup>A</sup> in E $\flat$  Major.

### ***Phrygian mode***

Cm7      Db $\Delta$       Eb7      Fm7      Gm7 $^5$       Ab $\Delta$       Bbm7  
 IIm7      bII $\Delta$       bIII7      IVm7      Vm7 $^5$       bVI $\Delta$       bVIIIm7  
 T            Ch            Ch            Av            Ch

Characteristic tone: b2

Typical cadences:

	IIm7	bII $\Delta$	IIm7	bII $\Delta$	
	IIm7	bVIIIm7	IIm7	bVIIIm7	
	Im	IVm7      bII $\Delta$	Im	IVm7      bII $\Delta$	

Cadences to avoid:

- |                             |  |   |
|-----------------------------|--|---|
| bIII7 – IIm7                | tends to sound like V7 – IIIIm7              | in A $\flat$ Major: Eb7 – Cm7 (= SubT <sup>1</sup> of A $\flat$ ) |
| bIII7 – Vm7                 | tends to sound like V7 – VIIm7               | in A $\flat$ Major: Eb7 – Fm7 (= SubT <sup>2</sup> of A $\flat$ ) |
| bIII7 – bVI $\Delta$        | tends to sound like V7 – I $\Delta$          | in A $\flat$ Major: Eb7 – Ab $\Delta$                             |
| bII $\Delta$ – bVI $\Delta$ | tends to sound like IV $\Delta$ – I $\Delta$ | in A $\flat$ Major: Db $\Delta$ – Ab $\Delta$                     |
| bVIIIm7 – bIII7             | tends to sound like IIIm7 – V7               | in A $\flat$ Major: Bbm7 – Eb7                                    |

Examples:

There are not that many examples of typical famous Phrygian songs. There is however this very famous *Spanish* Phrygian example, using the Phrygian characteristic chords bII and bIII, and the typical *Spanish I Major* triad tonic chord.

|| I      | I      | bII      | bIII      bII      ||

### ***Locrian mode***

The Locrian mode, with its IIm7 $^5$  tonic chord, is never used as a stable mode to write a song.

#### ***Note***

It might have occurred to you that most examples of songs using modal cadences – *linear* modal structures – are Pop songs, not Jazz songs. Jazz composers, indeed, are more inclined to use plateau modal or vertical modal structures, not modal cadences.

<sup>1</sup> Substitution Tonic IIIm7 chord of Ab $\Delta$  in A $\flat$  Major.

<sup>2</sup> Substitution Tonic VIIm7 chord of Ab $\Delta$  in A $\flat$  Major.



# CONCLUSION

My intention with this book was to open up your mind and ears to all the beautiful possibilities of the tonal – as opposed to a-tonal – harmonic system. And there are actually quite a lot of possibilities, everything seems possible! True. But ...

You'll always need to be very much aware of the horizontal context (the parent scales) and of the vertical context (the chord scales) to be able to write music (or improvise music) that "works".

And, if everything is possible, music can also become really "sophisticated". You'll always have to be very much aware on how sophisticated you want your music to be. The more complicated your music gets, the more difficult it will be for your audience to listen to it. That could be your purpose, or not.

On the other hand, you might not want your music to sound "too easy" either. The music we hear the most on radio and internet – in all styles<sup>1</sup>, especially since the 1980's – seem to have become a lot more "easy-listening" than it used to be, mostly due to the democratization of commercial music production, but also under influence of minimalism. The great idea about minimalism was originally "less is more". It seems to have been gradually diverted to "less is less". It shouldn't become "less is pointless, but it sells", hopefully.

I hope this book will accompany you<sup>2</sup> on your musical journey and experiments. There is still a lot more to discover though. I advise you to read other books too. Below is a list of the books that have been my sources, up to now. I too will now, happily, read new books.

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<sup>1</sup> Acid Jazz, Nu Jazz, Classical "minimalists" and Pop music in general.

<sup>2</sup> This book was also designed as a handbook that you can consult at any time when you feel the need to refresh specific topics.

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And, of course also ...

