

Jazz Harmony

PARENT SCALES and CHORD SCALES

Horizontal and Vertical Analysis for Composition and Improvisation

by Raphaël Van Goubergen

revised edition 2021

For Jazz,
Classical
and Pop
musicians

CLASS & JAZZ
publications



Jazz Harmony

PARENT SCALES and CHORD SCALES

Horizontal and Vertical Analysis for Composition and Improvisation

revised edition 2021

by Raphaël Van Goubergen

For Jazz, Classical and Pop musicians



Cover Design: Ingrid Fonteyne, Régine Bréeur
Cover Photo: Marie-Jeanne Vekemans

© 2013 by Raphaël Van Goubergen (SABAM) – all rights reserved (3rd edition – 2020)

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission of the author. International copyright secured.



www.classandjazz.be

STUDIO BIRDLAND, Langestraat 78 - 1910 Kampenhout, BELGIUM
+32(0)486/11.95.66 (Mobile) - +32(0)16/65.11.79 (Home) - info@classandjazz.be

ISBN 978-9-08240-436-4
D/2021/Raphaël Van Goubergen, publisher

INDEX

Blue text below, as well as throughout the book, are active links.
Just click on the links to go to the topic.

INTRODUCTION.....	7
<i>For Jazz, Classical and Pop musicians</i>	7
<i>Acknowledgements</i>	8
<i>How to Understand Harmony.....</i>	9
CONCEPTS NEEDED	11
BASIC CONCEPTS	11
CONCEPTS IN THIS BOOK.....	15
<i>12-Tone Tonality</i>	15
<i>Harmonic Series.....</i>	18
<i>Tonal Degrees and Modal Degrees.....</i>	21
<i>Functions of the 12 Tones in the Tonality.....</i>	23
<i>Modality.....</i>	25
<i>Parent Scale and Chord Scale.....</i>	26
BASIC KNOWLEDGE	28
THE MAJOR SCALE	28
<i>Intervals in the Major scale</i>	29
<i>Circle of Fifths.....</i>	32
<i>Relation between Major and minor Scales</i>	37
THE MINOR SCALES.....	38
<i>The Natural minor scale</i>	38
<i>The Harmonic minor scale</i>	39
<i>The Melodic minor scale</i>	41
<i>Relative minor Scales in the Circle of Fifths</i>	43
PENTATONIC SCALES	44
<i>The Major and minor Pentatonic Scales</i>	44
<i>Blues Scales.....</i>	45
CHORDS	46
<i>Building Chords.....</i>	46
<i>Structure of a Chord</i>	47
<i>Chord Symbols.....</i>	48
<i>Chord Scale</i>	52
MAJOR FUNCTIONAL HARMONY	53
THE MAJOR PARENT SCALE.....	53
<i>Series of Diatonic Chords in Major.....</i>	53
<i>Harmonic Functions of the Chords</i>	54
<i>Major Functional Cadences</i>	58
<i>Analysis of a Song in Major</i>	63
<i>Modulation to Other Keys</i>	67
CHORD SCALES IN MAJOR.....	71
<i>Characteristics of the Chord Scales</i>	72
<i>Parent Scales and Chord Scales in Analysis</i>	74
<i>Analysis of a minor Song in its Relative Major Key</i>	76
<i>Remembering the Chord Scales.....</i>	78
<i>Mastering the Chord Scales</i>	81
USING THE PENTATONIC SCALES	87
<i>Replacing the Chord Scales by Pentatonic Scales</i>	87
<i>Displacing Pentatonic Scales</i>	87
A SHORT-CUT TO THE BLUES.....	91
BLUES CHORDS AND BLUES SCALE.....	91

BLUES STRUCTURE	92
IMPROVISING ON BLUES	93
<i>Traditional Blues</i>	93
<i>Blues “Chord Scales”</i>	94
TONAL CHANGES.....	96
SECONDARY V7 DOMINANT CHORDS	96
<i>Chord Scales for Secondary Dominants</i>	97
<i>Parent Scales for Secondary Dominants</i>	98
<i>Extended Dominants</i>	100
<i>Tonal Changes on Diatonic Chords</i>	102
<i>Analysis with Secondary Dominants</i>	108
RELATIVE-II CHORDS AND SECONDARY II-V CADENCES	111
<i>Double Function of Relative-II Chords</i>	111
<i>The minor II^{m7^{b5}}-V7 Cadence</i>	111
<i>List of Secondary II-V Cadences</i>	112
<i>Chord Scales and Parent Scales for Relative-II Chords</i>	113
<i>Extended II-V Cadences</i>	116
<i>Contiguous II-V Cadences</i>	117
<i>Analysis with Secondary II-V Cadences</i>	118
DOMINANT CHORD SCALES.....	122
THE EIGHT DOMINANT CHORD SCALES	122
<i>Characteristics of Dominant V7 Chords</i>	122
<i>List of Dominant Chord Scales</i>	123
<i>The Four “Basic” Dominants</i>	124
<i>The Four “Lydian” Dominants</i>	125
<i>Modal Changes on Dominant Chords</i>	129
SUBSTITUTION DOMINANTS	130
<i>Tritone Substitution</i>	130
<i>Chord Scales for SubV7 Chords</i>	131
<i>Sub-Cadences</i>	134
<i>Extended II-V Cadences with Sub-Cadences</i>	136
<i>Analysis with Sub Cadences</i>	139
DOMINANT STRUCTURES TO DIATONIC CHORDS OF C MAJOR.....	141
APPROACH CHORDS AND AUXILIARY CHORDS	142
DIMINISHED CHORDS	142
<i>The Upward Diminished Chord</i>	142
<i>Chord Scales for Diminished Chords</i>	144
<i>The Downward Diminished Approach Chord</i>	147
<i>The Static Diminished Auxiliary Chord</i>	150
<i>Multiple Semitone Resolutions of Diminished Chords</i>	151
OTHER APPROACH OR AUXILIARY CHORDS	152
<i>Parallel Harmony</i>	152
<i>The Auxiliary IV-Chord</i>	153
MORE ABOUT THE BLUES.....	156
<i>Blues with Secondary Dominants</i>	156
<i>Blues with Secondary II-V Cadences</i>	157
<i>Blues with Substitution Dominants</i>	158
<i>Blues with Diminished Chords</i>	158
<i>“Swedish Blues” or “Bird Changes”</i>	159
MINOR FUNCTIONAL HARMONY	161
THE NATURAL MINOR PARENT SCALE	161
<i>Series of Diatonic Chords in Natural minor</i>	161
<i>Harmonic Functions of the Chords</i>	162
<i>The Chord Scales in Natural minor</i>	163
THE HARMONIC MINOR PARENT SCALE	164

<i>Series of Diatonic Chords in Harmonic minor</i>	165
THE MELODIC MINOR PARENT SCALE.....	170
<i>Series of Diatonic Chords in Melodic minor</i>	170
THE DORIAN MINOR PARENT SCALE	174
<i>Series of Diatonic Chords in Dorian minor</i>	174
THE MINOR TONALITY AS MULTIMODAL SYSTEM.....	176
<i>Line-Clichés</i>	177
<i>Common minor Cadences</i>	179
<i>Analysis in minor</i>	182
MODAL CHANGES.....	186
BRIGHTNESS OF THE MODES	186
THE MAJOR ^{b6} PARENT SCALE.....	186
<i>Origins of the Major^{b6} mode</i>	186
<i>Main Major^{b6} Chords</i>	187
<i>Major Multimodal System</i>	190
MODAL INTERCHANGE.....	190
<i>Major/minor Multimodal System</i>	191
<i>Determining the Parent Scale for Modal Interchanges</i>	192
<i>Analysis with Modal Interchanges</i>	198
A MODAL APPROACH TO THE BLUES	202
<i>Major Blues</i>	202
<i>minor Blues</i>	204
<i>Modal Analysis of Blues</i>	206
AVOID THE AVOIDS.....	209
MINOR SUB-DOMINANTS (SDM)	210
<i>In Between Major and minor</i>	210
<i>In Between minor and Major</i>	212
<i>In Between minor and “Yet More minor”</i>	212
CHROMATICALLY ALTERED SUB-DOMINANTS	214
<i>Analysis with (random) Modal Changes</i>	217
MODAL NON-FUNCTIONAL HARMONY	221
WHAT IS MODAL MUSIC?	221
ESTABLISHING THE COLOR OF A MODE.....	221
<i>Characteristic Tone</i>	222
<i>Pedal Bass and Ostinato</i>	223
<i>Modal Plateau’s</i>	224
<i>Modal Voicings</i>	225
<i>Examples of Plateau and Vertical Modal Structures</i>	228
<i>Analysis in Modal Non-Functional</i>	232
MODAL CADENCES	234
CONCLUSION.....	239
SOURCES	240

INTRODUCTION

FOR JAZZ, CLASSICAL AND POP MUSICIANS

I learned to play with chord symbols when I was thirteen years old, in the 1970s, first on guitar, and then on piano. The knowledge of chord symbols was then something that was passed on orally between pop¹ and jazz musicians. Our Belgian music schools were not into it, because "entertainment" music did not belong on the program of "serious" classical music.²

In the early 1980s, I discovered the Jazz Harmony at a summer workshop organized by a Brussels music store. Again, because it was not possible to learn this in regular music schools at that time. In all of Belgium, this course was offered by only one private school (admittedly on the premises of the official classical Conservatoire Royal de Liège). Unfortunately, too far and too expensive for me.

Since the 1990s, official "Jazz and Pop Music" departments have been created in Belgian music schools. But I'm still surprised that the two styles – classical and jazz – are still taught in segregated departments, as if they represent two completely different worlds. Classical students still know nothing about chord symbols and jazz harmony, and jazz and pop musicians know little about classical theory or harmony. Gradually, this "apartheid" is eroding, but we have not yet reached the point where both schools of style willingly complement each other through cross-pollination.

The method of analysis proposed in this book combines the *vertical* analysis taught in jazz schools – the **chord scale theory** based on chord symbols – with a more classical *horizontal* analysis – the **parent scale theory** (or in more classical terms, the theory of keys and modulations).

In my exploration about jazz harmony – reading many books and having many conversations with jazz musicians – I always remain frustrated, with questions still unanswered. And this is always due to a lack of thoughtful horizontal coherence of the harmony.

But equally, the basic classical theory taught in schools is limited to only four scales³ and three/four chord types⁴. At a higher level (only for those who persevere), in classical harmony and analysis, one quickly drowns in modulations, in voicing, in stylism and in counterpoint. Too little attention is given to a vertical analysis that allows us to understand the music in a simple way, to read and remember it better, and to play it more easily. Jazz harmony can be perfectly, and very easily, applied to (most of) the classical repertoire.

This book tries to give an incentive to the *necessary cross-fertilization* of these two different views on harmony.

Readers who have little or no experience with chords can also, and best first, read my book [Playing the piano with chords – Note reading for pianists](#).

¹ 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.

² The Boston College of Music was by then compiling and publishing the first Real Book.

³ Major, natural minor, harmonic and melodic.

⁴ Major, minor and dominant seventh (and diminished seventh).

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](#) 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**.

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*¹ 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 (pop) 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.

Experienced composers, and improvisers (“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 other books, with new insights from other authors. 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. To do so, I need to build a strict logic on known and (at the beginning) rather rigid principles, from which all the possibilities of harmony will gradually emerge. 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.

For beginners, it is probably best to start with the chapter on [Basic Knowledge](#), and then go back to the chapter on [Concepts Needed](#).

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.

¹ 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*.

In short:

- 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. 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. 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. In *intensity*, or *loudness*. This ingredient is all about dynamics and interpretation.
4. 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

It is necessary to give a clear definition of the concepts used in this book. Because the different "schools" – classical, jazz or pop, but also American and European schools – often use similar terms to describe different things, or sometimes different words that actually mean the same thing.¹

Basic Concepts

Relative and Absolute Tone Names

Latin languages – French, Italian, Spanish ... – use the **relative** tone names to designate absolute tones (see further). This is called 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 ²
---	---	---	---	---	---	----------------

Absolute tone names (C, D, E ...) designate tones at a fixed frequency (i.e., A = 440 hertz³), while **relative tone names** (Do, Re, Mi ...) *should* designate the *degrees of the Major scale* in singing exercises, *whatever the first absolute tone is*, called the “movable Do” system.⁴

But to designate these *degrees of the Major scale*, in jazz, one simply uses degree numerals, as used in this book.⁵

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

¹ Having had a linguist education (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.

² 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).

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

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

⁵ See further [Scale and Scale Degrees](#) on the next page.

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**.

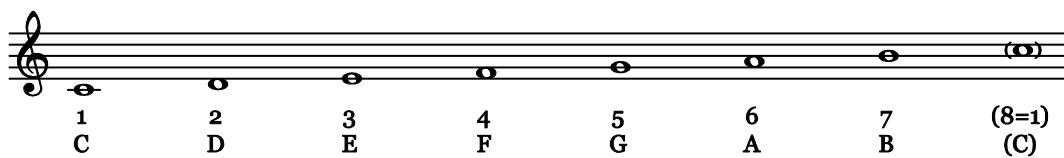
In the Middle Ages, that central tone was called the *finalis*, which means the *ending tone*. Today one usually calls it the **tonic**. In this book, I will often use the term *central tone*.

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*¹ end with the *finalis*.

Scale and Scale Degrees

Every tonal song revolves around only one² central tone. All the other tones used in the song function as “satellites” around this central tone. These tones are ordered hierarchically in tonal systems of (mostly) seven tones, with, for every tone used, a specific function *in regard to the central tone*.

These tonal systems are called *scales*, when ordered in a scaled way (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 (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.

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

² 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 17th 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 modes¹. 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.) starts 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 is (was) supposed to end as it begins, in C Major.

Note that, even when music modulates, the first and last central tone is then still 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* (or **Major-minor Tonality**), as opposed to the *modal music* (or **modality**) mentioned above. We'll see that the term **Functional Music** is probably better fit to describe this way of composing.

¹ The Major mode is 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](#).

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 in a song. This term *key* comes from “*with respect to the key signature*”, and refers to written music. See the little boxes on the score below, these are *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

In the 19th century, classical composers 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 independent tonal systems on their own with their own “modes” (or **chord scales**), inside a bigger tonal system that still dominates 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 “strictly” **tonal** (in Major-minor *Tonality*), or “strictly” **modal** (in *modality*). This is the reason why today we need to redefine these concepts.

Concepts in this Book

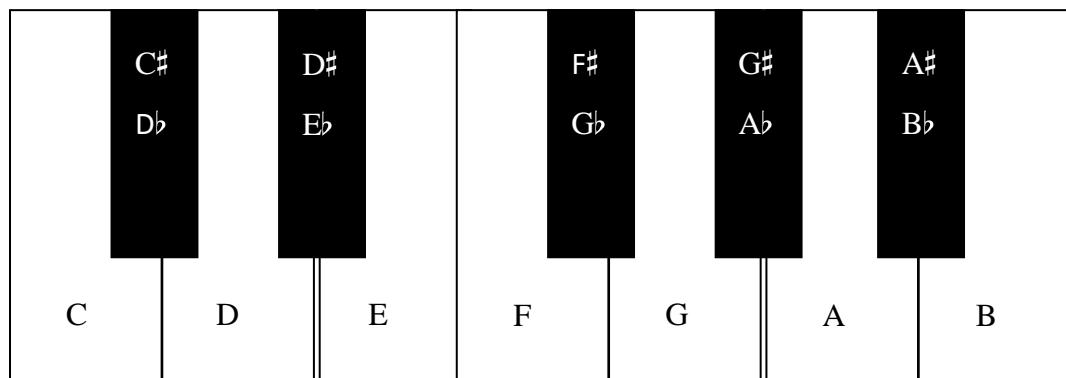
Concepts like *tonal*, *modal*, and *functional* have become complex and fraught over the centuries, and they can mean different things depending on the school of style (classical or jazz) that uses them. Part of the problem is that these concepts are often presented as opposites when in fact they permanently overlap. Let us therefore redefine the three concepts in simple and useful terms.

- **Tonality:** music that revolves around only one ¹ central **tone**. ²
- **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. ³

Though some of these definitions might sound incomplete to some (experienced and critical) 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 ⁴, but in which only one – let's take the first one C – is the central tone; a “super-scale” if you want.

¹ Not considering possible modulations.

² As opposed to *a-tonal*: *without* central tone.

³ See [Harmonic Functions of the Chords](#).

⁴ 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.

The image shows two musical staves side-by-side. The left staff is labeled "C (Major)" and the right staff is labeled "c (minor natural)". Both staves use a treble clef and have seven notes each. Below each staff is a Roman numeral analysis: I, II, III, IV, V, VI, VII for the major scale, and i, ii, iii, iv, v, vi, vii for the minor scale. The minor scale staff includes a key signature of one flat, while the major scale staff has no sharps or flats.

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.

The image shows two musical staves side-by-side. The left staff is labeled "C Major" and the right staff is labeled "C minor (natural)". Both staves use a treble clef and have twelve notes each, representing the 12-tone tonality of C. Below each staff is a numbered analysis: 1, 2, 3, 4, 5, 6, 7, (1), 1, 2, b3, 4, 5, Ab, Bb, C. The minor scale staff includes a key signature of one flat, while the major scale staff has no sharps or flats.

The scale degrees of C minor are numbered *in reference to C Major*, the Major scale being the absolute reference¹ for numbering all twelve tones of the tonality. The 3rd, 6th and 7th degrees are lowered to b3, b6 and b7 – 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:

The image shows a single musical staff with a treble clef, representing the 12-tone tonality of C. It has twelve notes, each with a specific number below it: 1, b2, 2, b3, 3, 4, #4, 5, b6, 6, b7, 7, (1). The notes are separated by quarter note rests, and the staff ends with a final note on C.

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.

b2, b3, #4, b6 and b7 are all functional modal² scale degrees. They are all part of the tonality.

¹ 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).

² See further [Tonal Degrees and Modal Degrees](#).

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

C chromatic (ascending)

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

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 them¹. Going up, the diatonic tones are raised (with sharps #) – following the upward movement of the scale – to become chromatic tones that *approach* the following diatonic tones.

In this ascending chromatic scale, #1, #2, #4, #5 and #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 b) – following the downward movement of the scale – to become chromatic tones that *approach* the following diatonic tones.

C chromatic (descending)

(C) B Bb A Ab G Gb F E Eb D Db C
 (1) 7 b7 6 b6 5 b5 4 3 b3 2 b2 1

In this descending chromatic scale, b7, b6, b5, b3 and b2 only *appear* to be the same functional modal scale degrees as in the tonality scale above (except for b5, instead of #4), but the *reasoning* behind this chromatic construction, with chromatic *approach tones*, is not, strictly speaking, a *modal* reasoning.

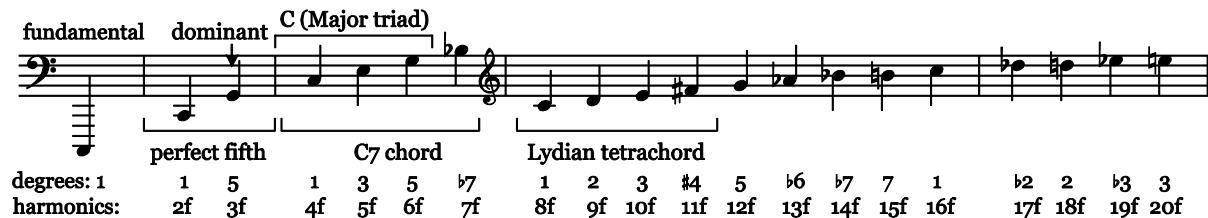
Whether a particular scale degree is a *functional modal degree* or merely a *chromatic approach tone* is often subject to discussion², mostly with musicians who are not familiar with existing parent scales. But also, because it can depend on the musical context and the musical phrasing that can – according to one's perspective – be interpreted in different ways.

¹ *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”.

² And the subject of this book. See [Melodic Analysis](#).

HARMONIC SERIES

Before analyzing the 12-tone tonality in depth, it's useful to get familiar with the **harmonic series** (or *overtone* series). 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 1st harmonic is $2f$ ($2 \times f$), the 2nd harmonic is $3f$, and so on ... up to the 19th harmonic = $20f$.



Further in the series, higher than $20f$, the harmonics 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 ($3f = G$) is one perfect fifth ¹ higher than the fundamental (not taking into account octave jumps).

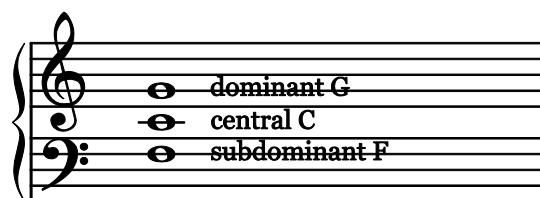
It repeats itself every time it doubles its frequency ($3f$, $6f$, $12f$...).

→ *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 ²

This is still reflected in written music, in the grand staff with 11 lines, the 11th 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.



¹ See [Intervals in the Major scale](#).

² **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 ($5f = E$) is one Major third¹ 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 three tones with its own Major triad (each being fundamental of its own harmonic series), these are the chords you get²:

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

A musical staff in G clef shows three major triads. The first triad, 'Major triad on Dominant G', consists of notes G, B, and D. The second, 'Major triad on Central Tone C', consists of notes C, E, and G. The third, 'Major triad on SubDominant F', consists of notes F, A, and C. The notes are positioned on the staff according to their pitch: G, B, D on the first line; C, E, G on the third line; and F, A, C on the fifth line.

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

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

The Dominant Seventh Chord

The following new tone, different from fundamental, dominant and Major third ($7f = B\flat$) 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 → C7 chord³).

The implications of that fact, the “dominance” of the Dominant Seventh Chord in functional harmony⁴, will become obvious when reading further.

¹ See [Intervals in the Major scale](#).

² These chords form the complete IV-V-I cadence. See [Major Functional Cadences](#).

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

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

The Lydian Tetrachord

The following new tones, 9f and 11f (D and F♯), 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 tones¹ 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 centuries², between (Classical as well as Jazz) musicians. Some musicians advocate that the raised 4th degree (#4) should be the “natural” fourth in the reference scale, instead of the unstable 4th degree (4 being absent in the harmonic series, or higher than 20f). The C reference scale would then be the *Lydian scale*³.

When expressed in the circle of fifths⁴, this scale also starts with the Central Tone (**C**) instead of the Subdominant (F).

Circle of fifths:	C – G – D – A – E – B – F♯
instead of	F – C – G – D – A – E – B

This concept is called **the Lydian Concept**.

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

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

³ See [Chord Scales in Major](#).

⁴ See [Circle of Fifths](#).

The Lydian^{b7} 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^{b7}scale**.

C Lydian \flat 7

1 2 3 #4 5 6 7 (1)

Those musicians consider this scale to be the most "natural", the scale that follows the natural sound of the harmonic series. Other significant names for this scale: the *Acoustic* scale, or the *Overtone*¹ scale, or the “*gamme naturelle*” in French².

TONAL DEGREES AND MODAL DEGREES

Tonal Degrees

In the tonality – regardless of the central tone – **1, 4 and 5** are the **tonal degrees**, or *tone generating degrees*. They form the *backbone of the tonality*, and are therefore, in principle, fixed. Lowering or raising the tonal degrees destabilizes the tonality. This may cause a modulation in the ear, in other words, a shift to a new tonic.

tonal degrees 1, 4 and 5

1 4 #4 5 (1)

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 intervals³ function, it is handy to keep considering 4 as a tonal (though not necessarily fixed) degree.

¹ Overtone is a synonym for *Harmonic* (in the harmonic series).

² Not to be confused with the *Natural minor scale* (called *gamme mineure antique* in French).

³ See [Intervals in the Major scale](#).

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.

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

The altered degrees – $\flat 2$, $\flat 3$, $\flat 6$ and $\flat 7$ – are of course also modal degrees that can be raised again. Indeed, by raising $\sharp 3$, $\sharp 6$ and $\sharp 7$ of the minor scale, the scale changes (back) to the Major scale, or just another *mode* of the tonality.

Exceptions

- The 2nd degree can sometimes be raised to $\sharp 2$.

It can even “explode” into two new “2nd” degrees, $\flat 2$ and $\sharp 2$, creating an octotonic scale.¹

- The 7th degree can sometimes be lowered to $\flat\flat 7$.

Just the same as the 2nd degree, the $\flat 7$ (seventh by default for chords – see [The Dominant Seventh Chord](#) above) can also explode into two new “7th” degrees, $\flat\flat 7$ and 7, also resulting in an octotonic scale.

- The degrees $\sharp 4$ and $\flat 5$ (and the less common degrees $\sharp 5$ and $\flat 4$) are modal degrees, and certainly not tonal degrees.

(Although adepts of the Lydian concept, with $\sharp 4$, might dispute this.)

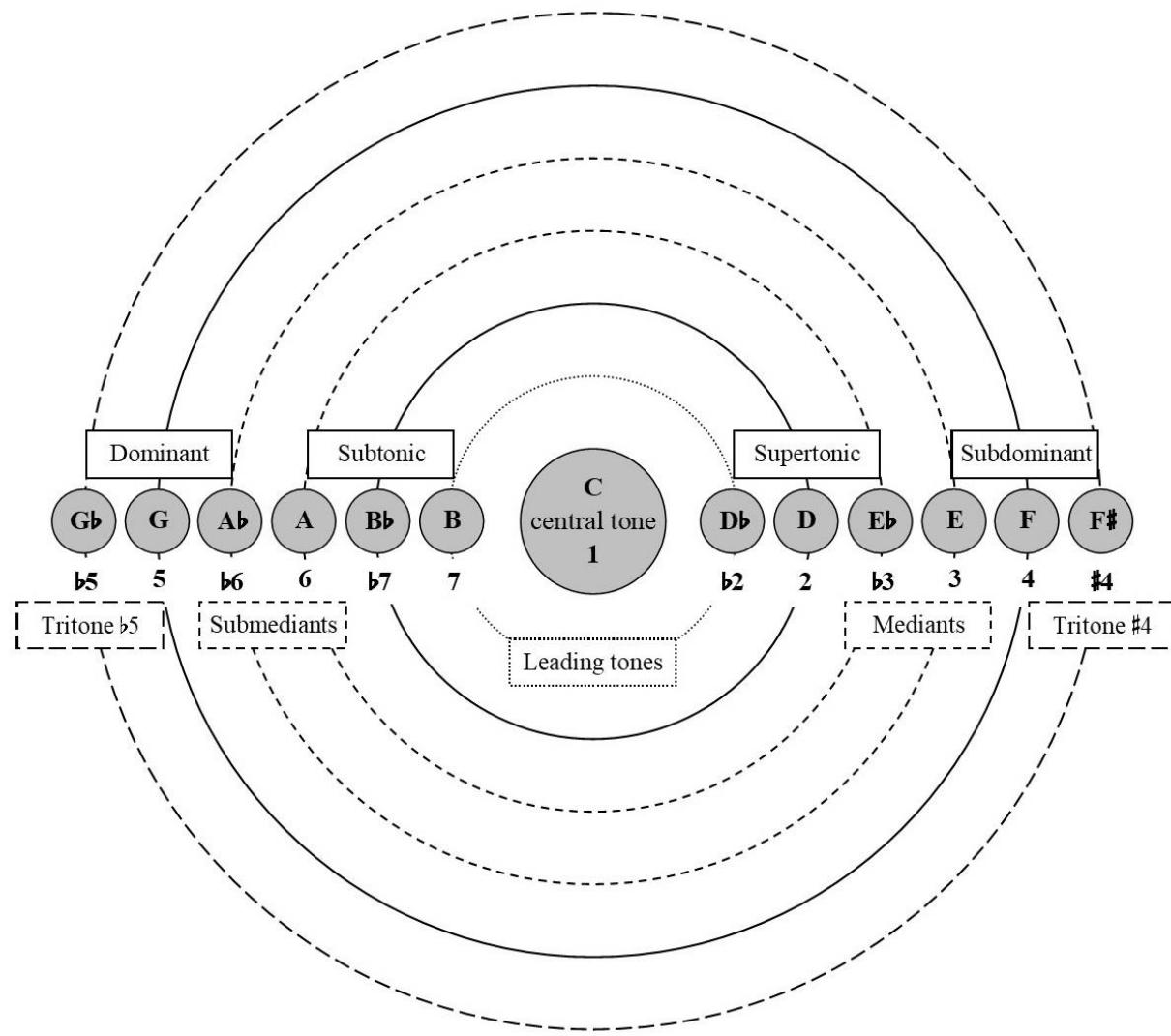
¹ An *octotonic* scale is a scale with 8 functional degrees, as opposed to the usual *heptatonic* scale, a scale with 7 functional degrees.

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. 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**. 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 than leading downwards (b2). (See also [12-Tone Tonality](#) above, chromatic approaches.)

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 (required) resolution. The (old) classical tradition, however, demands that they too 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 third¹ 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*, making them ideal degrees for forming chords with the central tone.

The term (sub-) *mediant* means "lying in the middle" and points to an important function: 6 and $\flat 6$ lie perfectly in the middle of the central tone (1) and the subdominant (4).

$\flat 3$ and 3 are perfectly in the middle of the central tone (1) and the dominant (5).

Thus, they are also ideal *and stable* degrees to form, together with the central tone, chords with the subdominant ($\flat 6$ and 6) and with the dominant ($\flat 3$ and 3). (See [The Major Triad](#).)

In addition, 6 and $\flat 3$ are mildly attracted by the dominant and the subdominant.

$\flat 6$ and 3 are even *leading tones to* (strongly attracted by) the dominant and the subdominant. They have an important *secondary* function to the dominant and the subdominant.²

Tonal degrees 5 and 4

G and F are **dominant** and **subdominant** respectively. They are one perfect fourth away from the central tone³. They both sound in *open consonance* (almost in unison⁴) *with the central tone* (making them ideal degrees for forming chords *with* the central tone – see above). They both have **strong harmonic functions**, but they function in opposite directions.

- G is the fifth of C (2nd harmonic of C, or 3x the frequency of C). This makes the dominant want to resolve *to the central tone (con-centric function)*.
- C is the fifth of F (2nd harmonic of F, or 3x the frequency of F). Because of this, it is *the central tone that wants to resolve to the subdominant (ex-centric function)*. The roles are reversed. It is as if C is now dominant, and F is tonic, proving that the subdominant is a very unstable degree, it destabilizes the tonality.

(See [The Lydian Concept](#) above.)

¹ See [Intervals in the Major scale](#).

² That is why 6 (and $\flat 6$) is usually called "super-dominant" in Dutch (idem in French, "susdominant"). These terms point to their *secondary* function towards the dominant.

³ In harmony – for their function – they are viewed from their **fifth** relationship (not fourth) to the tonic.

⁴ *Unison* = the same note twice (regardless of octave leaps).

Degrees $\flat 5$ and $\sharp 4$

$G\flat$ and $F\sharp$ 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 ($F\sharp$ to G) or the subdominant ($G\flat$ 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 $\sharp 4$ 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 the notes E, F#, G#, A, B, C#, D#, and E (1). The second staff is labeled "E minor (natural)" and lists the notes E, F#, G, A, B, C, D, and E (1), where G is a natural note and C is a flat note. The third staff is labeled "12-tone tonality of E" and lists the notes E, F, F#, G, G#, A, A#, B, C, C#, D, D#, and E (1), where F is a flat note and C# is a sharp note.

MODALITY

Modality, in this book, stands for the potential to alter (lower or raise) certain (usually *modal*) degrees of the mode of the song (the original *parent scale*, e.g., C major) *without leaving the tonality* (without changing the central tone). This then generates [Modal Changes](#), with new parent scales (e.g., C minor) and with new chords and chord scales derived from them.

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.

But a composer rarely sticks to only that one key. The song will probably be enriched with both ...

Modal Changes: 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: 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.

So, what's the difference between *key* and *parent scale*? As a concept, a parent scale is more precise than a key. In the minor key alone, there are (at least) three different parent scales: natural, harmonic and melodic. These three parent scales, of which each generate a different series of chords, do however belong to the same key.

Feel free to think *key* when *parent scale* is mentioned in this book. In the beginning, you won't even notice the difference. But we'll see that there are many more parent scales than the classical major and minor "keys".

Thinking *parent scale* means looking at how each tone, and each chord, of the song relates to the *central tone of the song* (or to the *new* central tone when a tonal change occurs). This is a (rather) classical way of thinking, called *horizontal analysis*.

But in classical analysis one sees modulations everywhere, even where there are *only* modal or tonal changes. The difference between a "real" modulation and modal or tonal changes will gradually become clearer.

A **chord scale** is the result of adding *tensions* (and *avoids*) to a chord.

The melody of the song is then based on these chord scales.

Thinking *chord scale* means looking at how each tone *above the chord* – [from the very first hit of the chord, until one leaves the chord] – relates to the *root of that chord*. This is a (rather) jazz way of thinking, or *vertical analysis*.

Chord scales are also very often called *modes*. But a chord scale is really *just a chord*, while a mode (major, minor, ...) is a color that one would rather apply to a parent scale. However, if one looks at a chord as a stand-alone tonal system, then its chord scale is also a mode. Here, too, the (subtle) difference will gradually become clearer.

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. They'll see how chord scales will be introduced later.

Some musicians (especially pop musicians) tend to differentiate chords according to their *voicing* (how the notes are distributed among the different voices, instruments and/or hands) and *density* (the number of different notes a chord includes). Whereas jazz musicians differentiate chords according to their *function*. The chord scale, in addition to the chord symbol, provides information about the *function* of the chord.

E.g.: In a song in F major, the C7 chord has the dominant *function*. Depending on the voicing and density, the (pop) composer will use the following possible chord symbols:

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

“Ambiguous”¹ symbols: C – C2 – Csus2 – Cadd2 – Cadd9 – C6 – Csus4 – C11 – etc.

The image shows two staves of musical notation. The top staff consists of eight vertical columns, each containing a chord symbol above a horizontal line of notes. The symbols are: C7, C9, C13, C, C2-Csus2-Cadd2-Cadd9, C6, Csus4, C7sus4, and C9sus4-C11. The bottom staff consists of eight vertical columns, each containing a single note below a horizontal line. Below the top staff is a horizontal line with the label 'C7' centered under it. Below the bottom staff is another horizontal line with the label 'C7sus4' centered under it.

To the Jazz musician, and improviser, all these chord symbols mean (more or less, given the F Major context) the same thing: a C7 (or C7sus4) [Mixolydian]² dominant chord.

[Mixolydian] is the *chord scale* and it means:

7-chord, with available tensions 9 and 13, and avoid tone 11 (or sus4)

You can add and/or remove degrees to any chord (change the *density*), and position and distribute all those degrees as you wish (change the *voicing*), all according to your own sense of aesthetics as a composer, arranger or improviser. None of these actions change the *function* of the chord, as long as you respect the context. So, there is no *functional* difference between all the above chord symbols (except a subtle difference between C7 and C7sus4).

In daily practice, it's best to adopt the following habits:

If one wants to provide information about the voicing and/or density of the chord, one can only do so – correctly and completely – by using traditional music notation, with staves, keys and notes.

Using the “correct” symbols with tensions (see examples above) may be an option to give (clearer) information about the density and/or about the chord scale, but will never give sufficient information about the voicing anyway.

Chord symbols should always give information about the *function* of the chord, and preferably, *only about the function*.

¹ Unclear about the *function* of the chord.

² 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 1st degree)”. In opposition to the parent scale that can be used over different subsequent chords.

BASIC KNOWLEDGE

The classical Major and minor scales keep being references in 21st century, outranking all other modes as keys (parent scales)¹ to generate chords and cadences for composition.

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)**

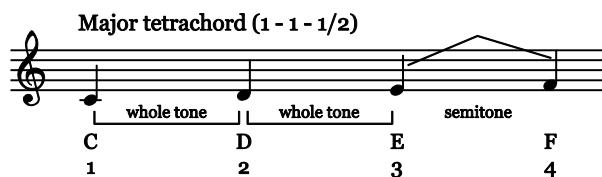
The numbers in bold, without flats or sharps, form the Major scale.

In analyzing chords, we'll also use this numbering, starting on the root of the chord (1) 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 – 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 ²			
Tetrachord name	Construction 1 = Whole Tone ½ = semitone	Degree numerals	Alternate names
Major	1 – 1 – ½	1 – 2 – 3 – 4	Ionian

C Major scale

whole tone

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

Major tetrachord

The major scale contains the tonal degrees 1, 4 and 5, and the modal degrees 2, 3, 6 and 7.

¹ Except for Modal Music.

² 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'll 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 = 1, tonic

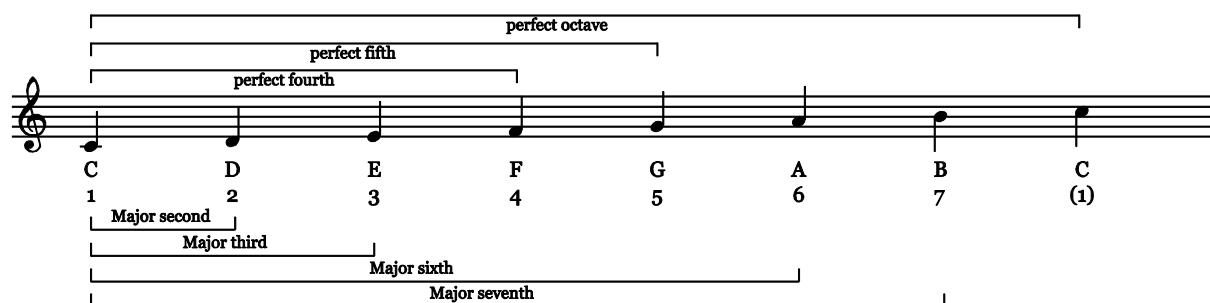
The Major scale (mode) borrows its name, **Major**, from the *Major 3rd* being used in the scale. (See intervals below.)

INTERVALS IN THE MAJOR SCALE

All intervals between tonic and *tonal* degrees are **perfect**.

All intervals between tonic and *modal* degrees are **major**.

Intervals in C Major



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

	Degree number (= interval)	Tonal/Modal degree	Quality	Interval
From tonic (1) to ...	1	Tonal	Perfect	Unison
	2	Modal	Major	Second
	3	Modal	Major	Third
	4	Tonal	Perfect	Fourth
	5	Tonal	Perfect	Fifth
	6	Modal	Major	Sixth
	7	Modal	Major	Seventh
	8 = 1	Tonal	Perfect	Octave

Altering the Quality of Intervals

The term **Major** applies only to the intervals from tonic to the **modal** degrees (of the 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 modal degree (increasing the major interval), one gets an **augmented** interval. And when *exceptionally* lowering an already lowered modal degree (reducing the minor interval), one gets a **diminished** interval.¹

The term **perfect** applies only to the intervals from tonic to the **tonal** degrees. And *perfect* implies that those intervals are fixed, otherwise becoming “*imperfect*”.²

Lowering the tonal degrees (reducing the perfect interval) creates *diminished* intervals. Raising them (increasing the perfect interval) creates *augmented* intervals.

Inversion of Intervals

Knowing how intervals behave when inversed, can be a useful tool.

It tells a lot on how Major/minor intervals behave in comparison to perfect intervals.

When inversed, this is how intervals behave:

A unison	stays	a unison	
A second	becomes	a seventh	and vice versa
A third	becomes	a sixth	and vice versa
A fourth	becomes	a fifth	and vice versa
An octave	stays	an octave	

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

Major	becomes	minor	and vice versa
perfect	stays	perfect	
augmented	becomes	diminished	and vice versa

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

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

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

- When looking for the major seventh (7) of a chord, it is easier to look for the minor second (one semitone) below the octave (8=1).
- Similarly, when looking for the minor seventh (♭7) of a chord, it is easier to look for the major second (one whole tone) below the octave.

¹ Modal degrees are never raised, with the exception of #2: the augmented 2nd.

The 7th degree can be lowered twice, ♭7: the diminished 7th (inversion of the augmented 2nd).

² 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*. In French, then, the augmented fourth becomes *la quarte fausse*, and the diminished fifth becomes *la quinte fausse*.

List of most common intervals

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

<u>Degree Number</u>	<u>Intervals > Inversions of ></u>	<u>... and their inversions ... intervals</u>	<u>Degree Number</u>
1	Perfect unison	Perfect unison	1
b2	minor second	Major seventh	7
2	Major second	minor seventh	b7
#2	Augmented second	diminished seventh	b7
b3	minor third	Major sixth	6
3	Major third	minor sixth	b6
b4	diminished fourth	Augmented fifth	#5
4	Perfect fourth	Perfect fifth	5
#4	Augmented fourth	diminished fifth	b5
8	Perfect octave	Perfect octave	8

<u>Intervals higher than the octave (combined intervals)</u>			<u>“Same as”</u>
b9	minor ninth	Octave + minor second	b2
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
b13	minor thirteenth	Octave + minor sixth	b6
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) as first tetrachord to start a new Major scale.
- Add a new Major tetrachord, one whole tone higher. You'll need to raise the 3rd degree of this new tetrachord to match the intervals of the Major tetrachord (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 7th 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:

C Major

G Major

D Major

A Major

E Major

B Major

F# Major

Up from here >

Each new scale needs a raised 7th 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) as second tetrachord to end a new Major scale.
- 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 4th degree of the 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 4th 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:

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

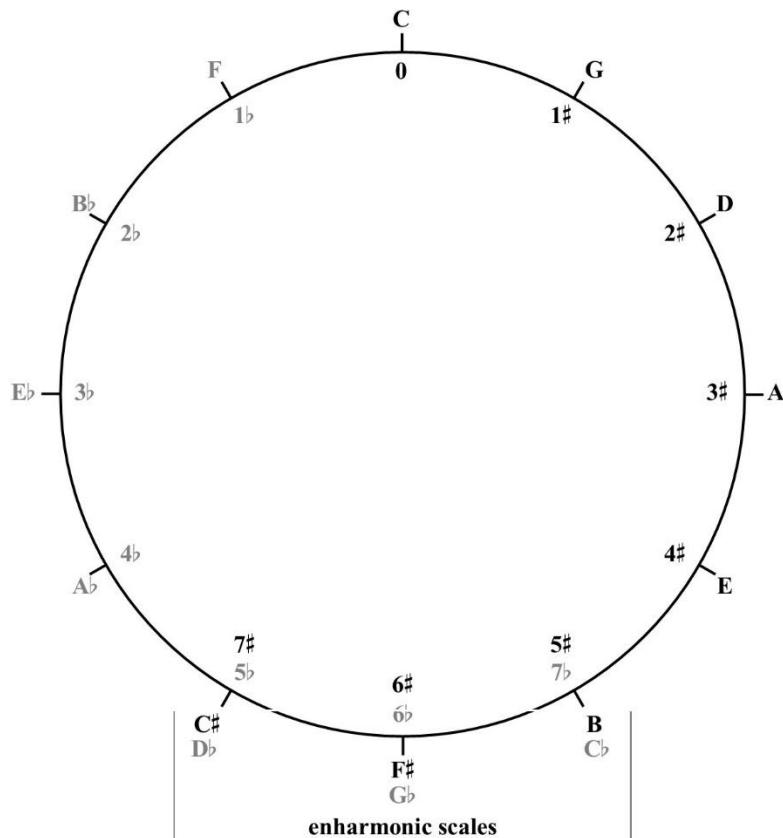
C Major	–	0 (no lowered degrees)
F Major	B♭	1♭ (1 lowered degree)
B♭ Major	B♭ E♭	2♭
E♭ Major	B♭ E♭ A♭	3♭
A♭ Major	B♭ E♭ A♭ D♭	4♭
D♭ Major	B♭ E♭ A♭ D♭ G♭	5♭
G♭ Major	B♭ E♭ A♭ D♭ G♭ C♭	6♭
C♭ Major	B♭ E♭ A♭ D♭ G♭ C♭ F♭	7♭

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 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	G _b	D _b	A _b	E _b	B _b	F	C	G	D	A	E	B	F#	C#
7 _b	6 _b	5 _b	4 _b	3 _b	2 _b	1 _b	0	1#	2#	3#	4#	5#	6#	7#
B _b		F#												
E _b			C#											
A _b				G#										
D _b	D _b	D _b	D _b					D#						
G _b	G _b	G _b							A#	A#	A#	A#	A#	A#
C _b	C _b									E#	E#	E#	E#	E#
F _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)

Arithmetic translation of the key signature

The last line in the table is an arithmetic translation of the key signature, the *number of flats or sharps*. With this, you can calculate the **key signature of the parallel minor scales** (more on this on the next page), and also *the tone composition of any possible parallel scale* (or mode) that we are yet to learn.¹

Arrangers can also use it for **transposing instruments**:

An alto sax is in E_b. The transposition is + 3.

When an alto sax plays "its" scale of C major, you are actually hearing it play the scale of E_b major. From C major, with no flats or sharps (0), to E_b major, with 3 flats (-3), the difference is -3. (0 - 3 = -3)

If one really wants the alto sax to sound in C, then correct by + 3.

C 0 + 3 = 3 = A with 3 sharps.

Have the alto sax play the song in A major, and you will hear it play in C major.

A tenor sax is in B_b. The transposition is + 2.

With the tenor sax, one hears B_b major, when he "thinks" he is playing C major.

From C major (0) to B_b major (-2) the difference is -2.

If one wants the tenor sax to sound in the *true* key, one corrects with + 2.

If you want to hear the song in D major (+2), then write it for tenor sax in E major (+4).

¹ See [Calculating the Tone Composition of any Mode](#).

RELATION BETWEEN MAJOR AND MINOR SCALES

Major and minor scales are related to one another in two different ways:
parallel and **relative**.

Parallel scales

They are **parallel** when they begin and end on the *same tonic*.

They have the same central tone and are therefore of the *same tonality*.

But they have a *different tone composition* (and key signature).

One is simply a *different mode* compared to the other, a *different way of making the same tonality sound*.

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 (and vice versa).

(See arithmetic translation of key signatures on previous page).

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
B♭ Major:	2♭	= -2	>	-2 - 3	= -5	> 5♭	= B♭ minor

Relative scales

They are **relative** when they share the *same tone composition* (and key signature).

They share the same "blood" as it were (hence, relative = family).

But they begin and end on *different tonics*.

They have different central tones and thus are of *different tonalities*.

The concept of relative keys is necessary to understand tonal changes (or modulations) to a very close (= relative), or sometimes not so close (not relative) tonality.

The minor scale starts on the 6th degree (6) of its relative Major key.

The Major scale starts on the 3rd degree (3) 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 Phrygian¹ tetrachord, both separated from one another by one whole tone.

minor tetrachord (1 - 1/2 - 1)

Phrygian tetrachord (1/2 - 1 - 1)

whole tone semitone whole tone semitone whole tone whole tone

C D E_b F C D_b E_b F

1 2 _b3 4 1 _b2 _b3 4

TETRACHORDS CHART			
Tetrachord name	Construction 1 = Whole Tone 1/2 = semitone	Degree numerals	Alternate names
Major	1 - 1 - 1/2	1 - 2 - 3 - 4	Ionian
minor	1 - 1/2 - 1	1 - 2 - _b 3 - 4	Dorian
Phrygian	1/2 - 1 - 1	1 - _b 2 - _b 3 - 4	

C natural minor scale

whole tone whole tone semitone whole tone whole tone

C D E_b F G A_b B_b C

1 2 _b3 4 5 _b6 _b7 (1)

minor tetrachord Phrygian tetrachord

With tonal degrees 1, 4, and 5; and modal degrees 2, _b3, _b6 and _b7

Functions of the degrees:

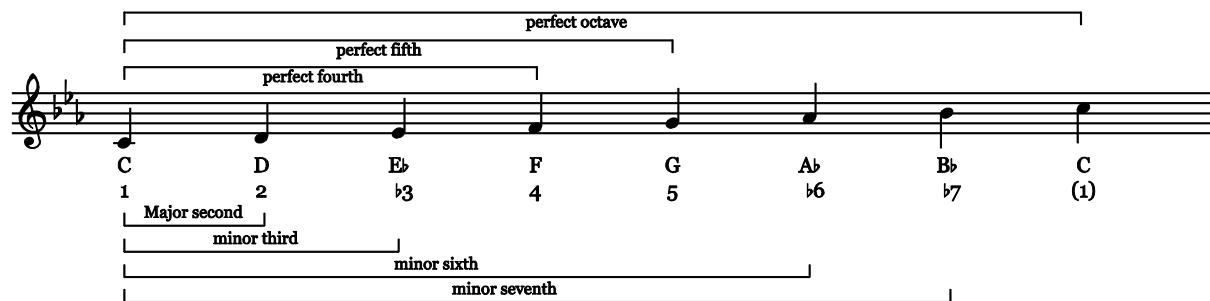
- 1 tonic
- 2 supertonic
- _b3 (**lowered**) mediant
- 4 subdominant
- 5 dominant
- _b6 (**lowered**) submediant
- _b7 **subtonic**
- 8 tonic

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

¹ The origin of the tetrachord's 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 **minor**, with the exception of the Major second. All intervals from tonic to the *tonal* degrees are (stay, as in Major) **perfect**.



	Degree number (= interval)	Quality	Interval
From tonic (1) to ...	1	Perfect	Unison
	2	Major	Second
	b3	minor	Third
	4	Perfect	Fourth
	5	Perfect	Fifth
	b6	minor	Sixth
	b7	minor	Seventh
	8 = 1	Perfect	Octave

THE HARMONIC MINOR SCALE

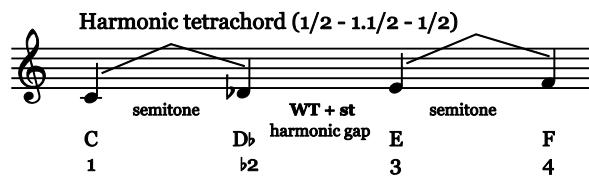
The **Harmonic** scale is a *synthetic* scale¹, a scale with an altered degree with respect to the key signature. It was “invented” to fit the rules of functional harmony², hence the term *Harmonic*. The subtonic of the natural minor scale (b7) is raised to a **leading tone** (7).

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	

¹ 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.

² See [Harmonic Functions of the Chords](#), and also [The Harmonic minor Parent Scale](#).



The most obvious characteristic of the Harmonic tetrachord is the large gap, called the *Harmonic gap*¹, of one whole tone + one semitone between $\flat 2$ and 3 (see tetrachord above).

This becomes $\flat 6$ and 7 in the harmonic scale (see full scale below).

C Harmonic minor scale

C D E_b F G A_b B C
1 2 b3 4 5 b6 7 (1)

minor tetrachord whole tone harmonic tetrachord

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**.

perfect octave

perfect fifth

perfect fourth

C D E_b F G A_b B C
1 2 b3 4 5 b6 7 (1)

Major second minor third minor sixth Major seventh

¹ This harmonic gap (the whole tone + semitone interval) is sometimes called the *augmented second*, which is obviously correct. But, to avoid confusion, I reserve the term *augmented second* for degree #2, which forms an augmented second with the tonic of a mode, scale, or chord. All intervals analyzed, and named, in this book are intervals formed *starting on the tonic*, not intervals between other degrees of the scale.