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## About the author

Raph Van Goubergen (14<sup>th</sup> of April 1962) has been teaching piano, singing, ensemble, ear training, rhythm, music theory and jazz harmony, improvisation, composition, and musical genres since 1983. From 1987 he taught in the *Gemeentelijke Muziekschool Kampenhout*, where he was pedagogical, artistic and administrative director. He also was a teacher at rock, pop and jazz summer workshops for youngsters (*Jeugd & Muziek Brussel*). In 2009 he created, together with guitarist Michel Kuijken, the *Class & Jazz Alternatieve Muziekschool*, a new project that strives to offer qualitative music teaching in all styles.

A lot of his students became professional musicians in both classical and jazz music:  
John Gevaert (Classical Piano at the Royal Conservatories of Antwerp and Amsterdam – Queen Elisabeth Competition for Piano, selection 2010), Elodie ELLO Carels (Jazz Singing at the Royal Conservatory of Ghent), Joke Boon-Lopez (Latin/Salsa Piano at the Conservatory of Rotterdam), Eva Tulkens (Jazz Singing at the Royal Conservatory of Antwerp), Eva Trappeniers (Jazz Singing) ...

Raph first learned the piano with his father, August Van Goubergen, at the age of 8. He later attended music theory and piano courses in his hometown, Kampenhout, in Brussels and in Leuven. He developed a preference for jazz and blues under the influence of both his father and his uncle, Willy Van Goubergen. From childhood on, he also was a singer and a guitarist. He had his first jazz harmony lessons at the age of 20 with Pierre Van Dormael, a material he developed self-taught, and permanently keeps developing, by studying the masters (See Sources above).

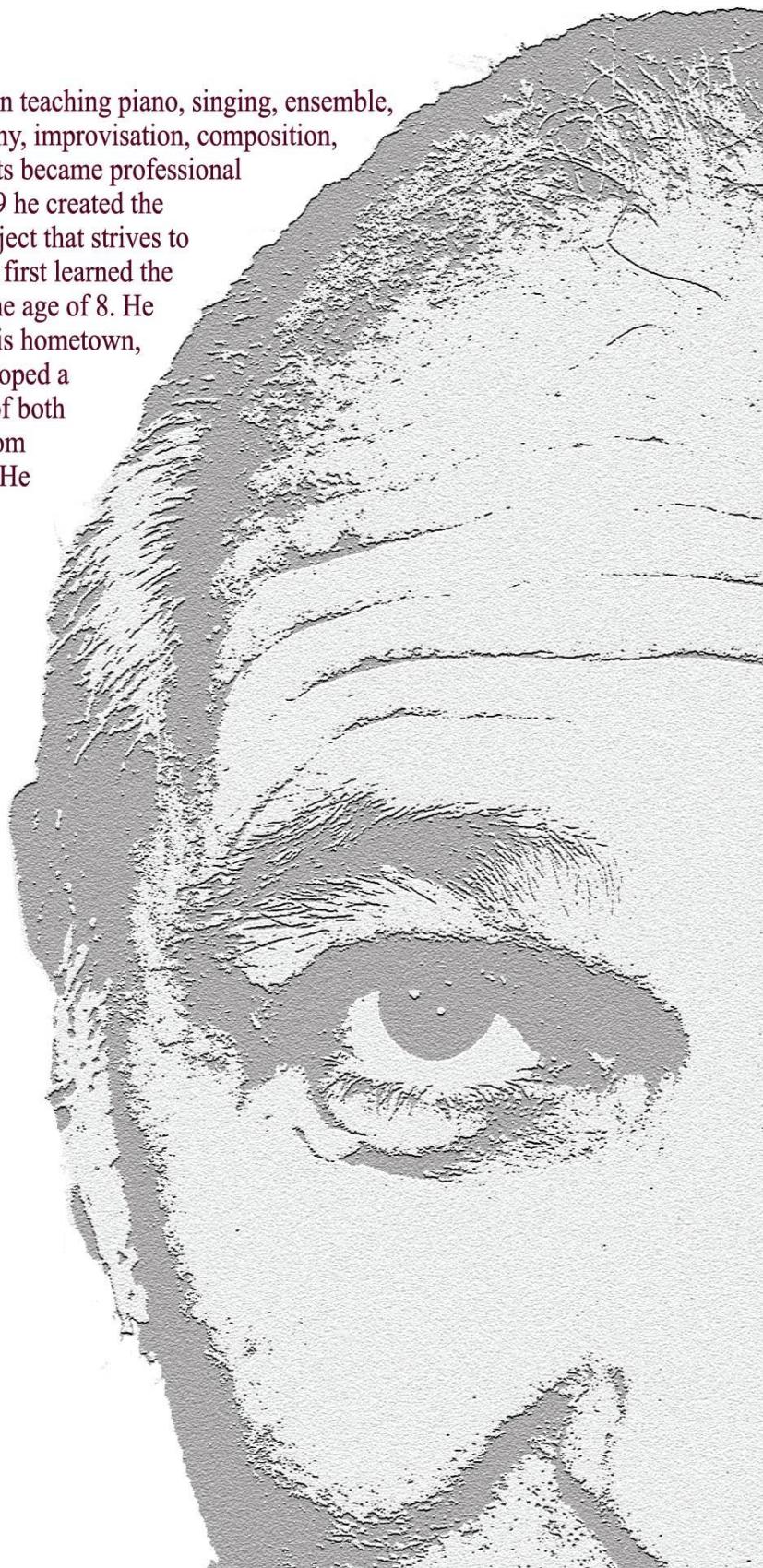
He was 14 years old when he started performing on stage. He did his first recording at the age of 19 with his band PSOPHO. He never stopped performing and recording with all sorts of bands including, amongst others: Feso Trombone (aka Fesobi Olawaiye) & The Demo-Crazy, Calvin Owens Blues Orchestra, Blue Blot, Jean-Bosco Safari, Blanc Marié, Someone Els, Masala ... Most of these projects involved Raph as pianist, keyboard player and backing vocalist, but often also in the role of composer, arranger and musical director. He also played the piano in the theatre, with the *Belgische Improvisatie Liga*, with Rob Van Oudenhoven and Max Thyssen. He is a member of SABAM (Belgian authors and composers union) since 1980. Masala is currently his main band.