	Degree number (= interval)	Quality	Interval
From tonic (1) to ...	1	Perfect	Unison
	2	Major	Second
	$\flat 3$	minor	Third
	4	Perfect	Fourth
	5	Perfect	Fifth
	$\flat 6$	minor	Sixth
	7	Major	Seventh
	8 = 1	Perfect	Octave

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.¹

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	

C Melodic minor scale

1 2 $\flat 3$ 4 5 6 7 (1)

minor tetrachord whole tone major tetrachord

With tonal degrees 1, 4, and 5; and modal degrees 2, $\flat 3$, 6 and 7.²

¹ The Melodic scale is known in German schools as the Dür-Moll scale, meaning partly minor, partly Major (or *Hybrid*). The odd Dür-Moll naming, just the opposite of the order of the tetrachords, will be explained in [The Melodic-IV7^{#11} Subdominant](#), and also in [The Majorb6 Parent Scale](#).

² In classical schools one learns that the melodic scale is *only* an *upward* scale. When *going downward*, one must *always* play the *natural* minor scale. But there are plenty of examples – also by great masters (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”.

-
- 1 tonic
 - 2 supertonic
 - b3 (lowered) mediant
 - 4 subdominant
 - 5 dominant
 - 6 (natural)** submediant
 - 7 leading tone**
 - 8 tonic

Intervals in the Melodic minor scale

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

A musical staff in G clef and one flat key signature. The notes are C, D, E♭, F, G, A, B, C. Below the staff, degree numbers 1 through 8 are assigned: 1 (C), 2 (D), b3 (E♭), 4 (F), 5 (G), 6 (A), 7 (B), and 8 = 1 (C). Brackets above the staff label the intervals: "perfect octave" (C-C), "perfect fifth" (G-C), "perfect fourth" (F-G), "major second" (D-E♭), "minor third" (E♭-F), "major sixth" (A-B), and "major seventh" (B-C).

	Degree number (= interval)	Quality	Interval
From tonic (1) to ...	1	Perfect	Unison
	2	Major	Second
	b3	minor	Third
	4	Perfect	Fourth
	5	Perfect	Fifth
	6	Major	Sixth
	7	Major	Seventh
	8 = 1	Perfect	Octave

¹ Compare this scale with the Major scale: the only lowered degree is the b3.

Without this minor third, the Melodic scale (or mode) wouldn't be called "minor".

RELATIVE MINOR SCALES IN THE CIRCLE OF FIFTHS

C b	G b	D b	A b	E b	B b	F	C	G	D	A	E	B	F#	C#
7 b	6 b	5 b	4 b	3 b	2 b	1 b	0	1#	2#	3#	4#	5#	6#	7#
A bm	E bm	B bm	Fm	Cm	Gm	Dm	Am	Em	Bm	F#m	C#m	G#m	D#m	A#m
B b	B b	B b	B b	B b	B b	B b		F#	F#	F#	F#	F#	F#	F#
E b	E b	E b	E b	E b	E b			C#	C#	C#	C#	C#	C#	C#
A b	A b	A b	A b	A b				G#	G#	G#	G#	G#	G#	G#
D b	D b	D b	D b					D#	D#	D#	D#	D#	D#	D#
G b	G b	G b							A#	A#	A#	A#	A#	A#
C b	C b									E#	E#	E#	E#	E#
F b											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**b** – E**b** – B**b** – 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**b** – E**b** – A**b** – ...

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

Pentatonic Scales

THE MAJOR AND MINOR PENTATONIC SCALES

Major and minor **Pentatonic Scales**, scales with only five different tones (*penta* means five in old Greek) 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 – 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 | (→ F in C Major) |
| the seventh | – one semitone below the tonic | (→ B in C Major) |

Tones left out in minor:

- | | | |
|-----------------|--------------------------------------|-------------------------------|
| the second | – one semitone below the minor third | (→ B in A minor) |
| the minor sixth | – one semitone above the fifth | (→ F in A minor) ¹ |

Note that C Major Pentatonic (CMaj5t) is relative to A minor Pentatonic (Am5t)². They share exactly the same tone composition, in the same way that the (usual) C Major scale is relative to the A minor Natural scale.

The gaps that are left by the missing tones are minor thirds.³

(From 3 to 5, and from 6 to 8, in Maj5t – from 1 to ♭3, and from 5 to ♭7, in m5t.)

These scales are universal. According to some theorists, they're our primal scales. One must know them because they are very useful as improvisational scales. But just because they are so convenient, many beginners (and also many pop musicians) tend to use them everywhere and all the time, which too often leads to an improper and clumsy use of these scales. In contrast, there are very creative and artistic ways of playing with pentatonic scales.⁴

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

² I will use these abbreviations when needed.

³ In our Belgian solfège classes, these minor thirds are called "cuckoo's thirds" because they sound like the call of a cuckoo when sung descending. Many singing lessons for beginners start with the cuckoo's third (sol-mi).

⁴ 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**, tones that add a bluesy sound to the scale. We will develop the subject of Blues later in this book¹, but it's useful to introduce the Blues scales right now because that “bluesy” sound has a major influence on American Popular Music. Blues is at the origin of Jazz², Rhythm & Blues, Soul and Rock & Roll (amongst other styles).

The (traditional) **Blues Scale** is a minor pentatonic scale with **#4**, the raised fourth³, as additional blue note:

A Blues Scale

Since that scale is traditionally used in *Major Blues*⁴, **b3** (the *minor third*) and **b7** (the *minor seventh*) are also blue notes (by opposition to 3, the *Major 3rd*, and 7, the *Major 7th*).

Thus, the Blues scale has three blue notes: **b3**, **#4** and **b7**.

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 **b3**, the lowered third⁵, as blue note:

C Major Blues Scale

Note that the C Major Blues Scale has exactly the same tone composition as its relative A (minor) Blues Scale, D# (#4 of A Blues) being enharmonic to E♭ (b3 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).

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

¹ See [A Short-Cut to the Blues](#).

² Think of the well-known jazz record label, the “Blue Note Records”.

³ In some books and on scores, you will encounter this blue note as a diminished fifth (b5).

⁴ And in minor Blues also.

⁵ Sometimes encountered as a raised second (#2).

Chords

BUILDING CHORDS

A chord is quite easily described as

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

The complexity with chords is that, once built, 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 (e.g.) 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* (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 and playing 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 harmony, 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 be able to analyze a chord **in the tonality** (*parent scale*, or *horizontal analysis*).

Both perspectives will be studied in the next part.

First, we need a set of standards to be able to work with chords.

¹ 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.

² 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 (too dense) and lose their clarity, losing their function at the same time.

STRUCTURE OF A CHORD

The root

The **root** is the tonic (or central tone) of the chord. To avoid confusion, I will always use the term *root* for a chord (and a chord scale), and the term *tonic* for a parent scale (or key).

The root gives its name to the chord.

The Body

The **body** is formed by the **chord tones**: the third (3), the fifth (5) and the seventh (7).

In classical theory, the seventh is considered a tension. A triad, (usually) being consonant, is considered a *perfect* chord, while a four-note chord, always (at least a little) dissonant, is considered a “tensioned” chord.

Not in Jazz. Again, the density of the chord is not taken into account. Four-note chords are standard as they provide more sounding information about the function of the chord.¹

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 is 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 chord symbols will still use 2, 4 and 6.

11 is avoid (Av11) (see [Chord Scale](#) further)

For advanced readers: Note that the chord symbol (C^Δ) 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.

¹ 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	Alternate Symbols
	1	ROOT	C, C♯ or D♭, D, D♯ or E♭, F, etc.	
BODY	3 ♭3	Major third = <i>normal</i> Minor third	No symbol m	–
	5 ♭5 ♯5	Perfect fifth = <i>normal</i> Diminished fifth Augmented fifth	No symbol ♭5 ♯5	° (see below) +
	♭7 7 ♭♭7	minor seventh = <i>normal</i> Major seventh Diminished seventh	7 Δ	maj7 ° (see below)
SUPER STRUCTURE	9 ♭9 9	Major ninth (or second) Minor ninth Augmented ninth	9 (with 7 th) 7♭9 7⁹	2 (no 7 th)
	11 ♯11	Perfect eleventh (or fourth) Augmented eleventh	sus4 ♯11	11
	13 ♭13	Major thirteenth (or sixth) minor thirteenth	13 (with 7 th) 7♭13	6 (no 7 th)

Special symbols:

- ° diminished combines ♭3, ♭5, ♭♭7
- ∅ half diminished combines ♭3, ♭5, ♭7 (same as **m7♭5**)
- alt altered combines (no 5th) ♭9, ♯9, ♯11, ♭13 (all **altered tensions**)
- 6/9** sixth-ninth combines 9, 13 (on triad) (no 7th)

See also [Mastering the Tensions](#).

Inversion of Chords

A chord can be inverted when 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”.

The image shows a musical staff with a treble clef and a bass clef. It contains four measures, each representing a different inversion of a C7 chord. The first measure, labeled 'C7', has a bass note 'C' (an open circle) and a treble note 'E' (a solid black note). The second measure, labeled 'C7/E', has a bass note 'E' (an open circle) and a treble note 'G'. The third measure, labeled 'C7/G', has a bass note 'G' (an open circle) and a treble note 'B'. The fourth measure, labeled 'C7/Bb', has a bass note 'B' (a solid black note) and a treble note 'D'. The notes are represented by vertical stems with horizontal dashes at the top.

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

C7/E = C7 chord with E (Major third) in the bass (first inversion).

C7/G = C7 chord with G (perfect fifth) in the bass (second inversion).

C7/B \flat = C7 chord with B \flat (minor seventh) in the bass (third inversion).

Hybrid chords

A hybrid chord is also written with a slash. This prevents chord symbols that are too “heavy”, and it provides *some* information about the voicing and the density of the chord.

The image shows a musical staff with a treble clef and a bass clef. It contains five measures, each representing a different hybrid chord. The first measure, labeled 'B \flat $^\Delta$ /C', has a bass note 'B' (an open circle) and a treble note 'C'. The second measure, labeled 'Gm7/C', has a bass note 'G' (an open circle) and a treble note 'C'. The third measure, labeled 'E \flat $^\Delta$ /C', has a bass note 'E' (an open circle) and a treble note 'C'. The fourth measure, labeled 'G \flat 7/C', has a bass note 'G' (an open circle) and a treble note 'C'. The fifth measure, labeled 'D/C', has a bass note 'D' (an open circle) and a treble note 'C'. The notes are represented by vertical stems with horizontal dashes at the top.

B \flat $^\Delta$ /C looks like a B \flat $^\Delta$ chord with the ninth (C) in the bass.

Gm7/C looks like a Gm7 chord with the eleventh (C) in the bass.

E \flat $^\Delta$ /C looks like a E \flat $^\Delta$ chord with the thirteenth (C) in the bass.

G \flat 7/C looks like 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 where the bass note is the root. The chord is a combination of tensions (the superstructure, with or without “body” tones 3, 5 or 7).

B \flat $^\Delta$ /C	is a C chord no 3 nor 5	with \flat 7, 9, 11, 13	→ C13sus4
Gm7/C	is a C chord no 3	with 5, \flat 7, 9, 11	→ C9sus4
E \flat $^\Delta$ /C	is a C chord	with \flat 3, 5, \flat 7, 9	→ Cm9
G \flat 7/C	is a C chord with 3 (F \flat = E), no 5 th , with \flat 7, \flat 9, #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, #11, 13 → C9 $^{\sharp}$ 11/13 or C Δ 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 20th century, and still today some music publishers and musicians use *their own* chord symbols (according to style, nationality, understanding of the chords, voicing, density, ...). This leads to discussions on which chord symbols are “right”. And, on the internet, one sees the most “inventive”, and sadly enough, often “incorrect” symbols appear. This creates confusion in the mind of young students.

I try to sort things out, as far as I can, below.

Symbols	Used for	Best replaced by
<i>Correct symbols, but obsolete or not universal</i>		
<i>relative tone names:</i> Do Re Mi Fa Sol La Si		<i>absolute tone names:</i> C D E F G A B
<i>German tone names:</i> B (instead of B♭) H (instead of B)	the root of the chord	B♭ B
Cis, Dis, Eis ...¹ Ces, Des, Es ...		C♯, D♯, E♯ ... C♭, D♭, E♭ ...
min, MI	minor chords	m, –
MA7, M7	Major seventh chords	Δ, maj7
dim	diminished seventh chords	°
aug	augmented fifth chords	#5, +
<i>Correct symbols, but unnecessary</i>		
Δ7	Major seventh chords	Δ, maj7
°7	diminished seventh chords	°
5+	augmented fifth chords	#5, +
add2, add9	adding tension 9 to a triad	2
add6, add13	adding tension 13 to a triad	6

¹ 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, ♭ and ♯ tones in only one syllable, sung on only one tone, e.g., “d – e – fis – e – es – d” to sing “d – e – f♯ – e – e♭ – d”. It can be a useful system for syllable singing, it *shouldn’t* be used for chord symbols though.

Symbols	Used for	Best replaced by
Correct symbols (<i>typical guitar chords</i>) (that <i>hopelessly</i> try to say something about the chord's <i>voicing</i>)		
add4, add11	adding tension 11 to a <i>minor</i> triad	m4, m11 (+ guitar tabs)
OMIT3, OMIT5, ... no3rd, no5th, ...	dropping a degree out of the chord	full right functional chord (+ guitar tabs)
5 e.g., C5	“Power chord” (chord without third)	full right functional chord (+ guitar tabs)
<i>Don't use these, please!</i>		
M	Major triad	no symbol needed
7M, 7+	Major seventh chords	Δ, maj7
– or + <i>e.g., 9-, -9, 9+, +9</i>	lowering or raising tensions	♭ or ♯
sus2¹	adding tension 9 to a triad	2
add4, add11	adding tension 11 to a <i>Major</i> triad	“Not done”, 11 is avoid (unless modal reasons ²)

The Δ-symbol: Some musicians dismiss the Δ-symbol (for maj7-chords) because the *triangle* means *triad*. This is correct, and it reflects the classical way of thinking about the three main chords: I and IV, **without** seventh and V7, **with** seventh.

Still, it's a strange argument with modern chord symbols, because a triad doesn't need a special symbol (C = major triad, and Cm = minor triad). For a jazz musician, who prefers to *always* add sevenths to chords, the Δ-symbol (C^Δ or Cm^Δ) means that the seventh on this “triad” **must be a major** seventh.

You *may well* prefer to play it without a seventh because of the dissonance the major seventh causes against the root (especially if the root is in the melody!). But if you like jazzy chords, then add **maj7**. And if you still find the seventh to be disturbing, you can play **6 instead of maj7** (C6 or Cm6).

General rule for the use of tensions in chord symbols: Try to avoid writing too many tensions in chord symbols, unless required by the melody 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. Having to read too many tensions inhibits the performer, and it offers too little freedom to the improviser.

¹ See [The V7sus4 Chord](#).

² See [“Typical” Modal Voicings](#).

CHORD SCALE

A **chord scale** is a specific improvisational scale linked to a specific chord. A chord scale, in this book, will always be written between brackets, symbolizing that the chord scale is limited in time [from the very first hit of the chord, until one leaves the chord] (e.g., [Ionian], often abbreviated to [Ion]). These brackets also prevent possible confusion with parent scales.

A chord scale is a scaled way (by steps, instead of thirds) of representing a full chord: **chord tones** (1, 3, 5, 7) and **tensions** (or avoids) (9, 11, 13).

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* (meaning: they can’t be added to the chord) because they destabilize the chord. They are *melodically* available though, being essentially just an *approach tone* to the chord tone below (see [Mastering the Avoids](#)). It’s easy to locate avoids in a chord scale: they’re always one semitone *above* a chord tone.

The image shows a musical staff in G clef. The notes are C, E, G, B, D, F#, A. Below the staff, the notes are labeled with numbers: 1 (root), 2 (T9), 3, 4 (Av11), 5, 6 (T13), 7, and (1) (root). The note B is labeled Av11, indicating it is an available tension. The note F# is labeled T13, indicating it is a tension. The note A is labeled (1) (root), indicating it is the upper root note.

1, 3, 5, 7 are chord tones (root + body) – 2, 4, 6 form the super structure:
2 and 6 are tensions (T9 and T13) – 4 is avoid (Av11) because it is a semitone above 3.

Important notes on avoids:

- In Δ-chords (example above), the (upper) root (1) is a semitone above chord tone 7. But, of course, the root (itself chord tone) is not an avoid tone.
When 1 is in the melody, it is best to avoid the seventh on top of the chord, in order to also avoid the semitone dissonance between 7 and 1.
One can play **C** (3-note chord) or **C6** (4-note chord) instead.
6 chords very often replace Δ chords, they keep the same function.
- Remember that avoids are *melodically* available as long as they resolve to a chord tone. “Avoid” doesn’t mean “Do not play” but “Do not add to the chord”.
- Dominant seventh chords have no avoids, except Av11 (unless one omits the major third from the chord => sus4 effect). ♭9 and ♭13 are available tensions, even if they are a semitone above chord tones 1 and 5.
- *Chromatic* tones (those not found in the chord scale, tones that are “out”) are 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*: a sequence of *chords*, each with a specific *function*, that eventually resolves to the *central chord*, thus confirming the tonality. This is still the most used, or at least heard, harmonic system in music, in “traditional” music and in “mainstream”¹ Jazz.

The Major Scale is the present-day cultural reference scale (and has been for a long time). It sets the standard for Functional Harmony. In this part we’ll learn the basic concepts needed to compose 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 mode²) 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 diatonic³ to the parent scale.

The diagram shows a musical staff with seven chords. Above the staff are the names of the chords: C^Δ, Dm7, Em7, F^Δ, G7, Am7, and Bm7^{b5}. Below each chord is its Roman numeral name: Imaj7, IIIm7, IIIIm7, IVmaj7, V7, VIIm7, and VIIIm7^{b5}.

The diatonic chords of the C Major scale are:

I	is a C chord	C – E – G – B	1 – 3 – 5 – 7	→	C ^Δ
II	is a D chord	D – F – A – C	1 – b3 – 5 – b7	→	Dm7
III	is a E chord	E – G – B – D	1 – b3 – 5 – b7	→	Em7
IV	is a F chord	F – A – C – E	1 – 3 – 5 – 7	→	F ^Δ
V	is a G chord	G – B – D – F	1 – 3 – 5 – b7	→	G7
VI	is a A chord	A – C – E – G	1 – b3 – 5 – b7	→	Am7
VII	is a B chord	B – D – F – A	1 – b3 – b5 – b7	→	Bm7 ^{b5}

Remember the Series of Diatonic Chords in Major

I^Δ – IIIm7 – IIIIm7 – IV^Δ – V7 – VIIm7 – VIIIm7^{b5}

¹ The term “mainstream” is a little old-fashioned.

Present-day “mainstream” Jazz mixes tonal, modal and even sometimes a-tonal characteristics.

² See next chapter [Chord Scales in Major](#).

³ Diatonic means “included in the scale”.

I^Δ is the **central chord**, just as scale degree 1 is the *central tone*.

I^Δ , IV^Δ and $V7$ – all three of them *Major chords*, the chords built on the *tonal degrees* – are called **main chords** (sometimes called *tone generating* or *tonal chords*¹).

$IIm7$, $IIIm7$, $VIm7$ and $VIIIm7^b5$ – all four of them *minor chords*, the chords built on the *modal degrees* – are called **parallel chords**². In jazz they are called **substitution chords**.³

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 4th degree (subdominant F) and the 7th degree (leading tone B) of the parent scale are **Dominant**. They're *highly unstable*, with a strong harmonic function towards (= they want to resolve to) the *central chord I^Δ* (*con-centric function*).

The Tritone of the Tonality

Remember how we described the 4th degree (subdominant) of the tonality as a highly unstable degree, and the 7th degree (leading tone) as a strong dissonance in respect to the central tone (see [Functions of the 12 Tones in the Tonality](#)). Note also the place of the 7th and 4th degrees when the parent scale is expressed in the circle of fifths⁴: **B – E – A – D – G – C – F**

Both tones form **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 4th > F – B, and the diminished 5th > B – F).

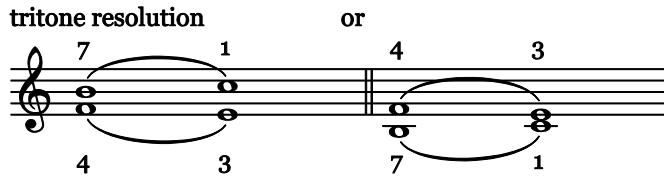
¹ In Dutch: *hoofdakkoorden* – in French: *accords génératrices de ton* or *accords tonals*

² In Dutch: *nevenakkoorden* (= chords next to the main chords).

³ See [Chord Substitution](#) below.

⁴ Here expressed in downward fifths, as most cadences will be. See [Major Functional Cadences](#).

The tritone sounds unstable and dissonant, requiring a *resolution* (= bringing the sound back to a sense of *rest*, of *stability*). This is how the tritone resolves:



4 resolves down by semitone (downward *leading tone*) to the Major 3rd (3).

7 resolves up by semitone (upward *leading tone*) to the central tone (1).¹

Both resolution tones, 1 and 3, form the essence of the central chord I^Δ (and of the parent scale): the root + the *major third* (from which both the *major chord* and the *major scale* derive their *major name*).

The Dominant Chord(s)

V7 and **VIIIm7^{b5}** both include the tritone – 4 and 7 – of the tonality.

The main chord **V7** provides the name – **Dominant**² (**D**) – to this function.

Both chords are **D** (**dominant**).

A musical staff shows chords Imaj7, IIIm7, IIIIm7, IVmaj7, V7, VIIm7, and VIIIm7^{b5}. The V7 chord is highlighted with a box, and the VIIIm7^{b5} chord is shown with brackets.

The tritone (F and B) forms also the *guide tones* ($\flat 7$ and 3) of V7 (G7)³ ...

... en the *root* (1) and diminished *fifth* ($\flat 5$) of VIIIm7^{b5} (Bm7^{b5}).

Important note on VIIIm7^{b5}

The VIIIm7^{b5} chord is set between brackets because that chord is (almost) never used as Dominant chord. If (exceptionally) used as Dominant, it sounds like an inversion of V7: V7/3 = V7 with third in the bass.

We will encounter this chord much more often (always) as a relative-II chord, a subdominant chord in a secondary cadence towards another diatonic chord.⁴

¹ In Jazz, the 7th degree is mostly left unresolved. It is usually kept hanging as the (typical) Major 7th in the following central chord I^Δ.

² The 5th degree is the *dominant* of the scale (see [Functions of the 12 Tones in the Tonality](#)).

³ Be very much aware of the two analyzing perspectives. Analyze the chord and its chord tones, (1) within the tonality of the song (relative to the **parent scale**: *horizontal analysis*) (2) on its own (relative to the **chord scale**: *vertical analysis*).

⁴ See [The minor IIIm7b5-V7 Cadence](#).

SUBDOMINANT Function – Mildly Unstable

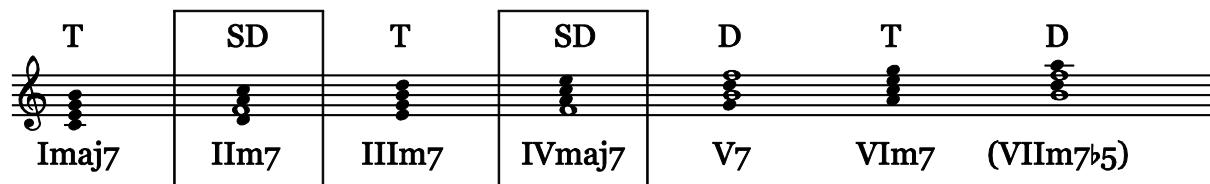
Chords that include the 4th degree (subdominant) of the parent scale are **subdominant**. They're *mildly unstable*, with a *mild harmonic function away from the central chord I^Δ* (*ex-centric function*).

These chords are (still) unstable because of the presence of the unstable 4th 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^Δ both include the 4th degree (without 7).

The main chord IV^Δ provides the name – **Subdominant¹ (SD)** – to this function. Both chords are **SD (Sub-Dominant)**.



The 4th degree of the parent scale is b3 of IIm7.

The 4th degree of the parent scale is the root of IV^Δ.

TONIC Function – Stable

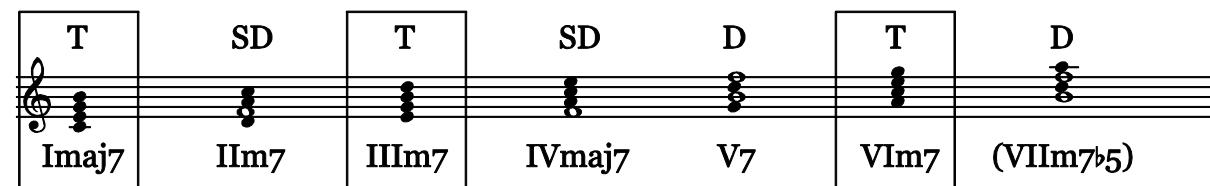
Chords *without the 4th degree* (but 3 instead) are **tonic**. They're *stable*. They provide a sense of rest, a sense of resolution (a “*coming home*”).

The Tonic Chords

I^Δ, III^Δ and VI^Δ do not include the 4th degree.

The main chord I^Δ provides the name – **Tonic² (T)** – to this function.

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



Important note on III^m7 and VI^m7:

III^m7 and VI^m7 are Tonic chords, but they can never provide the same sense of “*coming home*” as the real *end chord (finalis)* I^Δ.

That's precisely why III^m7 and VI^m7 are often used to replace I^Δ in a *deceptive cadence*, a cadence that sounds like “the song is not finished yet”. So, they *can* both replace I^Δ, but only at the end of a musical *phrase* “somewhere in the middle” of the song. They're **substitution tonics** (replacement tonics).

¹ The 4th degree is the *subdominant* of the scale (see [Functions of the 12 Tones in the Tonality](#)).

² The 1st degree is the *tonic* of the scale (see [Functions of the 12 Tones in the Tonality](#)).

Chord Substitution

Chords that share the same harmonic function can replace one another in a song. This is called **chord substitution**.

- **I^A**, **IIIIm7** and **VIm7**, all **T(onic)** chords, can *substitute each other*.
But **IIIIm7** and **VIm7** can never replace **I^A** as the final chord.
(See the important note about **IIIIm7** and **VIm7** above.)
- **IIIm7** and **IV^A**, both **SD** (subdominant) chords, can *substitute each other*.
- **V7** and **VIIIm7^{b5}**, both **D(ominant)** chords, *should be able to substitute each other*. But, **VIIIm7^{b5}** is “never” used (see important note on **VIIIm7^{b5}** above).
That leaves **V7** as only **Dominant**.

In 19th century classical harmony, working with *triads*, one recommended substituting the main chords “at third intervals”.

- **I** can be substituted by **IIIIm** (one third higher) or by **VIm** (one third lower)
That actually says exactly the same as above.
- **V** can be substituted by **VIIIm^{b5}** (one third higher) *or by IIIIm* (one third lower)
IIIIm as substitution for **V** is a new option. And yes, that sometimes works surprisingly well.¹ But **IIIIm7** (**Em7**) can never sound dominant without the 4th degree (F), and thus without tritone (F and B).
- **IV** can be substituted by **IIIm** (one third lower) *or by VIm* (one third higher)
VIm as a substitution for **IV** is a new option. Indeed, that also seems to work.
But **VIm7**, without the 4th degree (F), doesn’t sound subdominant (or unstable).

Conclusion

Re-harmonizing songs with chord substitution by function (or at third intervals) is always an option, with sometimes surprising and fun twists.² But this is often associated with loss of function. As a result, it doesn’t always *work* as one would wish.

- **I^A** is the only true **tonic**. **IIIIm7** and **VIm7** are *merely* substitution tonics.
- **IIIm7** and **VI^A** are both true **subdominants**.
- **V7** is the only true **dominant**. **VIIIm7^{b5}** is “*non-existent*.”

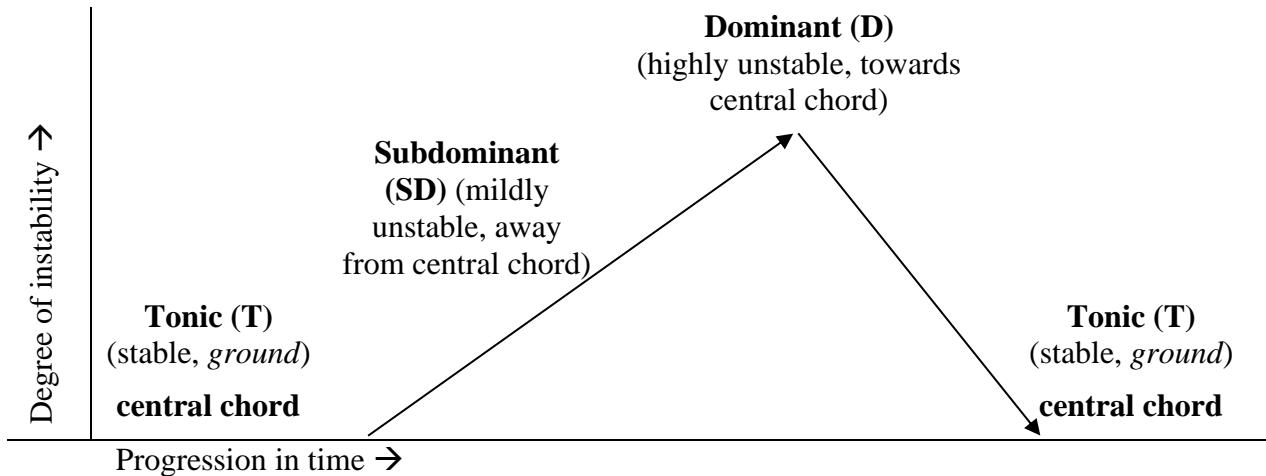
¹ Typically, in [Modal Non-Functional Harmony](#).

² See further [Re-harmonization of a Song using Chord Substitutions](#).

MAJOR FUNCTIONAL CADENCES

Cadences are chord progressions of minimum two chords that “fall” (Latin: *cadere* = to fall) to the central chord (or *ground*¹). 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., the roots of the chords) follow the *downward* circle of fifths

B E A D G C F they are *progressive*.

When cadences (the roots) 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* (going *down* in 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 (here²), the central chord I^Δ .

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 (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^Δ) it is called a *perfect* authentic cadence.

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

² We will see other possibilities later. See [Tonal Changes](#).

- When an authentic cadence doesn't end with the root in the bass *and* the root on top of the ending central chord I^Δ , it is called an *imperfect* authentic cadence.

perfect authentic cadence imperfect authentic cadence

As said many times before, in Jazz one doesn't take the (ending) chord's voicing into account. One leaves voicings to the personal taste of the performer. Jazz musicians thus do not differentiate perfect from imperfect authentic cadences.

The Plagal Cadence

IV^Δ	I^Δ
SD	T

The **plagal** cadence is a *retrogressive* way¹ (going *up* in fifths) of *going back* to the central chord (or of ending the song).

This cadence is 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 (= religious hymns) and Blues (influenced by Gospel).

The Complete IV-V Cadence

IV^Δ	$V7$	I^Δ
SD	D	T

This cadence is an authentic cadence also, since it ends with V7 to I^Δ . But this one is **complete** because it uses all three functions – SD, D and T – and because it uses all the tones of the parent scale (even played with classical triads on I and IV).²

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

¹ *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.

² The dominant V is mostly played in four-note chord, as V7 (the dominant seventh chord), when it resolves to the tonic I, in Classical music also (since the Renaissance), otherwise missing the tritone that is needed for *functional* 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

IV^Δ goes to $\text{I}^\Delta/5$ (with fifth in the bass) as *preparation* to the V7 chord, before ending with an authentic cadence V7 to I^Δ (IV^Δ to I^Δ : plagal – V7 to I^Δ : authentic).

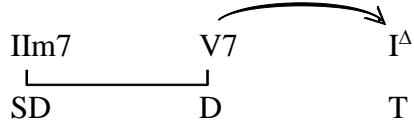
Note the typical classical use of triads instead of four-note chords, except on V7 (G7) needing the tritone to sound dominant. In contrast, the (jazz) analysis (the Roman numerals) suggests the possible extension to *four-note* chords (with sevenths) when improvising over this cadence.

The Complete Plagal Cadence

V7	IV^Δ	I^Δ
D	SD	T

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

The Complete II-V Cadence



The **II-V cadence** is another *complete authentic* cadence. It uses all three functions (SD, D, 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, and this is why it is used much more frequently in Jazz. In analysis, this cadence is always highlighted with a *hook* from IIIm7 to V7, symbolizing the *relation*², *down a perfect fifth, from IIIm7 to V7*.

Half Cadence and Turnaround

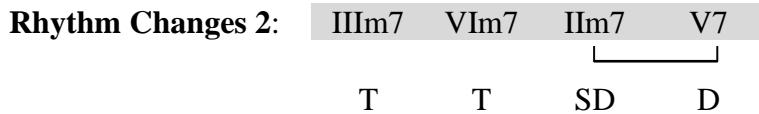
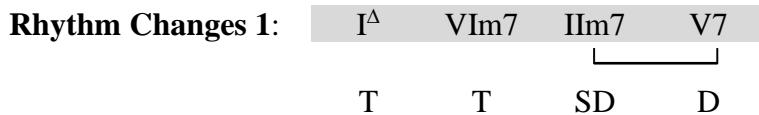
The **half cadence** is a cadence that does not end on the central chord I^Δ , but (mostly) on the dominant chord V7, creating the urge to continue the song. This cadence is typically used at the *end of a phrase or section*, “somewhere in the middle” of the song, *not* at the end of the song. However, in jazz, 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**.

¹ See [Blues Structure](#).

² See [Relative-II Chords and Secondary II-V Cadences](#).

“Rhythm Changes”

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

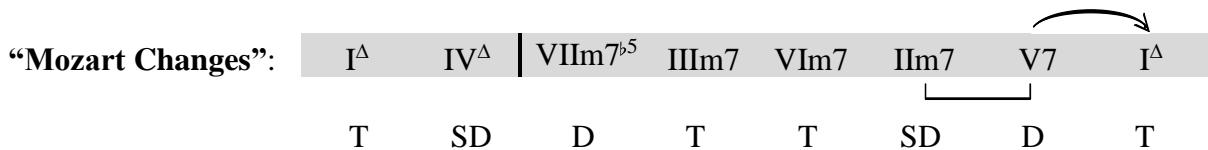


The *progressive* root motion of the chords is going down the circle of fifths.

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 called “Rhythm Changes” by jazz musicians, because they are used in the song “**I Got Rhythm**” by George Gershwin.¹

I Got Rhythm - George Gershwin (1898 - 1937)



Here also, the roots are in *progressive downward fifths*, with the exception of the change from IV Δ to VII $m7^b$ ⁵. At that point the root motion goes down a *diminished 5th* (a tritone) in order to stay diatonic (otherwise going to B \flat and thus leaving the key of C Major).

This cadence uses *all the diatonic chords*, even (arguably) the otherwise “never” used VII $m7^5$ ⁵. I call it “Mozart Changes” because it’s found in the next composition by Mozart.

¹ © 1930 Gershwin Publishing Corp. USA – Warner/Chappell North America, London W6 8BS

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

Chord analysis for the 2nd theme:

- I^Δ
- IV^Δ
- VIIIm⁷⁵
- IIIIm⁷
- VIm⁷
- IIIm⁷
- V⁷
- I^Δ
- Em/G
- Am
- D⁷/F#
- G

This sonata is in the key of C Major (no flats or sharps in the key signature). But this is the 2nd theme (B) that, according to sonata rules, is modulated one fifth higher (“to the dominant”), in G Major. That’s why the analysis is in G Major.

Note the typical classical use of *triads* (except on D7 – the very last note C is the seventh of the chord – needing the tritone to sound dominant). The analysis suggests *four-note* chords for improvisation.

Note also the use of lots of chord inversions, also typical for classical music, with an interesting and smooth melodic bass line and rich sounding voicings. The **bass** motion is *not* in downward fifths, though the **root** motion is.

The Deceptive Cadence

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

IV^Δ V7 VIm⁷ (*instead of* I^Δ)

But the cadence is deceptive *whatever chord* ends the cadence *instead of* I^Δ (or instead of the target¹ chord): VIm⁷, IIIm⁷ (substitution tonics) or *any other chord*.

This ends the section on **functional Major cadences**.

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. We still have to learn about secondary, minor, modal and tritone substitution 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.

¹ Another chord (than I^Δ) can be the expected target chord of a secondary dominant.
(See [Secondary V7 Dominant Chords](#).)

ANALYSIS OF A SONG IN MAJOR

Lots of Jazz standards are *Choruses* from (old Broadway) musical songs. These choruses were very popular, and for jazz musicians, an ideal opportunity to give free play to their improvising skills.

A *chorus* is very often written in AABA form, like ‘**Blue Moon**’ by Richard Rodgers.¹ Below, only the first part (“the A”) is analyzed (for now).

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

The harmonic analysis for the first staff of the score is as follows:

- Measure 1: I^Δ (T)
- Measure 2: VIm^7 (T)
- Measure 3: $IIIm^7$ (SD)
- Measure 4: $B^{\flat}7$ (D)
- Measure 5: $E^{\flat}\Delta$ (T)
- Measure 6: Cm^7 (T)
- Measure 7: Fm^7 (SD)
- Measure 8: $B^{\flat}7$ (D)

The harmonic analysis for the second staff is as follows:

- Measure 1: $E^{\flat}\Delta$ (T)
- Measure 2: Cm^7 (T)
- Measure 3: Fm^7 (SD)
- Measure 4: $B^{\flat}7sus^4$ (SD(D)*)
- Measure 5: $E^{\flat}\Delta$ (T)
- Measure 6: (Cm^7) (T)
- Measure 7: Fm^7 (SD)
- Measure 8: $B^{\flat}7$ (D)

Steps for Analyzing a Song

Step 1: Arrows → authentic cadences

Search for dominant chords. They’re easy to find, they’re the only 7-chords.

All other chords are either Δ-chords, m7-chords or m7^{b5}-chords.

Diatonic series: $I^\Delta - IIIm7 - IIIIm7 - IV^\Delta - V7 - VIm7 - VIIIm7^{b5}$

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

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

* The third $B^{\flat}7$ is actually a $B^{\flat}7sus4$. 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.³

¹ © Metro-Goldwyn-Mayer Inc. 1934 (renewed 1961)

² Again, we’ll see that the target chords of dominant chords won’t always be I^Δ . (See [Secondary V7 Dominant Chords](#).)

³ See [The V7sus4 Chord](#).

Step 2: Hooks → II-V cadences

Search for **m7-** (or **m7^{b5}-¹**) chords. Once located,
 (1) check 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, highlight with a **hook** going to the 7-chord.

In ‘Blue Moon’, Cm7 is never followed by a 7-chord. Ignore.
 Fm7, however, is always followed by Bb7, which is down a perfect fifth. Every Fm7 is highlighted with a hook going to the Bb7 chord. 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 with ‘Blue Moon’), certainly when you’re a novice analyst. Here are a few clues.

- Look at the **key signature**.

‘Blue Moon’: three flats in the key signature => The song is either in E♭ Major or in C minor.
 (Remember the [Relative minor Scales in the Circle of Fifths](#).)

- Look at the **ending chord**. This should be the central (*finalis*) chord I^Δ.

‘Blue Moon’: E♭^Δ => the song is in E♭ Major.

- Look at the **hooks and arrows** (step 1 and 2).

‘Blue Moon’: hooks and arrows (II-V cadences Fm7 Bb7) point to E♭^Δ (I^Δ)
 => the song is in E♭ Major.

If still in doubt ...

- Look at **both Δ-chords**.

One of them should be I^Δ, while the other should be IV^Δ. A simple count offers a definitive answer. (Not applicable to ‘Blue Moon’.)

- **Always transcribe the chord type** (next to the Roman numerals).

So, you can check if the analysis fits in the diatonic chord series (I^Δ – II^{m7} – III^{m7} – IV^Δ – V⁷ – VI^{m7} – VII^{b5}). If it doesn’t 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 the functions are known.

¹ See [The minor II^{m7b5}-V⁷ Cadence](#).

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♭ 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^{Δ} VIm7 IIIm7 V7) that repeat “endlessly”.
- The last three chords, in parentheses, are a turnaround. These are only played when one wants to play the song again from the beginning (“da capo”, “from the top”).

Transposition

A useful application, after analysis, is transposition.

Having translated all the chords into Roman numerals, you should now be able to transpose the song easily into any other (Major) key (e.g., because the song is too high, or too 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** (change the chords to create new colors) without affecting the essence of the piece (without changing the functions of the chords¹).

We've learned that:

- I^Δ , $IIIIm7$ and $VIm7$, all **T**(onic) chords, can *substitute* each other.
- $IIIm7$ and IV^Δ , both **SD** (subdominant) chords, can *substitute* each other.
- $V7$ is the only **D**(ominant) chord. ($VIIIm7^{b5}$ being “never” used.)

Here is a possible re-harmonization for ‘Blue Moon’²:

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

The musical score consists of two staves of music in G major (two sharps). The first staff starts with a key signature of one sharp. The second staff starts with a key signature of two sharps. Below the music, the harmonic analysis is written in a style similar to Romanesque notation, indicating the function of each chord (T, SD, D) and its substitution (I Δ , II $Im7$, III $Im7$, IV Δ , V 7 , VI $Im7$, VII $Im7$). The analysis shows various substitutions and harmonic progressions, such as the replacement of I^Δ by $IIIIm7$ in bar 3 and $VIIm7$ in bar 5, and the use of $Cm7/B\flat$ in bar 5 as an inversion of $Cm7$. The score ends with a turnaround in bar 7.

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

- Bar 3: $Gm7$ ($IIIIm7$) replaces I^Δ (both **T**-chords). (→ Now Rhythm Changes 2)
The original *authentic* cadence ($V7$ to I^Δ) is now *deceptive* ($V7$ to $IIIIm7$)
→ no more arrow.
- Bar 5: $Cm7$ ($VIm7$) replaces I^Δ (both **T**-chords).
The original *authentic* cadence ($V7$ to I^Δ) is now *deceptive* ($V7$ to $VIm7$)
→ no more arrow.
- Bar 5: $Cm7/B\flat$, an inversion of the chord using $\flat 7$ in the bass, replaces $Cm7$ (in root position) to create a moving bass line going to $A\flat$. This is *not* a chord substitution, since the chord stays the same as the original chord.
- Bar 6: $A\flat^\Delta$ (IV^Δ) replaces $IIIm7$ (both **SD** chords).
The original II-V cadence is now a IV-V cadence → no more hook.
- Bar 7: The ending I^Δ chord is *not* replaced.
Because $IIIIm7$ or $VIm7$ wouldn't sound as an ending.
 I^Δ is the only possible *finalis* chord.

¹ Though, we will see that it is also possible to re-harmonize with *secondary cadences*, additional chords, in between the chords. See [Tonal Changes](#).

² © Metro-Goldwyn-Mayer Inc. 1934 (renewed 1961)

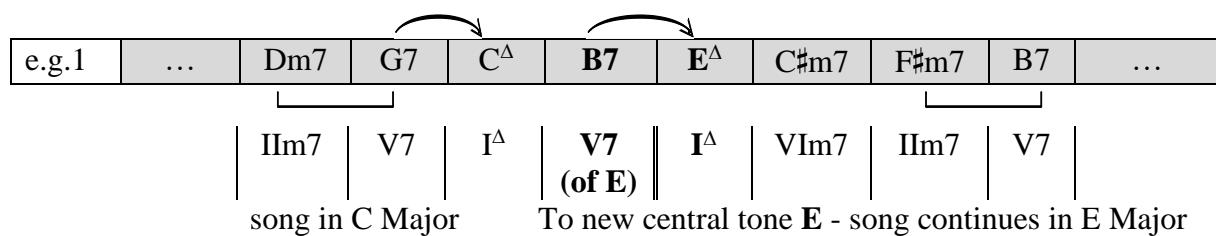
MODULATION TO OTHER KEYS

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

The announced modulation

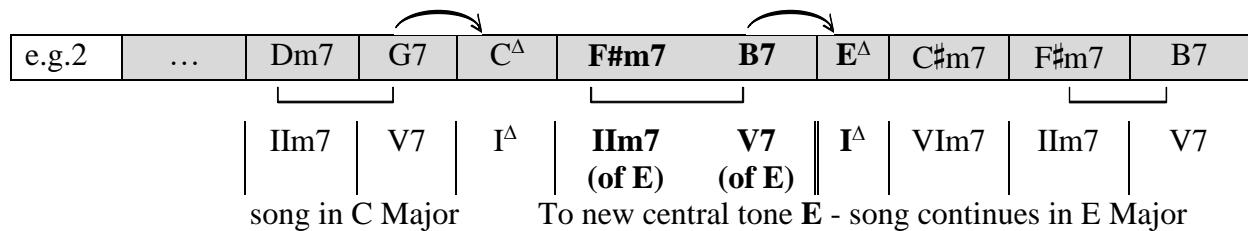
Using an authentic cadence

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* ² (also authentic) cadence:



Using common “pivotal” chords

Still smoother is the use of common chords, also called **pivotal chords**. But only *neighboring keys* (keys close to each other in the circle of fifths ³, maximum two fifths away) and the

¹ We'll see later that most modulations *can* also (and maybe, should) be seen as *modal changes*. The theory of Arnold Schoenberg (1874-1951), on which jazz harmony is largely based, teaches us that it is not *that obvious* to escape the attraction of the "very first" *main* central tone, and that most composers actually continue to "circle" around that main central tone.

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

³ Reminder of the Circle of Fifths:

C _b	G _b	D _b	A _b	E _b	B _b	F	C	G	D	A	E	B	F [#]	C [#]
7 _b	6 _b	5 _b	4 _b	3 _b	2 _b	1 _b	0	1 [#]	2 [#]	3 [#]	4 [#]	5 [#]	6 [#]	7 [#]
A _b m	E _b m	B _b m	Fm	Cm	Gm	Dm	Am	Em	Bm	F [#] m	C [#] m	G [#] m	D [#] m	A [#] m

according relative keys (keys that are above one another – Major and minor – in the circle of fifths) share 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^Δ	Dm7	Em7	F^Δ	G7	Am7	Bm7 ^{b5}	(C^Δ)	(Dm7)	(C Major chords)
E ^A	F#m7	G#m7	A ^A	B7	C#m7	D#m7 ^{b5}	(E Major chords)		

C Major and D Major (only two fifths away from each other) share **one** common chord:

C^Δ	Dm7	Em7	F^Δ	G7	Am7	Bm7 ^{b5}	(C^Δ)	(C Major chords)
D ^A	Em7	F#m7	G ^A	A7	Bm7	C#m7 ^{b5}	(D Major chords)	

Moreover, IIIm7 (Em7) of C Major happens to be IIIm7 of D Major, making a very smooth modulation possible with that common chord:

e.g.3	...	Dm7	G7	C^Δ	Em7	A7	D^A	Bm7	Em7	A7
In C Major		IIm7	V7	I ^A	IIIm7		D^A			
In D Major		song in C Major			IIIm7	V7	I^A	VIm7	IIm7	V7

To new central tone **D** - song continues in D Major

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

- (1) the *primary* function: IIIm7 in C Major
- (2) the *secondary* function: IIm7 in D Major

The primary function always prevails on the secondary function. This means that one hears the common chord (still) in the original key, because our hearing cannot yet be aware of the new key that is yet to arrive. One doesn't hear the modulation with certainty until it is confirmed by the new dominant chord. However, it is possible, but usually rather "hard", to announce the modulation already by letting the secondary function prevail (by using F# and C# in the melody, for example), and thus let the new key be heard immediately, from the first onset of the common chord.¹

Another classical example of a modulation with a pivotal chord:

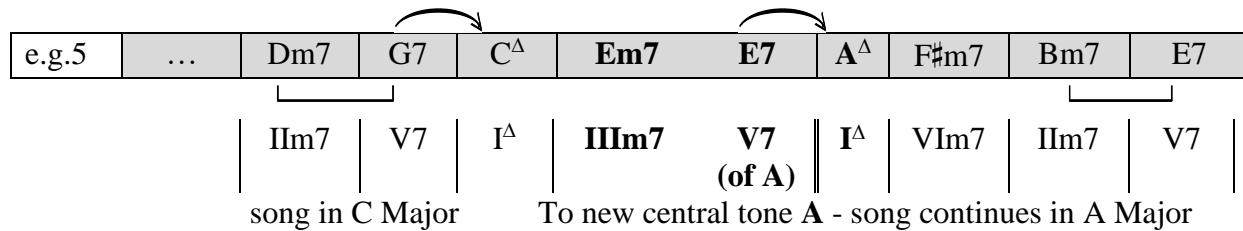
e.g.4	...	Dm7	G7	C^Δ	D7	G^A	Em7	Am7	D7
In C Major		IIm7	V7	I ^A					
In G Major		song in C Major		IV^A	V7	I^A	VIm7	IIm7	V7

To new central tone **G** - song continues in G Major

¹ Announced modulations often occur with intermediate steps, not going suddenly to the new key.

Using common “pivotal” bass tones

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



Em7 (III^m7 in C Major) is played first, followed by E7 (V7 of A).

Both chords share the same bass tone.

One could skip the Em7 (III^m7 in C Major), and play the E7 (V7 of A) immediately, 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. Here especially the relationship, or lack thereof, between the keys will play a major role.

Important note on modulations:

Just like at the end of the section on [Major Functional Cadences](#), 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

Now, let's analyze the B-part of 'Blue Moon'¹:

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

Fm⁷ B^{b7} E^{bΔ} Cm⁷ Fm⁷ B^{b7} E^{bΔ}
 II^{m7} V⁷ I^Δ VI^{m7} II^{m7} V⁷ I^Δ
 Parent Scale: E^b Major

A^bm⁷ D^{b7} G^{bΔ} B^b/F F⁷ B^{b7sus4} B^{b7}
 II^{m7} V⁷ I^Δ I^Δ V⁷ V^{7sus4} V⁷
 G^b Major _____ B^b Major _____ E^b Major _____

Bar 5: Announced modulation to G^b major, with II-V cadence => I.

Indeed, A^bm7, D^{b7} and G^{bΔ} are non-diatonic chords in E^b major.

- A^b (as IV) should be Δ, and not m7.
- D^b and G^b are not even diatonic notes in E^b major.

Bar 7: Unannounced modulation to B^b major.

Rodgers uses **B^b/F triad** (*without maj7*²) to make the modulation sound *stepwise*: a sounding D natural (also in the melody), but not yet sounding A natural (or **maj7**). The F in the bass is a preparation for the next chord.

With **F7** (V7), A (third of the chord) is audible for the first time. The modulation is (*partially*) confirmed. The *final* confirmation should come with the final target chord, B^b in bar 8.

Bar 8: Announced modulation, back to E^b major, with only the V7 => I cadence.

(E^{bΔ} is the first chord of the following A-part, not visible above.)

The **B^b7sus4 – B^b7** with **minor** seventh. Instead of definitively confirming the modulation to B^b major with a **B^bmaj7**, Rodgers uses the *pivotal bass* technique here: B^b indeed, but B^b7, now dominant (V7) of the *main key* E^b.