## About the book

The intention of this book is to open up your mind and ears to all the beautiful possibilities of the tonal (as opposed to a-tonal) harmonic system. It reveals all the secrets of music analysis (tonality, chords and modes), and proposes a Jazz analysis method that combines both a vertical analysis of music (a typical “Jazz” way of thinking) based on modern chord symbols, further developed as the chord scale approach – and (only a basic) horizontal analysis (a typical “Classical” way of thinking), further developed as the parent scale approach. All musicians, Jazz and Pop musicians, but young Classical musicians too, have a lot to gain in knowing the Jazz Harmony, obviously for composition, arranging and improvisation purposes, but also to understand the music they’re playing, facilitating the memory, the technique and the performing.

## About the author

Raph Van Goubergen (14th of April 1962) has been teaching piano, singing, ensemble, ear training, rhythm, music theory and jazz harmony, improvisation, composition, and musical genres since 1983. A lot of his students became professional musicians in both classical and jazz music. In 2009 he created the Class & Jazz Alternative Music School, a new project that strives to offer qualitative music teaching in all styles. Raph first learned the piano with his father, August Van Goubergen, at the age of 8. He later attended music theory and piano courses in his hometown, Kampenhout, in Brussels and in Leuven. He developed a preference for jazz and blues under the influence of both his father and his uncle, Willy Van Goubergen. From childhood on, he also was a singer and a guitarist. He had his first jazz harmony lessons at the age of 20 with Pierre Van Dormael, a material he developed self-taught, and permanently keeps developing, by studying the masters.. He was 14 years old when he started performing on stage. He did his first recording at the age of 19. Most of the bands he played with involved Raph as pianist, keyboard player and backing vocalist, but often also in the role of composer, arranger and musical director.



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