Sus4 is also intended to allow for smoother (stepwise) modulation.³

The **Parent Scale** line, at the bottom, indicates the modulations (and keys).

¹ © Metro-Goldwyn-Mayer Inc. 1934 (renewed 1961)

² The I^Δ (or Imaj7) in the analysis is correct. In improvisation, one would (could) play the **maj7**.

³ See [The V7sus4 Chord](#).

Chord Scales in Major

To build **chord scales** for the diatonic chords, we add, for each chord, the superstructure (tensions and avoids) in a stepped scale (instead of the stacked thirds).

- Each chord scale starts (obviously) on the root of the chord.
 - Between the chord tones, we only use *diatonic* notes (evidently). (No chromatic tones: e.g., no sharps or flats in C major.)
 - Each chord scale is named after, and is also exactly the same as, an old church mode.¹
 - Tones *that are a semitone above a chord tone are avoids* (Av).
- Other superstructure tones are **tensions** (T).

The figure consists of six musical staves, each representing a different chord scale. Each staff begins with a treble clef and a key signature. Below the staff, the notes are numbered 1 through 7, with Roman numerals indicating the chord tones and lowercase letters indicating the avoid tones. The scales are:

- C Δ [Ionian]**: Notes 1, 2, 3, 4, 5, 6, 7. Chord tones: 1, 3, 5. Avoid tones: 2 (Av \flat 9), 4 (Av11), 6 (T \flat 13).
- Dm7 [Dorian]**: Notes 1, 2, 3, 4, 5, 6, 7. Chord tones: 1, 2, 3. Avoid tones: 4 (T \flat 9), 6 (T \flat 11), 7 (T \flat 13).
- Em7 [Phrygian]**: Notes 1, 2, 3, 4, 5, 6, 7. Chord tones: 1, 2, 3. Avoid tones: 4 (T \flat 11), 6 (Av \flat 13), 7 (Av \flat 13).
- F Δ [Lydian]**: Notes 1, 2, 3, 4, 5, 6, 7. Chord tones: 1, 2, 3. Avoid tones: 4 (T \sharp 11), 6 (T \sharp 13).
- G7 [Mixolydian]**: Notes 1, 2, 3, 4, 5, 6, 7. Chord tones: 1, 2, 3, 5. Avoid tones: 4 (Av11), 6 (T \flat 13), 7 (Av \flat 13).
- Am7 [Aeolian]**: Notes 1, 2, 3, 4, 5, 6, 7. Chord tones: 1, 2, 3, 5. Avoid tones: 4 (T \flat 11), 6 (Av \flat 13), 7 (Av \flat 13).
- Bm7 \flat 5 [Locrian]**: Notes 1, 2, 3, 4, 5, 6, 7. Chord tones: 1, 2, 3, 5. Avoid tones: 4 (T \flat 11), 6 (T \flat 13), 7 (T \flat 13).

Note that the *avoid* tones are always:

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

Natural Scales

All of these chord scales are *natural* scales (or modes). They can all be played on a diatonic instrument, an instrument that can only play one 7-tone tonality: most harmonicas (or mouth harps), some accordions, most bagpipes ... A good (but somewhat absurd) example of a diatonic instrument is "a piano with no black keys".

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

CHARACTERISTICS OF THE CHORD SCALES

This [chord scale] is this chord type with ...		
Matches	In C	Mode	Alternate name	Type	Tensions	Avoids
I ^Δ	C ^Δ	[Ionian]	Major	Δ	9, 13	11
IIIm7	Dm7	[Dorian]	-	m7	9, 11, 13 ¹	No avoids
IIIIm7	Em7	[Phrygian]	-	m7	11	♭9, ♭13 ²
IV ^Δ	F ^Δ	[Lydian]	-	Δ	9, ♯11 ³ , 13	No avoids
V7	G7	[Mixolydian]	-	7	9, 13	11 (or sus4 ⁴)
VIm7	Am7	[Aeolian]	Minor (natural)	m7	9, 11	♭13
VIIIm7 ^{♭5}	Bm7 ^{♭5}	[Locrian]	-	m7 ^{♭5}	11, ♭13	♭9

Learn the chord scales by heart:⁵

Remember the order of the chord scales in Major, and which chord they match.

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

I^Δ IIIm7 IIIIm7 IV^Δ V7 VIm7 VIIIm7^{♭5}

Also remember how they *differ* from each other.

So, also memorize their **characteristic degrees** (below).

¹ T13 (tension 13) is mentioned in most theory books as an *avoid* on the IIIm7 chord.

Yet it is a **whole tone** above a chord tone. But, with T13 (B), IIIm7 contains the tritone (along with the minor third F), and sounds dominant instead of subdominant. This is certainly true for a [Dorian] **IIIm7**.

But, T13 sounds **typically Dorian** (see characteristic degrees). And, we'll encounter other [Dorian] chords (not IIIm7) that definitely have 13 as an available tension *and* as a typical Dorian color option.

² One often encounters the IIIIm7 (Em7) chord with *avoid* ♭13 (C) in the melody.

This is then actually (or at least, it sounds like) a I^Δ9 in inversion on its third (I^Δ9/3 or C^Δ9/E).

³ T♯11 is *never* considered avoid on the IV^Δ chord. Though the same reasoning applies here as for IIIm7:

With T♯11 (B), IV^Δ contains the tritone (together with root F), and sounds dominant instead of subdominant.

However, ♯11 sounds **typically Lydian**. Therefore, this tension is often added to the IV^Δ [Lydian] chord.

⁴ See [The V7sus4 Chord](#).

⁵ See also [Mastering the Chord Scales](#).

Characteristic Degrees of the Chord Scales

The **characteristic tone** of a mode will be most important for [Modal Non-Functional Harmony](#).¹ For now, it's useful to think of it as a *typical target tone* that you can use in melodies, improvisations, and chord accompaniments, to convey the *typical color of the chord scale*, as long as it's not an avoid. Although an avoid can be a *characteristic approach tone* of the chord tone just below.²

Mode	Characteristic tone	Compared to	... with
Ionian (<i>major</i>)	A _v 11	Lydian	T _# 11
Dorian	T13	Aeolian (<i>minor</i>)	A _v _b 13
Phrygian	A _v _b 9	Aeolian (<i>minor</i>)	T9
Lydian	T _# 11	Ionian (<i>major</i>)	A _v 11
Mixolydian	_b 7 A _v 11	Ionian (<i>major</i>) Lydian _b 7 ³	7 T _# 11
Aeolian (<i>minor</i>)	A _v _b 13	Dorian	T13
Locrian	_b 5	Phrygian	5

Important notes

Tensions (T) are tones that are *harmonically* available: they can be *added to the chord*. Except when they affect the function of the chord (see footnotes on previous page).

Avoids (Av) are (in theory) *not* harmonically available: they are to be *avoided* in the chord. But they're always *melodically* available. There is a rule of thumb that says they shouldn't sound longer than one beat of the bar⁴ ...

- As an ascending or descending *passage tone* between chord notes.
- As a *descending approach tone (leading tone)* of the chord note just below it.

You will often have to make a choice between

- A *clear functional sound of the chord* (necessary in functional harmony)
- The **modal color of the chord** (without taking the functionality into account)

It's a matter of personal taste. But, beware, when one starts mixing too many colors at once, one ends up with "a fuzzy gray" (and with chords without functionality).

¹ See also [Characteristic Tone](#).

² See [Mastering the Avoids](#).

³ See [The Four “Lydian” Dominants](#).

⁴ Yet, longer sometimes works.

PARENT SCALES AND CHORD SCALES IN ANALYSIS

Blue Moon - Richard Rodgers (1902 - 1979)

A

E[♭]Δ Cm⁷ Fm⁷ B[♭]⁷ E[♭]Δ Cm⁷ Fm⁷ B[♭]⁷
I^Δ VIm⁷ IIIm⁷ V⁷ I^Δ VIm⁷ IIIm⁷ V⁷
Chord Scales: [Ion] [Aeol] [Dor] [Mixo] [Ion] [Aeol] [Dor] [Mixo]
Parent Scale: E♭Major

A2

E[♭]Δ Cm⁷ Fm⁷ B[♭]⁷ Gm⁷ Cm⁷ Fm⁷ B[♭]⁷
I^Δ VIm⁷ IIIm⁷ V⁷ IIIIm⁷ VIm⁷ IIIm⁷ V⁷
[Ion] [Aeol] [Dor] [Mixo] [Phr] [Aeol] [Dor] [Mixo]

B

Fm⁷ B[♭]⁷ E[♭]Δ Cm⁷ Fm⁷ B[♭]⁷ E[♭]Δ
IIIm⁷ V⁷ I^Δ VIm⁷ IIIm⁷ V⁷ I^Δ
[Dor] [Mixo] [Ion] [Aeol] [Dor] [Mixo] [Ion]
E♭ Major
A♭m⁷ D♭⁷ G♭Δ B♭/F F⁷ B♭⁷sus⁴ B♭⁷
IIIm⁷ V⁷ I^Δ I^Δ V⁷ V⁷ V⁷sus⁴ V⁷
[Dor] [Mixo] [Ion] [Ion] [Mixo] [Mixo] [Mixo] [Mixo]
G♭Major
B♭Major
E♭Major

A3

E[♭]Δ Cm⁷ Fm⁷ B[♭]⁷ Gm⁷ Cm⁷ Fm⁷ B[♭]⁷
I^Δ VIm⁷ IIIm⁷ V⁷ IIIIm⁷ VIm⁷ IIIm⁷ V⁷
[Ion] [Aeol] [Dor] [Mixo] [Phr] [Aeol] [Dor] [Mixo]

END of the song (Turnaround)

Cm⁷ Cm⁷/B[♭] A[♭]^Δ B[♭]⁷sus⁴ E[♭]^Δ (Cm⁷ Fm⁷ B[♭]⁷)
VIm⁷ VIm⁷ IV^Δ V⁷sus⁴ [Mixo] I^Δ (VIm⁷ IIIm⁷ V⁷)
[Aeol] [Aeol] [Lyd] [Mixo] [Ion] ([Aeol] [Dor] [Mixo])

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 modulations to G♭ Major and to B♭ Major.
- 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.

The Roman numerals:

- Every chord used is translated into a functional Roman numeral,
 - (1) indicating the chord degree in the parent scale,
 - (2) giving opportunity to check if all chord types fit the diatonic series, and
 - (3) giving 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.
It's telling us in which key a particular fragment of the song is written.

ANALYSIS OF A MINOR SONG IN ITS RELATIVE MAJOR KEY

Before we can understand [minor Functional Harmony](#) in depth, it's useful to see what functional harmony is all about, which possibilities it offers, such as [Tonal Changes](#), [Dominant Chord Scales](#), [Approach Chords and Auxiliary Chords](#), all subjects that will gradually provide an introduction to the more complex “minor harmony”.

But of course, in the meantime, you will come across pieces in minor that you already want to work on. Most jazz musicians avoid the complexity of minor harmony by analyzing minor pieces *assuming* they are in the relative major key.

The next song, ‘**Autumn Leaves**’ (Joseph Kosma, originally titled ‘**Les feuilles mortes**’) ¹, is written in G minor. However, it’s possible to analyze it in B♭ major, the relative major key. The result of the analysis will be (*almost*) the same as if it had been analyzed in G minor. We’ll see later how to analyze it in G minor. 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 looks like:

Autumn Leaves - Joseph Kosma (1905 - 1969)

The musical score consists of four staves of chords, each with its name and analysis below it. The first staff starts with Cm⁷, followed by IIIm⁷ [Dor], V⁷ [Mixo], I⁴ [Ion], and IV⁴ [Lyd]. The second staff starts with Am⁷b⁵, followed by VIIIm⁷b⁵ [Locr], V⁷/VI* [?], and VIIm⁷ [Aeol] Bb major. The third staff starts with Cm⁷, followed by IIIm⁷ [Dor], V⁷ [Mixo], I⁴ [Ion], and IV⁴ [Lyd]. The fourth staff starts with Am⁷b⁵, followed by VIIIm⁷b⁵ [Locr], V⁷/VI* [?], and VIIm⁷ [Aeol] Bb major.

¹ © 1947, 1950, 1987 Enoch Et Cie. (renewed 1975, 1978)

Notes on the analysis

Structure of the song:

- This is only the A-part of the song. It is composed of two musical phrases that are harmonically the same, each ending on a Gm chord (VIm⁽⁷⁾).
Both phrases differ at the end only in melody.

The hooks and arrows:

- Hook are II-V cadences.

There is also a minor II-V cadence, *without* a hook,
which I'd rather leave out for now.¹

- Arrow are authentic cadences

One is a *secondary cadence*, D7 (V7/VI*).
More on this later.²

The Roman numerals:

- Every chord used is translated into a Roman numeral,
(1) indicating the chord degree in the *relative Major* parent scale of *B♭ Major*,
(2) giving us the opportunity to check if all chord types fit the *Major* diatonic series

One chord, D7 (V7/VI*), doesn't fit the series.

- (3) giving us information about the function of the chord

The latter is *not quite right*,
since the piece is actually in G minor.³

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.

One chord scale, at D7 (V7/VI*), is unknown for now.

The parent scales:

- The parent scale-line indicates the modulations (the keys).

One key, for D7 (V7/VI*), is unknown for now.

¹ See [The minor II^m7b5-V7 Cadence](#).

² See [Secondary V7 Dominant Chords](#).

³ E^b^A in bar 4 and 12 is a Tonic chord in G minor, not a Subdominant chord like in B♭ Major.

See [Harmonic Functions of the Chords](#) under section [minor Functional Harmony](#).

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 **brightness**. The notion of brightness is a typical modal concept. 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 ^A)	Lydian	1 – 2 – 3 – #4 – 5 – 6 – 7	1 # (1 raised)	#4 (4 th is raised)
C (I ^A)	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 th 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 ^{b5})	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 Lydian	C Ionian	G Mixolydian	D Dorian	A Aeolian	E Phrygian	B Locrian
-------------	-------------	-----------------	-------------	--------------	---------------	--------------

Note also that the altered degrees are also ordered according to the circle of fifths, if we apply the mode constructions to all *parallel* scales of C: C Lydian, C Ionian, C Mixolydian, etc.

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

Arithmetic Translation of de Modes

Just as we had an arithmetic translation of the *number of flats or sharps* for key signatures (see the [Circle of Fifths](#)) ...

C _b	G _b	D _b	A _b	E _b	B _b	F	C	G	D	A	E	B	F _#	C _#
7 _b	6 _b	5 _b	4 _b	3 _b	2 _b	1 _b	0	1 _#	2 _#	3 _#	4 _#	5 _#	6 _#	7 _#
-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* for modes.

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

What's the tone composition of e.g., F_# Phrygian?

Relative to a known Major Scale

- Phrygian is the mode for the IIIm7 chord of the Major parent scale.
- F_# is the third degree (III) of D Major.
- D Major has 2 sharps – F_#, C_# – in the key signature.
- Consequently, F_# Phrygian has also – F_#, C_# – in its tone composition.

Parallel to its own Major Scale

- F_# Major has 6 sharps in its key signature:

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

1	flat 2	flat 3	4	5	flat 6	flat 7	8=1
F _#	G	A	B	C _#	D	E	F _#

Even easier, using the **arithmetic translations** (see above):

- 6 (sharps in F_# Major) – 4 (lowered degrees in Phrygian) = 2 sharps in F_# Phrygian

A few more examples: D Phrygian? E Locrian? B_b 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_b Major) +1 (raised degree in Lydian) = -1 flat in B_b Lydian

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 ¹, and we need a new one: the Lydian tetrachord.²

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 made up of tetrachords connected by one whole tone (WT), as is customary so far. Exceptions are the Lydian and Locrian modes, with tetrachords connected by one semitone (st):

The diagram illustrates the construction of seven modes from tetrachords:

- LYDIAN MODE:** C Lydian tetrachord (st) G Major tetrachord
- IONIAN MODE:** C Major tetrachord (WT) G Major tetrachord
- MIXOLYDIAN MODE:** C Major tetrachord (WT) G minor tetrachord
- DORIAN MODE:** C minor tetrachord (WT) G minor tetrachord
- AEOLIAN MODE:** C minor tetrachord (WT) G Phrygian tetrachord
- PHRYGIAN MODE:** C Phrygian tetrachord (WT) G Phrygian tetrachord
- LOCRIAN MODE:** C Phrygian tetrachord (st) G \flat Lydian tetrachord

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

¹ We've also learned the Harmonic tetrachord, not relevant here.

² Which we've actually seen in the part on [Concepts Needed – The Lydian Tetrachord](#).

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 for each chord, in all keys.

This is where panic struck me, as a young musician. I thought I would never be able to remember all those chord scales, let alone *master* them. To avoid discouragement, and to be able to *play* music (instead of *thinking* music), some tips are more than welcome.

The best way to start is to play *the parent scale over all chords* (instead of one chord scale per chord). That works too, and it's certainly a lot easier.

Besides, when you start playing the parent scale on the other scale degrees, you actually play the chord scales.

Start (en end) on	Parent scale		= Chord scale
1 st degree	Major	[Mode I]	[Ionian]
2 nd degree		[Mode II]	[Dorian]
3 rd degree		[Mode III]	[Phrygian]
4 th degree		[Mode IV]	[Lydian]
5 th degree		[Mode V]	[Mixolydian]
6 th degree		[Mode VI]	[Aeolian]
7 th degree		[Mode VII]	[Locrian]

So why even bother thinking chord scales?

Because an (improvised) melody (but also a riff, a fill, an arpeggio, ...) is based on the *chords* that accompany it. It does this by moving from one *chord note* to another, with or without approach tones and passage tones in between those chord notes.

"The melody plays on and around the chord."

So, it's best to learn all the chords first, because a **chord scale** is really just a **chord**, with chord notes, tensions (*additional* chord notes) and avoids (*no* chord notes). Being able to locate chord tones, tensions and avoids is essential for a good phrasing, for a clear construction of the melody.

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

Mastering the Chord Tones

Comping

One must always, even before committing to an improvisation, practice the chord accompaniment (or **comping**) of the song.

One has to *develop attention for the tone composition of the chord*. This is pretty straightforward for pianists. But guitarists should not only learn to play their chords from *tabs*, they should also try to e.g., make up new chord positions. Accordionists should not only play with *chord buttons*; they should also play the chords with the right hand instead of only with the left. And melodists, who "can't play chords", *can play chords*, but they have to play *broken chords* (also called *arpeggios*), i.e., they have to play the chords note by note.

And so, they too can accompany with chord motifs (= arpeggios).

¹ This is a theory book, *not an improvisation method*. The exercises suggested are just some basic ideas on how to put theory into practice. For books on improvisation, see [Sources](#).

Building up chord knowledge

1. Learn to play triads first (simple pop music). ¹
2. Gradually add some four-note chords: 7-, m7-, maj7-chords (rich pop).
3. Then, *always* play *all* chords as four-note chords, with *all possible* four-note chords (jazz lead sheets).
4. Gradually learn to add tensions, tension after tension:
9-chords => five-note chords, 11-chords => six-note chords, 13-chords => seven-note chords (improvised jazz) (see below).

Broken chords

Play broken chords in various possible orders, e.g., from root to seventh (1 - 3 - 5 - 7), or vice versa (7 - 5 - 3 - 1), or any predetermined, upward, downward or random order you wish.

Then try to make up real musical phrases using only those chord notes.

Target tone

For your melodic improvisations, select one target tone for each chord (root, third, fifth or seventh), and try to *hit* that target note, preferably on the first beat of each chord change. You must then, of course, play towards that target tone.

Choosing *guide tones* as target notes (the chord tones that emphasize the type, and color, of the chord: third and seventh) should make the phrasing even clearer.

Chord connections

- **The semitone resolution:** Find a semitone connection between successive chords: a *leading tone* that is one semitone above or below a chord note of the next chord. The semitone resolution is the strongest melodic connection, the best way to convey 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:** You can also “connect” tones that exist in both consecutive chords. “Connecting”, in this case, means just holding them on over the chord change. You can of course also repeat them. And since common tones don't have to be resolved, you can also jump from those tones to any other chord tone of the new chord, i.e., without connection.

Mastering the Tensions

Now focus on tensions only. Start with tension 9, as it can, in principle ², be added to any chord.

And explore further, tension after tension, all possibilities. For help, use the **Tensions Tool Kit** on the next page. It is a list of practical rules for adding tensions to chords.

¹ Read my book [Playing the piano with chords – Note reading for pianists](#).

² A tension should be diatonic to the parent scale. You'll hear when the tension *doesn't fit*.

Tensions Tool Kit

A dominant chord (V7) can take any tension¹, BUT ...

- It's either 9 or $\flat 9/\sharp 9$ ² – 11 or $\sharp 11$ – 13 or $\flat 13$
(the *natural*, or the *altered* tension)
- 11 can only be added with the omission of the Major 3rd (= **sus4**)³
- With the consecutive semitones ($\sharp 11 - 5 - \flat 13$) it's best to omit the 5th

For other chord types:

- Tension 9 is **always** available
- Tension 11 only on **minor** (m) chords
(except sus4-effect on Major chords)
- Tension $\sharp 11$ only on **maj7** (Δ) chords
- Tension 13 is **always** available
(though, remember the caveat on the [Dorian] IIIm7: tritone!!)
- Tension $\flat 13$ only on **m7 \flat 5** chords

... as long as these tensions are diatonic to the parent scale⁴.

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

Playing “in” and “out”

Chord tones and **tensions** are the **target tones**. These are the harmonically available tones. The use of (only) these notes is called "**to play in**".

Avoids are also "in" the key, "in" the chord scale, but "not in" the chord.

Avoids and *chromatic tones* are *approach tones* to the target notes. The use of (only) approach tones, non-harmonically available tones, is called "*to play out*." There are many creative theories about how to play "out" and then resolve to "in".⁵

Here are a few basic ideas to get started.

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, but rather "beware with these tones, because they create an expectation to be resolved down a semitone". You can indeed create interesting effects with them.

You can integrate an avoid tone as a *suspended tone* by hitting the avoid tone together with the chord, *without* the chord tone that is a semitone below. Then you resolve the avoid tone to

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

² $\flat 9$ 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.

³ See [The V7sus4 Chord](#).

⁴ Except when allowing [Modal Changes](#) ("new" diatonic tones).

⁵ Not the purpose of this book. We will mainly see how to play "in", assuming that you then also know how to play "out".

the underlying chord tone, essentially using the avoid to *approach* a chord tone within the chord.

That *suspension* effect is known to classical composers as the *appoggiatura* (or a *delay*). It's not very common (in jazz and pop) with most avoid tones.¹ 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.)

The “*suspension*” (**sus**) – actually, the *appoggiatura* – was common in classical music before the 19th century, when tensions were not yet considered additional chord tones, thus being “avoids” anyway. Usually, the *suspension* is a tone that lingers from the previous chord, as in the example below.

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

'modern' chord symbols

C C/E Gsus⁴ G Dm¹¹ Dm/F Am¹¹ Am

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

4 and 11 are (is) actually the same tension. **Sus4**, in (modern) chord symbols, indicates that there's an *avoid* that is expected to resolve to the major third. **11** indicates a tension that doesn't require a resolution.

Chromatic approaches

The suspended tone could also be a chromatic tone. Chromatic tones are not part of the chord scale (or parent scale), they are “out”, and therefore definitely “*avoid*”. But using **chromatic approaches** can create some interesting effects too, and sometimes even interesting [Modal Changes](#). “Real” avoids are 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 [Approach Chords and Auxiliary Chords](#).

¹ But you should definitely give it a try. It works.

The V7sus4 Chord

Susensions, in principle, always need resolution, at least when they are avoids or chromatic approaches (when they're tensions, they don't need a resolution¹). But over time, one type of suspended chord became a standard chord with *no needed* resolution: **V7sus4** (sometimes written **V7sus**).

The image contains two musical examples.
e.g. 1: A 3-bar progression. Bar 1: G7sus4 (G, B, D, E, G, B). Bar 2: G7 (G, B, D, E, G, B, F#). Bar 3: CΔ (C, E, G). Arrows point from the E in bar 1 to the B in bar 2, and from the B in bar 2 to the C in bar 3.
e.g. 2: A 2-bar progression. Bar 1: G7sus4 (G, B, D, E, G, B). Bar 2: CΔ (C, E, G). Arrows point from the E in bar 1 to the C in bar 2.

e.g. 1: Sus4 (C on top of G7sus4 in bar 1) is first resolved to the Major 3rd (B on top of G7 in bar 2) before going to the central chord I^Δ (C^Δ in bar 3).

e.g. 2: There's no resolution to the Major third.

Instead, V7sus4 resolves immediately to the central chord I^Δ.

These are typical jazz examples, with seventh on top of the final chord C^Δ.

In classical music, the final chord, as a triad, would have the root on top (a *perfect cadence*).

In classical harmony, therefore, the V7sus4 chord (with C on top) is seen as a *preparation* for the final chord (also with C on top).

V7sus4 chords are very common and *functional*. They are *weakened* dominants **SD(D)** when they resolve to I^Δ (marked with an arrow in analysis), or *only* subdominant SD when they resolve to another chord. The appropriate chord scale stays [Mixolydian], both for V7 and V7sus4.

Just a reminder: V7 chords are dominant because they are built on the dominant degree (V), but also, because they contain the tritone (4 and 7 - F and B).

V7sus4 (G7sus4) lacks the tritone to sound dominant (C = sus4 instead of B = major third). It does still contain the 4th degree (F) making it subdominant. **SD(D)** means **subdominant** (and also a bit dominant because it is built on the Vth degree).

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

- **IIm7 on V** or Dm7/G root in the bass – no 3 – 5 – b7 – T9 – T11
- **IV^Δ on V** or F^Δ/G root in the bass – no 3 – no 5 – b7 – T9 – T11 – T13

The image shows a musical staff with two vertical stacks of notes. The left stack, labeled Dm7/G, consists of G, B, D, E, G, B. The right stack, labeled FΔ/G, consists of G, B, D, E, G. The two stacks are positioned side-by-side, representing the combined sound of the two chords.

¹ **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) third of the chord. **Sus** also suggests that one expects a resolution to that third.

T9 is never avoid, but always a tension, that never needs resolution. When you have a chord with T9, and **no** seventh, you'd better write **C2** (*without sus*). Though, a clear *functional* symbol, **with** seventh, such as C^Δ9 or C9, is even better.

Melodic Analysis

A melody is *anchored* in the chords played underneath it. It is composed of target notes (chord tones and tensions) that can be approached by avoids and chromatic tones. The melody is therefore analyzed in relation to the chords (*vertical analysis*).

Below you'll find a melodic analysis of the A part of '**Blue Moon**', followed by a possible "improvised" solo.

The melody tones are analyzed as ...

- Chord tones 1, 3, 5, 7 (possibly with alterations: $\flat 3$, $\flat 7$, ...)
- Tensions 9, 11, 13 (possibly with alterations)
- Avoids $A\flat 9$, $A\flat 11$, $A\flat 13$...
- Chromatic approach tones $ap\sharp 2$, ...

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

Using the Pentatonic Scales

REPLACING THE CHORD SCALES BY PENTATONIC SCALES

Pentatonic scales (**5t-SC**) are very often used as a simplification for chord scales. These **5t** (= five tones) scales are major or minor scales from which two tones are omitted.

The **major pentatonic (Maj5t)** is a major scale with no 4 (or 11) and no 7.

You can use it to *replace any major chord scale*. You can also, if you want a bluesy sound, play the **Major Blues Scale**. That's the exact same Maj5t, but with added blue note $\flat 3$.

Replaced chord scale	On chord	Degrees in 5t-SC	No
[Ionian]	I Δ	1 2 3 5 6	7, Av11
[Lydian]	IV Δ		7, T $\sharp 11$
[Mixolydian]	V7		$\flat 7$, Av11

The **minor pentatonic (m5t)** is a minor scale with no 2 (or 9) and no 6 (or 13).

You can use it to *replace any minor chord scale*. For a bluesy sound, you can use the (minor) **Blues scale**, the same m5t with added blue note $\sharp 4$.

[Dorian]	IIIm7	1 $\flat 3$ 4 5 $\flat 7$	T9, T13
[Phrygian]	IIIIm7		Av $\flat 9$, Av $\flat 13$
[Aeolian]	VIm7		T9, Av $\flat 13$

To replace the [Locrian] scale you'll *need* to play the **Blues Scale**, the m5t **with $\sharp 4$ (or $\flat 5$), without the perfect fifth (5)**.

[Locrian]	VIIIm7 $\flat 5$	1 $\flat 3$ 4 $\flat 5$ $\flat 7$	Av $\flat 9$, T $\flat 13$
-----------	------------------	-----------------------------------	-----------------------------

Conclusion:

Maj5t (with or without blue note) can be played on any **Major** chord.

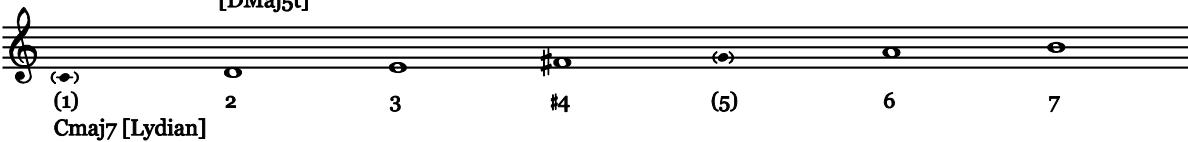
m5t (with or without blue note) can be played on any **minor** chord.

Pay attention with m7 $\flat 5$ -chords!

DISPLACING PENTATONIC SCALES

By using pentatonic scales (as above), all major chords are melodically enriched with T9 (2) and T13 (6), and all minor chords with T11 (4).

By *displacing* pentatonic scales, you can highlight other tensions. This is by no means a simplification. For this you need a thorough knowledge of chord scales, with their tensions and avoids, to know exactly what you're doing.

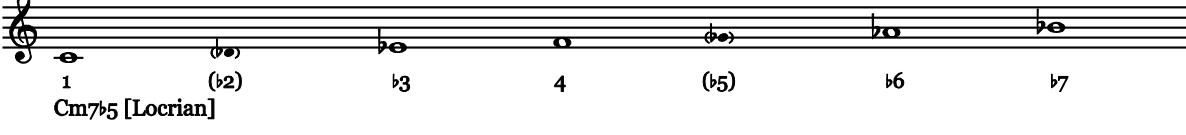
[DMaj5t]	for	C Δ [Lydian]
[DMaj5t]		
	(1) Cmaj7 [Lydian]	2 3 $\sharp 4$ (5) 6 7
= C [Lydian]	T9, 3, T $\sharp 11$, T13, 7	No 1, 5

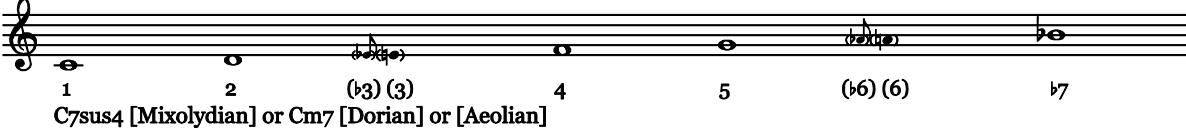
The following example is not really new.
It gives an idea about how to think in *relative* pentatonic scales.

[E♭Maj5t] Relative to [Cm5t]	for	Cm7 [Dorian] Cm7 [Aeolian] Cm7 [Phrygian]
[E♭Maj5t]		
		
= C [Dorian]		No T9, T13
= C [Aeolian]	1, b3, 4, 5, b7	No T9, Avb13
= C [Phrygian]		No Avb9, Avb13

[FMaj5t]	for	C7sus4 [Mixolydian] Cm7 [Dorian]
[FMaj5t]		
		
= C [Mixolydian]	1, T9, sus4, 5, T13	No 3, b7
= C [Dorian]	1, T9, T11, 5, T13	No b3, b7

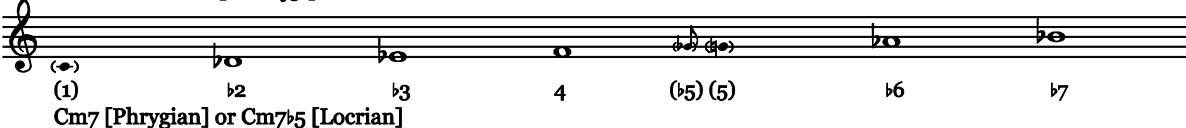
[GMaj5t]	for	C ^Δ [Ionian] C ^Δ [Lydian]
[GMaj5t]		
		
= C [Ionian]	T9, 3, 5, T13, 7	No 1, Av11
= C [Lydian]		No 1, T#11

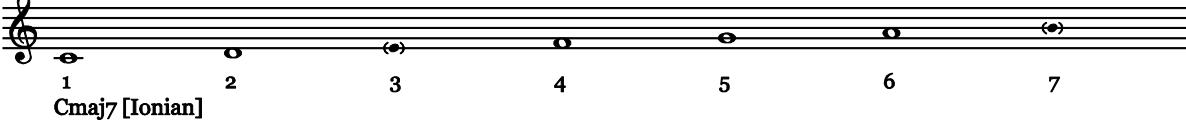
[AbMaj5t]	for	Cm7 ^{b5} [Locrian]
[AbMaj5t]		
		
= C [Locrian]	1, b3, T11, Tb13, b7	No Avb9, b5

[B♭Maj5t]	for	C7sus4 [Mixolydian] Cm7 [Dorian] Cm7[Aeolian]
[B♭Maj5t]		
		
		C7sus4 [Mixolydian] or Cm7 [Dorian] or [Aeolian]
= C [Mixolydian]	1, T9, sus4, 5, b7	No 3, T13
= C [Dorian]	1, T9, T11, 5, b7	No b3, T13
= C [Aeolian]		No b3, Avb13

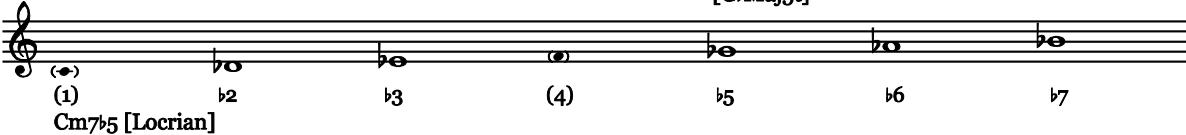
The above examples are possible in functional harmony, where avoids must be avoided to respect the *function* of the chord.

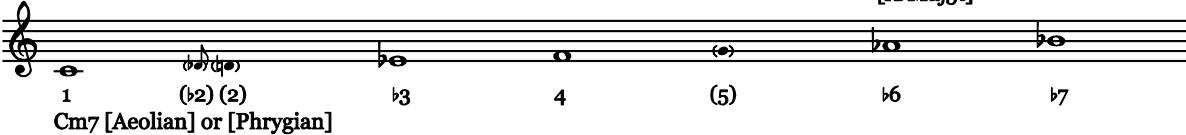
However, in [Modal Non-Functional Harmony](#), there are no avoids. Containing the *characteristic tone (CT)* is important to obtain the correct modal color.¹ Following examples are therefore possible, and even desirable.

[D♭Maj5t]	for	Cm7 [Phrygian] (And also, Cm7 ^{b5} [Locrian])
[D♭Maj5t]		
		
		(1) b2 b3 4 (b5) (5) b6 b7 Cm7 [Phrygian] or Cm7b5 [Locrian]
= C [Phrygian]	CTb2, b3, 4, b6, b7	No 1, 5
= C [Locrian]	b2, b3, 4, b6, b7	No 1, CTb5

[FMaj5t]	for	C ^Δ [Ionian]
[FMaj5t]		
		
		1 2 3 4 5 6 7 Cmaj7 [Ionian]
= C [Ionian]	1, 2, CT4, 5, 6	No 3, 7

¹ See [“Typical” Modal Voicings](#).

[G♭Maj5t]	for	Cm7 ^{b5} [Locrian]
[G♭Maj5t]		
	(1) b2 b3 (4) b5 b6 b7	Cm7 ^{b5} [Locrian]
= C [Locrian]	b2, b3, CTb5, b6, b7	No 1, 4

[A♭Maj5t]	for	Cm7 [Aeolian] (And also, Cm7[Phrygian])
[A♭Maj5t]		
	1 (b2) (2) b3 4 (5) b6 b7	Cm7 [Aeolian] or [Phrygian]
= C [Aeolian]	1, b3, 4, CTb6, b7	No 2, 5
= C [Phrygian]	1, b3, 4, b6, b7	No CTb2, 5

As we learn, later in this book, new chord scales, there will also be new displacement combinations. I will not continue to list all the possibilities, assuming that the concept is now understood.

It is interesting to note that some musicians also use displaced pentatonic scales to obtain "in-out" or "out-in" effects. Thus, they alternate scales that are more or less "in" (containing more, or fewer, *harmonically available tones*), with scales that are more or less "out" (containing more, or fewer, **non-harmonically available tones**).

A SHORT-CUT TO THE BLUES

Blues is always difficult to fit into a book on Jazz Harmony. From a historical, and pedagogical¹, perspective it should be at the very front, because Blues has a great influence on Jazz (and Pop/Rock). But the harmony of the Blues is at once very simple and very complex. It doesn't fit into "ordinary" harmonic models.²

That's because blues is a collection of superposed licks, tricks and riffs, played on a simple repetitive and rhythmic "vamp" (the chord progression). The result between all those layers is a "clash" between major and minor.

In this book, the Blues is presented as a kind of "parallel" harmonic system, for now parallel to the Functional Harmony in Major that we just learned. In the coming chapters I will return to it regularly to show how Blues influenced Jazz Harmony, and conversely, how Jazz also influenced Blues.

To properly understand the Blues, one must pay as much attention to the social and historical context in which this style originated, as to its musical analysis.³ After all, Blues is as much about "attitude" as it is about music. In addition, learning to play Blues requires a thorough knowledge of all the orally transmitted licks, tricks and riffs.

However, the purpose of this book is to strip all music, including the Blues, of its stylistic characteristics in order to understand the harmonic building blocks used in it. That is why this chapter is titled "A Short-Cut to the Blues". I encourage readers with a special interest in the Blues to read specialized books on the subject.

Blues Chords and Blues Scale

Take the main chords from **C major**: C (I), F (IV) and G (V).

The improvised melodies are based on an (African) **C minor** pentatonic scale (m5t), with an extra bluesy passage tone between 4 and 5.

The "clash" that occurs between melody (with $\flat 3$, $\sharp 4$ and $\flat 7$) and chords (with 3, 4 and 7) gives the typical Blues sound.

Vocals/Melodic improvisation in C Blues (m5t + $\sharp 4$)

Main chords in C major Blues chords in C Blues

The minor third ($\flat 3$), augmented fourth ($\sharp 4$) and minor seventh ($\flat 7$) are called **blue notes**.

¹ Many musicians try their very first improvisations on the Blues.

² We'll see that Blues may still be best described as functional music with Modal Interchange chords, or possibly, as Modal Non-Functional Harmony.

³ The same can of course, and should, be said of all music styles.

The “blue seventh” ($\flat 7$) is added to the I-chord => **C7** (instead of I^Δ)
 The “blue third” ($\flat 3$) is added to the IV-chord => **F7** (instead of IV^Δ)
 And that's how we get the three *functional* Blues **seventh** chords:

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

Blues Structure

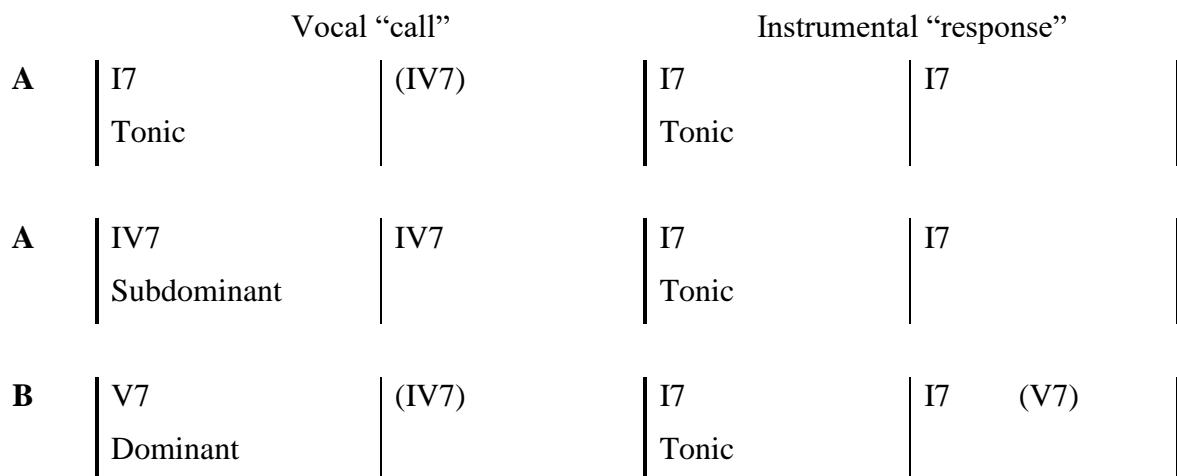
The typical **12-bar Blues** is the most frequently played structure.

It's a “Chorus” existing of 3 phrases (AAB) of 4 bars each.

Each phrase alternates a 2-bar short vocal “call” (more or less improvised), with a 2-bar short instrumental improvised “response”.

The first call (A) is sung on the Tonic chord I7
 The second call (A) Subdominant chord IV7
 The third call (B) Dominant chord V7

The instrumental responses are all on the Tonic chord.



The chords between brackets ...

- IV7 bar 2 to I7 => plagal cadence
- IV7 bar 10 following V7, to I7 => complete plagal cadence
- V7 bar 12 to first I7 => turnaround

... are very frequently used variations on the original structure.

Traditionally, after two vocal choruses, the instrument players start to alternate improvised solos of (mostly) two choruses each, often punctuated by breaks.

Other structures exist, of course, but this 12-bar blues chorus is definitely the most widely played, and is the model for hits all over the world (in Blues, Rhythm & Blues, Rock & Roll, Pop, and still other styles).

Improvising on Blues

TRADITIONAL BLUES

In traditional Blues, the **Blues Scale**¹ (m5t with blue note #4) is used over all the chords to improvise both vocal and instrumental parts.

To cope with the clashes between the blue notes (and also avoids) and the chords, blues guitarists, harmonica players and singers bend the notes² to the "regular" diatonic chord tones, only to let them slide³ back again to blue notes.

Blues in C		<i>Blues scale</i> degree	bent towards <i>chord</i> degree	
C7 (I7)	1	C	(no need)	(= root) C
	♭3	E♭	→ 3	→ Major third E
	4	F	→ 3	→ Major third E
	4	F	→ ♯4 ⁴	→ augmented fourth F♯
	#4	F♯	→ 5	→ perfect fifth G
	5	G	(no need)	(= perfect fifth) G
	♭7	B♭	(no need)	(= minor seventh) B♭
F7 (IV7)	1	C	(no need)	(= perfect fifth) C
	♭3	E♭	(no need)	(= minor seventh) E♭
	4	F	(no need)	(= root) F
	#4	F♯	→ 4	→ root F
	#4	F♯	→ 5	→ Major ninth G
	5	G	(no need)	(= Major ninth) G
	♭7	B♭	→ 6	→ Major third A
G7 (V7)	1	C	→ 7	→ Major third B
	♭3	E♭	→ 2	→ perfect fifth D
	4	F	(no need)	(= minor seventh) F
	#4	F♯	→ 4	→ minor seventh F
	#4	F♯	→ 5	→ root G
	5	G	(no need)	(= root) G
	♭7	B♭	→ 7	→ Major third B

¹ See [Blues Scales](#).

² Blue notes are sometimes called *bent notes*.

³ The *slide* guitar, played with a bottle neck, is a widely used technique for bending blue notes, not only in the melody, but often also for *sliding* the entire chord.

⁴ ♯4 here is considered stable, as the most typical blue note. Remember also [The Lydian Concept](#).

BLUES “CHORD SCALES”

When the Blues became a piano style (the Boogie Woogie style) the improvisation style had to be adjusted, because pianists cannot bend their notes. So, pianists introduced the **Major Blues Scales** (Maj5t with blue note $\flat 3$) as “chord scales” to the Blues chords, one specific improvisation scale for each chord.¹

The image shows three musical staves, each representing a different chord: C7, F7, and G7. Each staff consists of a treble clef, a key signature of one sharp (F#), four measures of music, and a numbered scale below it. The scales are labeled as "Major pentatonic + blue note $\flat 3$ ".

- C7:** The scale is 1 2 $\flat 3$ 3 5 6 8=1. The note $\flat 3$ is highlighted.
- F7:** The scale is 1 2 $\flat 3$ 3 5 6 8=1. The note $\flat 3$ is highlighted.
- G7:** The scale is 1 2 $\flat 3$ 3 5 6 8=1. The note $\flat 3$ is highlighted.

But the “regular” Blues scales ($m5t + \sharp 4$) are also used as “chord scales”. It sounds all right as long as the *blue third* ($\flat 3$) of the blues scale is resolved (“*bent*”) to the Major third (3) of the chord. That way, the Blues scale includes all the chord tones.

The image shows three musical staves, each representing a different chord: C7, F7, and G7. Each staff consists of a treble clef, a key signature of one sharp (F#), four measures of music, and a numbered scale below it. The scales are labeled as "**C Blues + Major third**", "**F Blues + Major third**", and "**G Blues + Major third**".

- C7:** The scale is 1 $\flat 3$ 3 4 $\sharp 4$ 5 $\flat 7$ 8=1. The note $\flat 3$ is highlighted.
- F7:** The scale is 1 $\flat 3$ 3 4 $\sharp 4$ 5 $\flat 7$ 8=1. The note $\flat 3$ is highlighted.
- G7:** The scale is 1 $\flat 3$ 3 4 $\sharp 4$ 5 $\flat 7$ 8=1. The note $\flat 3$ is highlighted.

To enhance the hybrid Major-minor sound of the blues in more recent Blues styles (Funk Blues, Jazz Blues), the chords are also sometimes played C7 $^{\#9}$, F7 $^{\#9}$ and G7 $^{\#9}$, including *both* thirds, the *major third* (3) and the *blue third* ($\sharp 9 = \flat 3$).

The result is a system with multiple options:

- | | |
|---|-----------------------|
| (1) stick to the original traditional C Blues Scale | for each chord |
| (2) choose the Major Blues chord scales | adapted to each chord |
| (3) opting for the more bluesy sounding Blues chord scales | adapted to each chord |

The abbreviations below stand for

- **Blues:** traditional Blues scale ($m5t + \sharp 4$) [+ 3 and $\sharp 4$ in chord scale]
- **Maj.Blue:** Major Blues scale (Maj5t + $\flat 3$)
- **No brackets:** “Blues key” (throughout the chorus)
- **[With brackets]:** “chord scales” (adapted to chords)

Blues chords in C	Optional scales		
C7 (C7 $^{\#9}$)	C Blues	[C Maj.Blue]	[C Blues]
F7 (F7 $^{\#9}$)		[F Maj.Blue]	[F Blues]
G7 (G7 $^{\#9}$)		[G Maj.Blue]	[G Blues]

¹ See [Replacing the Chord Scales by Pentatonic Scales](#).

Finally, there's also the *Extended Blues Scale*, a “chord scale” that combines both the Blues scale and the Major Blues scale:

C extended Blues scale

F extended Blues scale

G extended Blues scale

This [extended Blues] scale can also be seen as the [Mixolydian]¹ scale with the added blue notes $b3$ and $\#4$. This scale though, with its 9 different tones², doesn't provide an as easy, or clearly bluesy, phrasing as the (“pentatonic”) [Blues] or [Major Blues] scales do.

Remember

- While one can speak of a Blues "key", with its three Blues chords (I7, IV7 and V7), one cannot (yet) speak of a parent scale, since the main chords I and IV were “enriched” with the blue notes $b7$ and $b3$ respectively. We'll see later that there is [A Modal Approach to the Blues](#) providing parent scales to these chords.
- The traditional improvisation scale is the “main” Blues scale of I (C) throughout the whole chorus, over every Blues chord.
- Though there's always the possibility to use [Major Blues] or [Blues] scales, or possibly a mix of both, the [Extended Blues] scale, as “chord scales”.

¹ We'll see in the part on [Modal Changes](#) how this leads to [A Modal Approach to the Blues](#).

² The only three tones missing for a full chromatic scale are $b2$, $b6$ and 7.

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, shift 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* (secondary V7).

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 (IIIm7) can be introduced (as the target chord of an “arrow”) by its own (secondary) dominant A7 (notation in analysis: V7/II, read **V7 of II**, A is the Vth degree of D).

Let’s list all the possible secondary dominants for a song in C Major:

(G7 → C ^Δ)	(V7 → I ^Δ)	(“primary” ¹ dominant)
A7 → Dm7	V7/II → IIIm7	secondary dominant of D (II)
B7 → Em7	V7/III → IIIIm7	secondary dominant of E (III)
C7 → F ^Δ	V7/IV → IV ^Δ	secondary dominant of F (IV)
D7 → G7	V7/V → V7	secondary dominant of G (V) ²
E7 → Am7	V7/VI → VIIm7	secondary dominant of A (VI)
F#7 → Bm7 ^{b5}	V7/VII → VIIIm7 ^{b5}	secondary dominant of B (VII)

All these secondary dominant chords are borrowed from the key of their target chords, hence **tonal change to another central tone**, other than 1 (or central chord I^Δ).

But all target chords are, and remain (mostly³), diatonic chords.
Consequently, there is no “real” modulation.

¹ This “primary” dominant will always complete the list of *all* possible dominants (and cadences).

² The “dominant of the dominant” is often called the *double dominant*.

³ See [Tonal Changes on Diatonic Chords](#).

CHORD SCALES FOR SECONDARY DOMINANTS

Residual Tones

The best (classical, or traditional-sounding) method¹ for determining which chord scales can be used on secondary dominants is (what I call) the **residual tones** method. Residual tones are tones that "linger" in the ear from the previous context already heard (from the key or chord of the previous measure).

Example: V7/II in the key of C Major = A7 (dominant of D).

The chord tones are: **A** **C#** **E** **G**

The tensions and avoids for this chord (between the chord tones) are residual tones lingering from the previous context, being the key of C major:

The chord scale is: **A** **B** **C#** **D** **E** **F** **G**
 [Mixolydian^{b13}] **1** T9 **3** Av11 **5** Tb13 **b7**

Below I build chord scales, with residual tones, for each secondary dominant in C major. One thus discovers two new scales, both variants of Mixolydian²:

- the [Mixolydian^{b13}] scale (see example above)
- the [Mixolydian^{b9/b13}] scale, more often called [Spanish Phrygian]

¹ We'll see later that there are actually multiple options for (secondary) dominant chord scales. This is just a start. See [Dominant Chord Scales](#).

² Mixolydian is the usual mode for the V7 chord.

Important notes

- $\flat 9$ and $\flat 13$ are available *tensions* on dominant chords, not avoids.
- Dominants targeting a **Major** chord (V7/I, V7/IV and V7/V) are [**Mixolydian**], with T9, T13 and Av11 (sometimes written V13 on the score).
- Dominants targeting a **minor** chord (V7/III, V7/VI and V7/VII) are [**Spanish Phrygian**], with T \flat 9, T \flat 13 and Av11 (sometimes written V7 \flat 9 \flat 13 or, more often, V7 \flat 9). Except ...
- The dominant that targets **IIm7** (V7/II) is [**Mixolydian \flat 13**], with T9, T \flat 13 and Av11 (sometimes written V7 \flat 13 on the score).
- All these chord scales ¹ include avoid 11. We'll see in the next chapter how this leads to the origin, and use, of "Lydian" dominants.

PARENT SCALES FOR SECONDARY DOMINANTS

Now let's see from which parent scale these secondary dominants come from.

Let's take a closer look at the V7/II [Mixolydian \flat 13], A7.

It's obvious that this chord, including a C \sharp tone, does not relate to the main key of C. But how does it relate to its target chord Dm7 (IIm7)?

If one takes all the tones included in the chord scale [A Mixolydian \flat 13] and order them starting on D (the root of the target chord Dm7), this is the resulting scale:

D melodic minor

(A) (B) (C \sharp) D E F G A B C \sharp

1 2 3 4 5 6 7

The V7/II [Mixolydian \flat 13] is the **Melodic-V7** of D minor.

In other words, the parent scale of the A7 dominant is D Melodic minor ².

This doesn't come as a complete surprise: the *secondary dominant of a minor chord* causes a *tonal change to the minor* (in this case, melodic) *key of the target chord*.

Important note

From now on, the parent scale that generates a chord will often be different from the parent scale (or key) 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 even specifying the tonal change, such as, 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.

¹ For the build-up in tetrachords, see [Dominant Chord Scales](#).

² See [The Melodic-V9 Dominant](#).

When the tones from the V7/III chord scale [B Spanish Phrygian] are ordered starting on E (the root of the target chord Em7), one gets this:

E harmonic minor

(B) (C) (D#) E 1 F# 2 G b3 A 4 B 5 C b6 D# 7

The V7/III [Spanish Phrygian] is the **Harmonic-V7** of E minor.

The parent scale of the B7 dominant is E Harmonic minor.¹

[Spanish Phrygian] dominants (V7/III, V7/VI and V7/VII), all targeting minor chords, are Tonal Changes to the Harmonic minor key of their target chords.

And, when the tones from the V7/IV chord scale [C Mixolydian] are ordered starting on F (the root of the target chord F Δ), one gets:

F Major

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

The V7/IV [Mixolydian] is the **Major-V7** of F Major.

The parent scale of the C7 dominant is F Major.²

[Mixolydian] dominants (V7/I, V7/IV and V7/V), all targeting Major chords, 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 ^{b13}]	Melodic minor of target
V7/III – V7/VI – V7/VII	[Spanish Phrygian]	Harmonic minor of target

¹ See [The Harmonic-V7b9 Dominant](#).

² See [Series of Diatonic Chords in Major](#).

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 first¹ option for the chord scales (and their parent scales) will be different than mentioned above.

Let's use the residual tones method to determine the chord scales. We keep 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 C Major, we hear F#7 as V7/VII, a [Spanish Phrygian] chord. But its resolution to B7 sounds (a little) as a deceptive cadence, because the expected chord Bm7^{b5} (VIIIm7^{b5}) is replaced by B7 (V7/III).
- Now, we don't hear B7 as V7/III anymore, nor the E7 as V7/VI, and so on, because of the residual tones. Gradually the chord scales brighten up, first to [Mixolydian^{b13}] (= Melodic minor of target), then to [Mixolydian] (= Major of target).
- At the end, the resolution IV^Δ-chord (F^Δ) sounds as a modulation to F Major.²

¹ Once again, we'll see later that there are multiple options for (secondary) [Dominant Chord Scales](#).

² See [Tonal Change on IV^Δ](#).

Example 2

When we skip F#7 (V7/VII), and now begin the sequence with B7 (V7/III), exactly the same happens:

The musical staff shows a sequence of chords and their corresponding chord scales:

- C Δ :** Imaj7 [Ion] C Major
- B7:** V7/III [Sp.Phr] Em Harmonic
- E7:** V7/(VI) [Mixo b13] Am Melodic
- A7:** V7/(II) [Mixo] D Major
- D7:** V7/(V) [Mixo] G Major
- G7:** V7/(I) [Mixo] C Major
- C7:** V7/(IV) [Mixo] F Major
- F Δ :** (IVmaj7) [Ion] F Major

- Coming from C Major, we hear B7 as V7/III, a [Spanish Phrygian] chord. But its resolution to E7 sounds deceptive, because the expected chord Em7 (III m 7) is replaced by E7 (V7/VI).
- Now, we don't hear E7 as V7/VI anymore, nor the A7 as V7/II, and so on, because of the residual tones. Gradually the chord scales brighten, first to [Mixolydian b13] (= Melodic minor of target), then to [Mixolydian] (= Major of target).
- At the end, the resolution IV Δ -chord (F Δ) sounds as a modulation to F Major.

Example 3

When starting the sequence on E7 (V7/VI), the same happens again.

The musical staff shows a sequence of chords and their corresponding chord scales:

- C Δ :** Imaj7 [Ion] C Major
- E7:** V7/VI [Sp.Phr] Am Harmonic
- A7:** V7/(II) [Mixo b13] Dm Melodic
- D7:** V7/(V) [Mixo] G Major
- G7:** V7/(I) [Mixo] C Major
- C7:** V7/(IV) [Mixo] F Major
- F Δ :** (IVmaj7) [Ion] F Major

Gradually the chord scales brighten, first to [Mixolydian b13] (= Melodic minor of target), then to [Mixolydian] (= major of target).

This time the chord scales also match the summary of the previous chapter:
V7/VI [Spanish Phrygian], V7/II [Mixolydian b13], V7/V [Mixolydian], and so on.

Conclusion

Extended Dominants	Type	Chord Scale (parent scale)	
First dominant in sequence	V7/minor	[Sp.Phr]	(Harmonic minor of target)
	V7/II	[Mixo ^{b13}]	(Melodic minor of target)
	V7/Major	[Mixo]	(Major of target)
If preceded by [Sp.Phr]		[Mixo ^{b13}]	(Melodic minor of target)
If preceded by [Mixo ^{b13}]		[Mixo]	(Major of target)
If preceded by [Mixo]		[Mixo]	(Major of target)

TONAL CHANGES ON DIATONIC CHORDS

As already mentioned, all secondary dominant chords are borrowed from the key of their target chords. They cause tonal changes (*transient* modulations) to new central tones.

But the target chords are (*in principle*) "ordinary" diatonic chords.¹

Therefore, there is no "real" modulation.

But, because of the residual tones, some diatonic chords, when introduced by their secondary dominant, also end up sounding like a (*still transient*) modulation. Then, starting with the subsequent chord, the song will still fall back to its original main key (because a tonal change is not a *real* modulation).

Tonal Change on IV^Δ

When IV^Δ (F^Δ) is introduced by its dominant V7/IV (C7), it sounds like a Tonic chord I^Δ, as if there were a modulation to F major.

This is because the original central chord C^Δ has been converted to a dominant chord C7.

The B♭ (seventh of C7) remains in the ear as a residual tone, so F^Δ now sounds [Ionian] (like I^Δ) instead of [Lydian] (like IV^Δ).²

This confirms the inherent instability of the subdominant (4th degree) of the Major scale, and of the subdominant IV^Δ diatonic chord, *wanting to become Tonic instead of the Tonic*, and doing so at the first possible opportunity.

Jazz musicians though tend to always play the IV^Δ-chord as a [Lydian] chord, not allowing the "modulation" when introduced by its dominant. Mainly because the [Ionian] chord scale comes with *avoid* 11 instead of the *available tension* #11 in the [Lydian] chord scale.³

¹ Except with extended dominants.

² The discovery of B♭ as the first derivative tone (see footnote 2 in [Relative and Absolute Tone Names](#)) reinforces the idea that the "easiest" modulation – or, in this chapter, we might say "the unavoidable modulation" – is the modulation to the subdominant F.

³ See [Avoid the Avoids](#).

Anyhow, even when played [Ionian] (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 Tonal Change*.

Tonal Change on III^m

When III^m7 (Em7) is introduced by its dominant V7/III (B7), it sounds like a Tonic chord VI^m7 (or *actually Im*, see below). The F# (fifth of B7) lingers in the ear as a residual tone, so Em7 (or Em9) now sounds [Aeolian] (like VI^m7, or actually like the Aeolian-Im7¹) instead of [Phrygian] (like III^m7).

The diagram shows three staves. The first staff is in C Major (C^A) with notes 1 through 7. The second staff starts with B7 (F#-G-A-B-G-F#-E) and leads to the third staff, which is Em Natural (E-F#-G-A-B-G-F#). A curved arrow points from B7 to Em7. Below the staves, labels indicate: 'Imaj7 [Ion]' and 'C Major' under the first staff; 'V7/III [Sp.Phr]' and 'Em Harmonic' under the second staff; and 'IIIIm7 [Aeol]' and 'Em Natural' under the third staff.

If Em is played without the (minor) 7th, we can also hear the residual D# tone (third of B7) as a possible major 7th, now Em^A. And now Em sounds [Harmonic] (like a Harmonic-Im^A²).

The diagram shows three staves. The first staff is in C Major (C^A) with notes 1 through 7. The second staff starts with B7 (F#-G-A-B-G-F#-E) and leads to the third staff, which is Em Harmonic (E-F#-G-A-B-G-E). A curved arrow points from B7 to Em. Below the staves, labels indicate: 'Imaj7 [Ion]' and 'C Major' under the first staff; 'V7/III [Sp.Phr]' and 'Em Harmonic' under the second staff; and 'IIIImMaj7 [Harm]' and 'Em Harmonic' under the third staff.

And when preceded by B9 [Mixo^{b13}]³ (or, less common but possible also, [Mixo]), it will sound [Dorian] (like a Dorian-Im7 or Im6⁴) when played Em7 (or Em6),

The diagram shows three staves. The first staff is in C Major (C^A) with notes 1 through 7. The second staff starts with B7 (F#-G-A-B-G-F#-E) and leads to the third staff, which is Em Dorian (E-F#-G-A-B-G-F). A curved arrow points from B7 to Em7. Below the staves, labels indicate: 'Imaj7 [Ion]' and 'C Major' under the first staff; 'V7/III [Mixo b13]' and 'Em Melodic' under the second staff; and 'IIIIm7 [Dor]' and 'Em Dorian' under the third staff.

¹ See [Series of Diatonic Chords in Natural minor](#).

² See [The Harmonic-Im^A Tonic](#).

³ We'll see how that is possible in the next part on [Dominant Chord Scales](#).

⁴ See [The Dorian-Im7 Tonic](#).

... or even [Melodic] (like a Melodic- Im^Δ or $\text{Im}6^1$) when the (minor) seventh is left out of the chord (now Em^Δ or $\text{Em}6$).

A musical staff in C major (G clef) shows a progression from C major to E minor. The first section is labeled Imaj_7 [Ion] C Major. The second section is labeled V_7/III [Mixo \natural 3] Em Melodic. The third section is labeled IIIImMaj_7 [Mel] Em Melodic. A curved arrow above the staff points from the B7 chord to the Em chord.

All four options – [Aeolian], [Harmonic], [Dorian] and [Melodic] – are existing minor parent scales (and consequently possible chord scales for the Im tonic chord)². These all sound as a modulation to the minor key of the target chord.

On very precisely notated jazz lead-sheets (such as in the Real Books³) one often finds minor chords notated **without a seventh** when introduced by their dominant. This notation always suggests an **optional** tonal change, only a **transient modulation**, to the minor key of the notated chord. These chords are noted in analysis as IIIm (not as Im), or VIIm , or IIm (see below), to indicate the *optional* and *transient* nature of the modulation.

Tonal Change on VI m

The VIth degree (Am) is also often encountered notated **without a seventh** when introduced by its dominant. So, there is an optional tonal change to A minor, with the same options as for the IIIrd degree:

VIIm_7 [Aeolian]⁴, VIIm^Δ [Harmonic], VIIm_7 (or $\text{VIIm}6$) [Dorian] and VIIm^Δ (or $\text{VIIm}6$) [Melodic]

[Aeolian]

A musical staff in C major (G clef) shows a progression from C major to $\text{Am}7$. The first section is labeled Imaj_7 [Ion] C Major. The second section is labeled V_7/VI [Sp.Phr] Am Harmonic. The third section is labeled VIIm_7 [Aeol] Am Natural. A curved arrow above the staff points from the E7 chord to the $\text{Am}7$ chord.

[Harmonic] when leaving the 7th out of the chord.

A musical staff in C major (G clef) shows a progression from C major to Am. The first section is labeled Imaj_7 [Ion] C Major. The second section is labeled V_7/VI [Sp.Phr] Am Harmonic. The third section is labeled VIImMaj_7 [Harm] Am Harmonic. A curved arrow above the staff points from the E7 chord to the Am chord.

¹ See [The Melodic- \$\text{Im}^\Delta\$ also known as Melodic- \$\text{Im}6\$ Tonic](#).

² See [minor Functional Harmony](#).

³ See [Sources](#).

⁴ Which actually amounts to the same thing as the “regular” VIIm_7 [Aeolian] in C major, i.e., without tonal change.

[Dorian] when introduced by its V9 dominant.

C^Δ

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

Imaj7 [Ion]
C Major

V7/VII [Mixo \flat 13]
Am Melodic

VIIm7 [Dor]
Am Dorian

[Melodic] when introduced by its V9 dominant, and without seventh.

C^Δ

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

Imaj7 [Ion]
C Major

V7/VII [Mixo \flat 13]
Am Melodic

VIImMaj7 [Mel]
Am Melodic

Tonal Change on II^m

Finally, the IInd degree (Dm) is also sometimes found notated **without a seventh** when introduced by its dominant, with the same tonal change options to D minor:

II^m7 (or II^m6) [Dorian]¹, II^m^Δ (or II^m6) [Melodic], II^m7 [Aeolian] and II^m^Δ [Harmonic]

[Dorian] when introduced by its V9 dominant

C^Δ

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

Imaj7 [Ion]
C Major

V7/II [Mixo \flat 13]
Dm Melodic

II^m7 [Dor]
Dm Dorian

[Melodic] when introduced by its V9 dominant and without seventh.

C^Δ

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

Imaj7 [Ion]
C Major

V7/II [Mixo \flat 13]
Dm Melodic

II^mMaj7 [Mel]
Dm Melodic

[Aeolian] when introduced by its V7 \flat 9 dominant

C^Δ

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

Imaj7 [Ion]
C Major

V7/II [Sp.Phr]
Dm Harmonic

II^m7 [Aeol]
Dm Natural

[Harmonic] when introduced by its V7 \flat 9 dominant, and without seventh.

¹ Which amounts to the same as II^m7 [Dorian] in C major, without tonal change.

The diagram shows a musical staff with three different scales. The first scale, labeled 'C^Δ', is C Major, with notes 1 through 7. The second scale, labeled 'A7', is V7/II [Sp.Phr], with notes 1, b2, 3, 4, 5, b6, b7. The third scale, labeled 'Dm', is Dm Harmonic, with notes 1 through 7. An arrow points from the A7 scale to the Dm scale, indicating a tonal change.

Multiple Options for Diatonic Chords

Thus, secondary dominants can change the way we hear diatonic chords, as shown above. To arrive at all available options, we used the residual tones method, because it affects hearing naturally, too naturally perhaps, "without surprise." Creative musicians don't let these residual tones dictate their choices. With clever musical phrasing, by choosing the right leading and target tones, one can redirect the expectation caused by the residual tones to any choice, to any *mode* (chord scale) one desires.

The new, multiple, options for the chord scales of diatonic chords (with tonal change or without) are listed below in order from more to less common. The choice is yours, depending on your musical ear and preferences, going along with the residual notes from the introductory dominant, or not.

Diatonic Chord	Optional Chord Scales	Parent Scales	Tonal Change ¹	Possible Chord Symbol
II ^m (Dm)	[Dorian] [Dorian] [Melodic] [Aeolian] [Harmonic]	C Major (Dm Dorian) Dm Melodic Dm Natural Dm Harmonic	NO (YES) YES YES YES	II ^m 7 II ^m 7 or II ^m 6 II ^m ^Δ or II ^m 6 II ^m 7 II ^m ^Δ
III ^m (Em)	[Aeolian] [Dorian] [Harmonic] [Melodic] [Phrygian]	Em Natural Em Dorian Em Harmonic Em Melodic C Major	YES YES YES YES NO	III ^m 7 III ^m 7 or III ^m 6 III ^m ^Δ III ^m ^Δ or III ^m 6 III ^m 7
IV ^Δ (F ^Δ)	[Ionian] [Lydian]	F Major C Major	YES NO	F ^Δ F ^{Δ#11}
V ^m (Am)	[Aeolian] [Aeolian] [Dorian] [Harmonic] [Melodic]	C Major (Am Natural) Am Dorian Am Harmonic Am Melodic	NO (YES) YES YES YES	V ^m 7 V ^m 7 V ^m 7 or V ^m 6 V ^m ^Δ V ^m ^Δ or V ^m 6

Note that all the minor chords (II^m, III^m and V^m) are listed **without seventh** in the first column, allowing you to choose either option (m7, m^Δ or m6 – see last column).

¹ Some of these Tonal Changes can also be analyzed, and heard, as [Modal Changes](#).

Tonal Change on V and VII^m

A Tonal Change on V, when introduced by the double dominant V7/V, becoming an [Ionian] V^Δ, 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^Δ – and when we leave the (minor) 7th degree out of the chord.

The musical staff illustrates a tonal change. It starts in C Major (Imaj7 [Ion], C Major), moves to a double dominant V7/V (V7/V [Mixo], G Major), and then changes to G Major (Vmaj7 [Ion], G Major). The notes are numbered 1 through 7 below the staff, corresponding to the scale degrees of each mode.

However, this type of modulation is often used when one wishes to have a *real* (not just a *transient*) modulation "to the dominant". Such a modulation is (was) very common for the B-theme in the sonata form in 18th and 19th century Classical Music.

The Tonal Change on VII^m, becoming VII^m7, VII^m^Δ or VII^m6 – [Aeolian], [Harmonic], [Dorian] or [Melodic] – is also rare, but it happens. In this case the VII^m chord needs to be played with a perfect 5th (VII^m) instead of the expected ♯5 (VII^m7^{♯5}) – a possibility that can be explained by [Modal Interchange](#).

The image contains four separate musical staves, each showing a tonal change from C Major (Imaj7 [Ion], C Major) to a different mode via a V7/VII chord (F#7).

- Top Staff:** Changes to Bm Harmonic (VII^m₇ [Aeol], Bm Natural). The notes are numbered 1 through 7, showing the addition of a ♭6 note to the scale.
- Second Staff:** Changes to Bm Harmonic (VII^mMaj7 [Harm], Bm Harmonic). The notes are numbered 1 through 7, showing the addition of a ♭3 note to the scale.
- Third Staff:** Changes to Bm Dorian (VII^m₇ [Dor], Bm Dorian). The notes are numbered 1 through 7, showing the addition of a ♭2 note to the scale.
- Bottom Staff:** Changes to Bm Melodic (VII^m₇ [Mel], Bm Melodic). The notes are numbered 1 through 7, showing the addition of a ♭7 note to the scale.

ANALYSIS WITH SECONDARY DOMINANTS

Let's review the analysis of 'Autumn Leaves' ¹ (Joseph Kosma), in B♭ Major.
 (The analysis was done in relative major; the song is actually in G minor).

Autumn Leaves - Joseph Kosma (1905 - 1969) 3

Chord Scales:
Parent Scales: _____

V7/VI* in bar 6 and 14 (not counting the pick-up bar): **tonal change** to G minor.

Melodic in bar 6, because of the E natural tone in the melody.

Harmonic in bar 14, as common "first option" for V7/VI.

(Again, the song is actually in G minor.)

VIm in bar 7-8 and 15-16 can be played as tonal change to G minor, with multiple options:
 [Aeolian], [Harmonic], [Melodic] and/or [Dorian].

Finally, let's analyze another Jazz Standard with lots of Secondary Dominants.

¹ © 1947, 1950, 1987 Enoch Et Cie. (renewed 1975, 1978)

All Of Me

Simons & Marks

1 C^A E7 A7 Dm
 Imaj7 [Ion] C Major V7/VI [Sp.Phr] Am Harmonic V7/(II) [Sp.Phr]* Dm Harmonic IIIm [multiple options] C Major or Dm

9 E7 Am D7* Dm7 G7
 V7/VI [Sp.Phr] Am Harmonic VIIm [multiple options] C Major or Am V7/V [Mixo] G Major IIIm7 V7/I [Dor] [Mixo] C Major

17 C^A E7 A7 Dm
 Imaj7 [Ion] C Major V7/VI [Sp.Phr] Am Harmonic V7/II [Sp.Phr]* Dm Harmonic IIIm [multiple options] C Major or Dm

25 F Fm C^A Em7 A7 Dm7 G7 C⁶ Eb^o Dm7 G7
 IV6 [Lyd] ? IIm7 IIIIm7 [Ion] [Phr] V7/(II) [Mixo b13] IIIm7 [Dor] V7/I [Mixo] I6 [Ion] ? IIIm7 V7/I [Dor] [Mixo] ? C Major

The musical score consists of four staves of music in common time, primarily in C major. The first staff starts with C^A, followed by a progression of chords: Imaj7, V7/VI, V7/(II), and IIIm. The second staff begins at measure 9 with E7, followed by Am, D7*, Dm7, and G7. The third staff begins at measure 17 with C^A, followed by E7, A7, and Dm. The fourth staff begins at measure 25 with F, followed by Fm, C^A, Em7, A7, Dm7, G7, C⁶, Eb^o, Dm7, and G7. Below each staff, harmonic analysis is provided for each chord, often listing multiple possibilities. For example, the first staff lists Imaj7 [Ion] C Major, V7/VI [Sp.Phr] Am Harmonic, V7/(II) [Sp.Phr]* Dm Harmonic, and IIIm [multiple options] C Major or Dm. The fourth staff lists IV6 [Lyd] ?, IIm7 IIIIm7 [Ion] [Phr], V7/(II) [Mixo b13] Dm Melodic, IIIm7 [Dor] C Major, V7/I [Mixo] ?, I6 [Ion] ?, IIIm7 V7/I [Dor] [Mixo] ?, and C Major.

© 1931 by Irving Berlin Inc.

Notes on the analysis

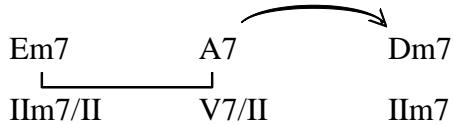
- The song is in C Major.
The structure is AB (A from bar 1 to bar 16 – B from bar 17 to end).
- Every arrow is an authentic (primary or secondary) cadence from V7 to its target chord.
 - Bar 13 – D7* (V7/V)
This arrow jumps over the first chord (II^m7) in a hook (II-V cadence).
This **indirect** cadence is *very common*, and will always appear exactly in this same way, 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 21/22) – extended dominant A7 (V7/(II)) [Sp.Phr]*
For extended dominants, [Mixo^{b13}] would normally follow [Sp.Phr] (bars 3/4 and 19/20). And for a "real" V7/II, the usual choice is also [Mixo^{b13}]. But here, the B^b in the melody (bar 6 and 22) suggests that the chord scale should be [Sp.Phr].
Another option would be to play [Mixo^{b13}] in bar 5 (and 21) and then to *darken* to [Sp.Phr] in bar 6 (and 22). But keeping [Sp.Phr] over both bars is definitely more convenient.
We'll see, in chapter [Dominant Chord Scales](#), that there are yet more options.
 - Bar 7/8 (and bar 23/24) – Dm (II^m): [multiple options]
Bar 11/12 – Am (VI^m): [multiple options]
The minor *triads* (**without seventh**) suggest the *possibility* for a tonal change to, respectively, Dm and Am, with multiple options for these chords:
[Dorian], [Aeolian], [Harmonic] or [Melodic].
- Bar 25 – F (IV6) [Lyd]
The IV-chord is analyzed here as IV6 because of the D tone in the melody.
IV6 is a common alternative for IV^Δ. It doesn't change the chord scale.
- Bar 26 – Fm (?) and bar 31 – Eb° (?)
These chords still need to be explained in the next chapters.

Relative-II Chords and Secondary II-V Cadences

Secondary Dominants are 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*, to *any (other) chord*.

Every Dominant can be preceded by its Relative-II chord.

Example: In a song written in C Major, the chord Dm7 (II^m7) is introduced by its own secondary dominant chord A7. This secondary dominant can be preceded by Em7 creating a secondary II^m7 – V7 cadence to Dm7.



DOUBLE FUNCTION OF RELATIVE-II CHORDS

Due to the residual tones these relative-II chords sometimes ¹ have a double function:

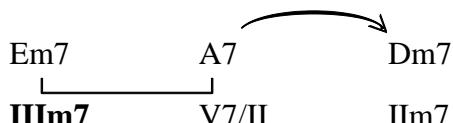
- They have a secondary function towards the target chord, i.e., II^m7 of the target.
- But they also have a primary function in the main key of the song, i.e., in relation to the central tone.

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

- Mark its secondary function using the hook (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 II^m7^{b5}-V7 CADENCE

Since secondary cadences are tonal changes to both major and minor keys, you can have both the major II^m7-V7 (to a major chord) and the **minor II^m7^{b5}-V7** ² cadences (to a minor chord). But the reverse is also possible: a major II^m7-V7 cadence to a minor chord, and a minor II^m7^{b5}-V7 cadence to a major chord.

Every Relative-II chord (even the primary II) can be either II^m7 or II^m7^{b5}.

¹ Often, if one considers [Modal Changes](#) too.

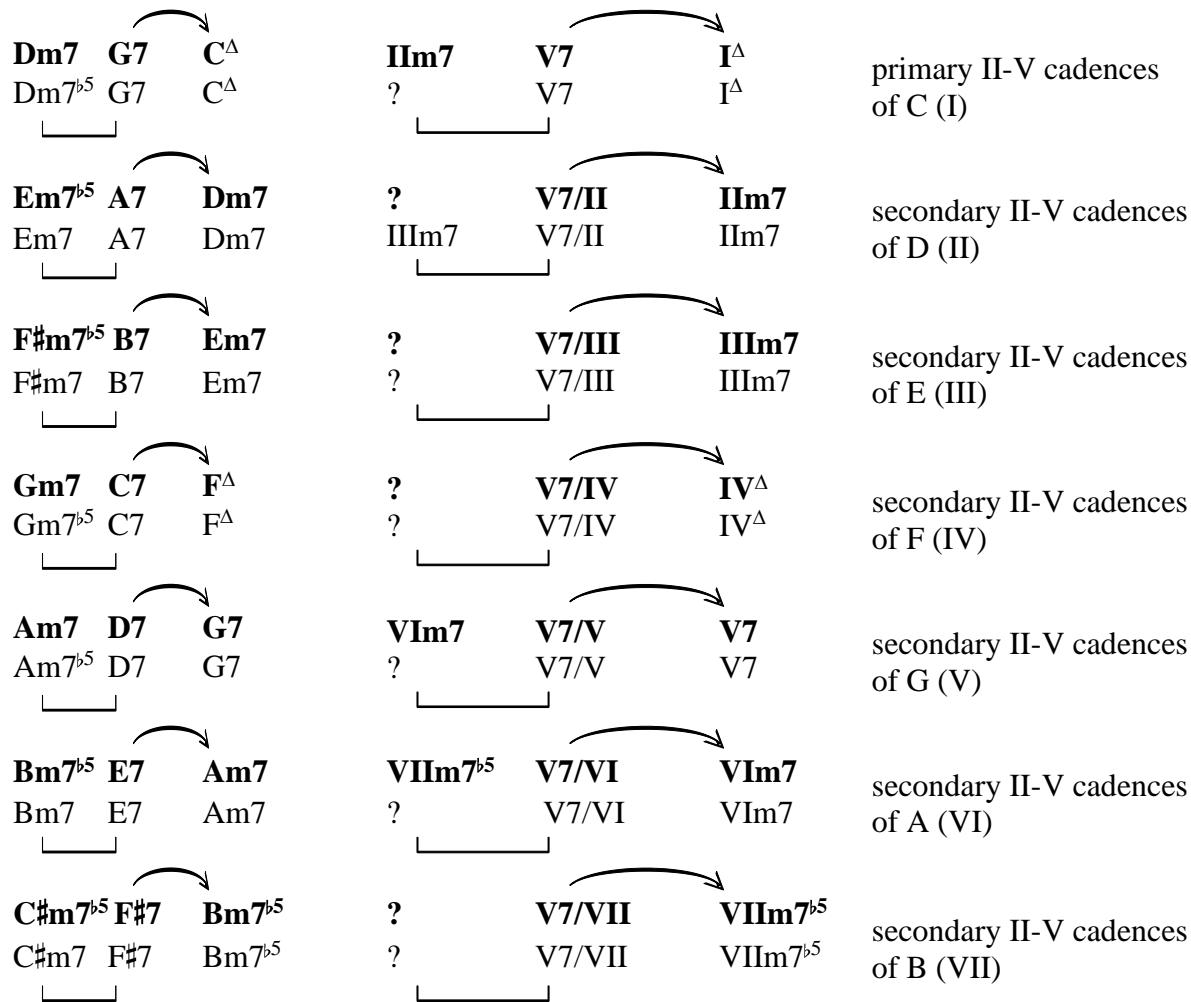
² See [Common minor Cadences](#).

LIST OF SECONDARY II-V CADENCES

Below I list all possible secondary II-V cadences for the key of C major, taking into account possible major or minor cadences *for each target chord*.

The secondary function of the relative-II chords is always indicated by a hook, their primary function by a Roman numeral (if known) or a question mark (if still unknown).

Cadences in bold are the ones most commonly used: major cadences to major chords, minor cadences to minor chords. But the other cadences are perfectly available alternatives.



Notes

Most question marks will be replaced later by [Modal Interchange](#) chords, which in most cases will confirm the secondary function.¹

I've stated before that the VIIIm7^{b5}-chord is (almost) never used, except, as confirmed here, as a relative-IIm7^{b5} to VIm7 (IIm7^{b5}/VI).

¹ See [Primary Functions of Relative-II Chords](#).

CHORD SCALES AND PARENT SCALES FOR RELATIVE-II CHORDS

II-V cadences are functional dominant-like structures¹. It's important that they sound clearly, without ambiguity about their function. Therefore, among jazz musicians, there's an **established rule** to use following logical chord scales.

[Dor] – [Mixo]² for Major II-V cadences

A musical staff in G clef. The first chord is labeled 'Dm7' with a bracket under the notes C, E, G, B. The second chord is labeled 'G7' with a bracket under the notes G, B, D, F# (with a curved arrow pointing from the B note to the F# note). Below the staff, the notes are numbered 1 through 7 under two sets of labels: [Dor] C Major and [Mixo] C Major. The notes correspond to: 1 (C), 2 (D), b3 (E), 4 (F), 5 (G), 6 (A), b7 (B). The Mixolydian scale continues from the 7th note back to the 1st note of the next chord.

[Locr] – [Sp.Phr]³ for minor II-V cadences

A musical staff in G clef. The first chord is labeled 'Dm7b5' with a bracket under the notes C, E, G, B-flat. The second chord is labeled 'G7' with a bracket under the notes G, B, D, F# (with a curved arrow pointing from the B note to the F# note). Below the staff, the notes are numbered 1 through 7 under two sets of labels: [Locr] Cm Natural and [Sp.Phr] Cm Harmonic. The notes correspond to: 1 (C), b2 (D-flat), b3 (E-flat), 4 (F), b5 (G-flat), b6 (A-flat), b7 (B-flat). The Sp. Phrygian scale continues from the 7th note back to the 1st note of the next chord.

So, the chord scale for the relative-II^m7 chord is [Dorian],
except when the primary function contradicts this.

The chord scales for relative-II^m7^{b5} chords are [Locrian],
the chord scale for the primary VII^m7^{b5} is, of course, also [Locrian].

Relative-II chords	Chord Scale	Parent Scale (tonal change to)
All relative-II ^m 7 except ...	[Dorian]	Major of target
II ^m 7/II, actually the primary III ^m 7	[Phrygian] prevails <i>[Dorian] is an option</i>	Main Major key <i>Major of target</i>
II ^m 7/V, actually the primary VI ^m 7	[Aeolian] prevails <i>[Dorian] is an option</i>	Main Major key <i>Major of target</i>
All relative-II ^m 7 ^{b5} (and primary VII ^m 7 ^{b5})	[Locrian]	Natural minor of target

¹ Indeed, you'll often find a dominant (e.g., G7) replaced by its equivalent II-V cadence (Dm7 G7 or Dm7^{b5} G7) in the re-harmonization of a song (and vice versa).

² Not taking into account possible alternatives. See [Dominant Chord Scales](#).

³ Not taking into account possible alternatives. See [Dominant Chord Scales](#).

Introducing minor Functional Harmony

Both chords of a major II-V cadence (IIIm7 and V7) come from the same major parent scale. While the chords of a minor cadence come from different parent scales: the *natural* parent scale for $\text{IIIm7}^{\flat 5}$, and the *harmonic* parent scale for V7 .

When (e.g.) the tempo of the song is too high for a quick change of chord scales (or parent scales) this can become a problem. To avoid the problem, one can opt for a homogeneous parent scale, also for the minor cadence.

Harmonic parent scale for both chords:

[Locr¹³] ¹ – [Sp.Phr] for minor II-V cadences

Melodic parent scale for both chords:

[Dor^{b9}] ² – [Mixo^{b13}] for *minor* II-V cadences (that *look* like Major II-V cadences)

Introducing the Major^{b6} 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 **Major^{b6} parent scale** (and according chord scales) will be seen more extensively in the part on [Modal Changes](#). For now, let's just mention that it's a *Major hybrid* scale (just as the Melodic scale is a *minor hybrid* scale).³

¹ For the [Locrian¹³] chord scale, see [Other Possible Harmonic Chords](#).

² For the [Dorian^{b9}] chord scale, see [The Melodic-IIIm7 Subdominant](#).

³ The Major^{b6} 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 (just the opposite of the order of the tetrachords) will be explained later.

See [minor Sub-Dominant chords \(SDm chords\)](#) and also the related [The Melodic-IV7^{#11} Subdominant](#).

Major^{b6} parent scale for both chords:

[Dor^{b5}] – [Mixo^{b9}] for Major II-V cadences (that *look* like minor II-V cadences)

With this Major^{b6} scale, we have learned the last parent scale that can generate a dominant chord (= with tritone 4 and 7). There are only four possible parent scales for a functional V7: 2 major and 2 minor scales.

Major / Major^{b6} // minor Harmonic / minor Melodic

The established rule

The established rule (ignoring multiple options) for II-V cadences is:

IIm7 [Dorian] – V7 [Mixo] **in major**

IIm7^{b5} [Locrian] – V7 [Sp.Phr] **in minor**

Those are probably be the *most convenient* options, too. However, considering ...

1. The residual tones and the resulting primary functions
(even possibly as Modal Interchange chords¹) ...
2. The possible alternative chord scales originating in the Harmonic, Melodic and Major^{b6} parent scales ...
3. The possibility of combining any of the above relative-II chord scales with any V7 scale²
(i.e., *not* necessarily keeping the same parent scale for the entire II-V cadence) ...

... there are a lot of chord scales possible for a II-V cadence. Your musical ear and personal preferences are the only criteria for determining your choice.

¹ The chords that, for now, are analyzed with a question mark.

² See [Dominant Chord Scales](#).

EXTENDED II-V CADENCES

Since *every chord 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.

1. With arrow from V to II (*direct resolution*).

Bm7 ^{b5}	E7	Am7	D7	Gm7 ^{b5}	C7	F ^Δ
VIIIm7 ^{b5}	V7/VI	VIIm7	V7/V	?	V7/IV	IV ^Δ
[Locr] AmNat	[Sp.Phr] AmHarm	[Aeol] CMaj	[Mixo] GMaj	[Locr] FmNat ¹	[Sp.Phr] FmHarm	[Ion] FMaj

These cadences have a (standard) progressive root motion in downward fifths.

But more strikingly, each cadence is one whole tone lower than the previous one:
 Downward **whole steps** pattern = [Contiguous II-V Cadences](#) (see next page).

2. With arrow from V to V (*indirect resolution*).

Em7	A7	Am7	D7	Dm7	G7	C ^Δ
IIIIm7	V7/II	VIIm7	V7/V	IIm7	V7/I	I ^Δ
[Phr] CMaj	[Mixo ^{b13}] DmMel	[Aeol] CMaj	[Mixo] GMaj	[Dor] CMaj	[Mixo]	[Ion]

Notice the pivotal basses: the same bass is held when moving from V to II.

Downward fifths pattern.

3. Random: arrow from V to II, or from V to V.

Em7	A7	Dm7	G7	Gm7	C7	F ^Δ
IIIIm7	V7/II	IIm7	V7/I	?	V7/IV	IV ^Δ
[Phr] CMaj	[Mixo ^{b13}] DmMel	[Dor] CMaj	[Mixo]	[Dor] FMaj	[Mixo]	[Ion]

The choice of chord scales in these examples mostly follows the residual tones method. It can be an option though to stick to the *established rule*, using [Dor] – [Mixo] for Major cadences and [Locr] – [Sp.Phr] for minor cadences (with a homogenous parent scale for Major cadences, though still minor *Natural* – minor *Harmonic* for minor cadences).

¹ I've inserted a modal change, minor cadence instead of Major cadence, just for illustration.

CONTIGUOUS II-V CADENCES

II-V cadences that are half or whole tone distances apart are called **contiguous II-V** cadences (see the first example on the previous page).

But sometimes they do *not* resolve to each other (without an arrow, *deceptive* cadences). They are then merely parallel constructions.¹ To reinforce the parallelism, it's customary to stick to [The established rule](#), [Dor] - [Mixo] for major cadences, and [Locr] - [Sp.Phr] for minor cadences.

1. Upward whole steps pattern

Dm7	G7	Em7	A7	F#m7	B7
IIm7	V7/I	IIIIm7	V7/II	?	V7/III
[Dor]	[Mixo]	[Dor]	[Mixo]	[Dor]	[Mixo]
CMaj	_____	DMaj	_____	EMaj	_____

Dm7 ^{b5}	G7	Em7 ^{b5}	A7	F#m7 ^{b5}	B7
?	V7/I	?	V7/II	?	V7/III
[Locr]	[Sp.Phr]	[Locr]	[Sp.Phr]	[Locr]	[Sp.Phr]
CmNat	CmHarm	DmNat	DmHarm	EmNat	EmHarm

2. Upward semitones pattern

Dm7	G7	Ebm7	A ^b 7	Em7	A7
IIm7	V7/I	?	V7/?	IIIIm7	V7/II
[Dor]	[Mixo]	[Dor]	[Mixo]	[Dor]	[Mixo]
CMaj	_____	D ^b Maj	_____	DMaj	_____

Dm7 ^{b5}	G7	Ebm7 ^{b5}	A ^b 7	Em7 ^{b5}	A7
?	V7/I	?	V7/?	?	V7/II
[Locr]	[Sp.Phr]	[Locr]	[Sp.Phr]	[Locr]	[Sp.Phr]
CmNat	CmHarm	D ^b mNat	D ^b mHarm	DmNat	DmHarm

3. Downward whole steps pattern: see [Extended II-V Cadences](#) (with arrow from V to II) on previous page.

4. Downward semitones pattern: see [Extended II-V Cadences with Sub-Cadences](#).

¹ See also [Parallel Harmony](#).

ANALYSIS WITH SECONDARY II-V CADENCES

First, let's review the analysis of 'Autumn Leaves'¹ (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:
Parent Scales:

- Cm⁷: [Dor]
- IIm⁷: [B♭ major]
- V⁷: [Mixo]
- I^Δ: [Ion]
- IV^Δ: [Lyd]

Chord Scales:
Parent Scales:

- Am^{7b5}: [Locr]
- VIIIm^{7b5}: [Mixo b13]
- V^{7/VI*}: [Gm Melodic]
- VIIm¹: [multiple options]
- Gm: [G minor]

Chord Scales:
Parent Scales:

- Cm⁷: [Dor]
- IIm⁷: [B♭ major]
- V⁷: [Mixo]
- I^Δ: [Ion]
- IV^Δ: [Lyd]

Chord Scales:
Parent Scales:

- Am^{7b5}: [Locr]
- VIIIm^{7b5}: [Sp.Phr]
- V^{7/VI*}: [Gm Harmonic]
- VIIm¹: [multiple options]
- Gm: [G minor]

Bar 5-6 (to 7-8) and 13-14 (to 15-16): Am^{7b5} – D7 (to Gm) now has a hook marking this is as a secondary (and *as expected*) minor, cadence IIm^{7b5} – V7 (to VIIm).

The numeral analysis for Am^{7b5} stays VIIIm^{7b5}, because this Roman numeral indicates the (admittedly, theoretical only²) *primary* function of the chord (in B♭ Major).

The *secondary* function (IIm^{7b5}/VI) is indicated by the *hook* (II-V cadence).

Let's now analyze a new song, 'I Should Care' (by Cahn/Stordahl/Weston).

¹ © 1947, 1950, 1987 Enoch Et Cie. (renewed 1975, 1978)

² True! This is not "really" the primary VIIIm^{7b5}, but the relative-IIm^{7b5} of VIIm. But, to remain consistent and rigorous (and thus avoid misunderstandings in methodology), one must analyze this relative-II like any other relative-II: with a hook (secondary function) and with the Roman numeral indicating the "primary" function.

I Should Care (Cahn/Stordahl/Weston)

4 Dm7 G7 Em7 A7 Dm7 G7 C^A

IIIm⁷ [Dor] V⁷ IIIIm⁷ [Dor] V^{7/II} [Mixo] IIIm⁷ [Dor] V⁷ [Mixo] I^A [Ion]
C Maj D Maj C Maj

5 Em7^{b5} A7sus A7 Dm7 Fm7 Bb7

? [Locr] V^{7sus/II} [Sp.Phr] V^{7/II} IIIm⁷ [Dor] ? [Dor] ? [Mixo]
Dm Nat Dm Harm C Maj (E^b Maj)

9 C^A Bm7^{b5} E7 Gm7 C7 F^A

I^A [Ion] VIIIm7^{b5} [Locr 13] V^{7/VI} [Sp.Phr] ? V^{7/IV} [Mixo] IV^A [Ion]
C Maj Am Harm F Maj

13 Bm7^{b5} E7^{b9} Am Am7 D7 Dm7 G7

VIIIm7^{b5} [Locr] V^{7/VI} [Sp.Phr] VIm [Mel] VIIm⁷ [Dor] V^{7/V} [Mixo] IIIm⁷ [Dor] V⁷ [Mixo]
Am Nat Am Harm Am Mel G Maj C Maj

17 F#m7^{b5} B7^{b9} Em7 A7 Dm7 G7 C^A

? [Locr] V^{7/III} [Sp.Phr] IIIIm⁷ [Dor] V^{7/II} [Mixo] IIIm⁷ [Dor] V⁷ [Mixo] I^A [Ion]
Em Nat Em Harm D Maj C Maj

21 Em7^{b5} A7sus A7 Dm7 Fm7 Bb7

? [Locr] V^{7sus/II} [Sp.Phr] V^{7/II} IIIm⁷ [Dor] ? [Dor] ? [Mixo]
Dm Nat Dm Harm C Maj (E^b Maj)

25 Am7 Bm7^{b5} E7^{b9} Am Am/G D7/F# Fm6

VIm⁷ [Aeol] VIIIm7^{b5} [Locr] V^{7/VI} [Sp.Phr] VIm [Mel] VIIm⁷ [Dor] V^{7/V} [Mixo] ?
C Maj Am Nat Am Harm Am Mel G Maj ?

29 C/E E7^{b9} Dm7 G7 C6 F7 Em7 A7

I [Ion] ? IIIm⁷ [Dor] V⁷ [Mixo] I⁶ [Ion] IV⁷ [?] IIIIm⁷ [Dor] V^{7/II} [Mixo]
C Maj ? C Maj (C Blues) D Maj

Notes on the analysis:

The most important note is that this analysis is only an illustration of what one *could* play, because ...

1. Most relative-II chords, even the primary II^m7, 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](#).
3. Even the plain diatonic chords come with multiple options as we've seen in [Tonal Changes on Diatonic Chords](#) (and as we'll see in [Modal Changes](#)).

So, one could just as easily have come to different conclusions. Let me explain my choices.

- **Bar 2 (and 18):** I've opted for [The established rule](#) [Dor] [Mixo] (instead of [Phr] [Mixo^{b13}]) to reinforce the parallelism with the previous bar ([Contiguous II-V Cadences](#)).
- **Bar 6 (and 22):** V7/II *should be* [Mixo^{b13}]. But I've opted to give in to the residual tone B^b (the diminished 5th of the previous Em7^{b5} chord): with that B^b tone, the chord scale is [Sp.Phr].
- **Bar 8 (and 24):** Fm7 B^b7 definitely *looks* like a II-V cadence, and is analyzed as such *with a hook*, and with the [Dor] and [Mixo] chord scales.

But what is this II-V cadence of E^b doing here so suddenly? In a song in C major? And no E^b chord (or modulation) to be found anywhere? Hence the question marks in the analysis. The mention of the E^b parent scale is a good solution for now. But these chords will later be explained as [minor Sub-Dominants \(SDm\)](#).

- **Bar 10:** [Locr¹³] on Bm7^{b5} (instead of [Locr]) just to illustrate the principle of homogenous *parent scale* (in this case, Harmonic) *for the whole II-V cadence*. ([Introducing minor Functional Harmony](#).)

At the similar repeat in bar 26, I've opted for [The established rule](#).

- **Bar 12:** IV^Δ [Ion] instead of [Lyd] as an example of a [Tonal Change on IV^Δ](#). Most Jazz musicians would play it [Lyd] though (see [Avoid the Avoids](#)).
- **Bar 14:** VIm [Mel] instead of [Aeol] as an example of a [Tonal Change on VIm](#).
- **Bar 15:** VIm7 [Dor] instead of [Aeol]. I keep the residual tone F# from Am melodic in the previous measure. When changing from [Mel] to [Dor], only G# is restored to G natural (seventh from Am7).

And of course, also, [Dor] [Mixo] is [The established rule](#) for Major II-V cadences.

- **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 explained (see [Modal Changes](#)).
- **Bar 29:** E^b° still needs to be explained (see [Approach Chords and Auxiliary Chords](#)).

- Bar 31: F7 is analyzed here as the Blues-IV7 chord for a “bluesy touch” (see [Improvising on Blues](#)).

There's a free choice between [F Maj.Blues], [F Blues] and [F Ext.Blues] chord scales. Hence the question mark.

(C Blues) is noted as parent scale, between brackets, because this is not a “real” parent scale. But it is certainly a possible improvisation scale.

There's yet another possible analysis for this chord that we'll see in the chapter on [Substitution Dominants](#).

- Bar 32: [The established rule](#) [Dor] [Mixo] as a reminder of bar 2 and 18.

Conclusion

With this chapter on Tonal Changes, the possible options for chord scales (and consequently for parent scales) have expanded enormously. And further on in this book new options will be added. The choices made will of course depend on one's own preferences, and also on one's own style (although *musical* style is sometimes dictated by the professional context, rather than by personal taste).

But choices are also often dictated by convenience or habit, because they are those we already know and have already mastered. And the instrument we play, with its specific technique, also has an important influence: guitarists (for example) do not always make the same choices as pianists. Choosing "ease" is certainly justified, because it is definitely better to sound powerful and confident with "easy" chord scales, than to sound weak and uncertain with "difficult" chord scales.

However, one must be careful not to get stuck in old habits, and in limited choice, due to ease and comfort. One should at least try all chord scales, and if at all possible, practice them until one masters them. Only in this way can one become familiar with the available tensions and avoids of chord scales, with the specific *sound* and *color* of a *mode*. Thus, one learns to know and recognize modes. In this way choices can become conscious, based on knowledge (instead of convenience or habit).

But most of all, this is how one becomes freer and more creative.

DOMINANT CHORD SCALES

The Eight Dominant Chord Scales

Dominant Chord Scales are improvisational scales that one can play over *any dominant chord*. One can find an abundance of possible Dominant Chord Scales in books and on the Internet. But these can all be reduced to only **eight** V7-scales.¹

Four **Basic** Dominants (which we already encountered)

Four **Lydian** Dominants (which we are going to learn in this section)

CHARACTERISTICS OF DOMINANT V7 CHORDS

- They are built on the 5th (or Vth) degree of the tonality (... of the target chord), being the root of the dominant chord itself.
- They include the tritone, 4th and 7th degree, of the tonality (... of the target chord), being the ♭7th and 3rd degree respectively of the dominant chord itself.
- They 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 #9²
 - *natural* Avoid 11 OR *altered* Tension #11
 - *natural* Tension 13 OR *altered* Tension ♭13.

Important notes on the use of the tensions

- Avoid 11 *can* be added to the chord, but then *the major third (3) must be omitted*. Thus, it becomes a **suspended 4th chord** (sus4-chord).

Without the major third, and thus without the tritone (see point 2 above), the chord loses its dominant function and becomes a subdominant chord.

But, because the chord is built on the dominant (Vth degree) of the parent scale (see point 1 above), some theorists, such as myself, call this function **SD(D)** (meaning: subdominant with "still a dominant-like" sound).

- The perfect fifth of the (a) chord can be missed without too much loss of tone or color. Therefore, the fifth is usually omitted when tension ♭13 is combined with tension #11. This avoids consecutive semitones with a cluster-like sound.

¹ The much larger number of dominant scales you find in other sources is due to 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 tend to (re-) invent 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 [Using the Pentatonic Scales](#).

² Not only can tension 9 be lowered to ♭9, or raised to #9, it can actually split into ♭9 **and** #9.

Also, useful to remember is that when a V7 chord (e.g., G7) goes to a ...

- **Major** chord (C^Δ), then its chord scale will (preferably) contain **tension 13** (E), because it corresponds to the **major third** (E) of the target chord.
- **Minor** chord goes (Cm7), then his chord scale will (preferably) contain **tension $\flat 13$** (E^\flat), because it corresponds to the **minor third** (E^\flat) of the target chord.¹

LIST OF DOMINANT CHORD SCALES

To discover the eight chord scales, we add all possible combinations of tensions to the chord.

V7 TYPE	CHORD SCALE	PARENT SCALE (OF TARGET)	CHORD TONES	TENSIONS	AVOID (OR SUS4)
Basic Dominants – with avoid 11 (or sus4)					
V7 ¹³	[Mixolydian]	Major (Major target)	1 3 5 $\flat 7$	9 13	11
V7 ^{$\flat 9-13$}	[Mixolydian ^{$\flat 9$}]	Major ^{$\flat 6$} ² (Major target)	1 3 5 $\flat 7$	$\flat 9 \sharp 9$ 13	11
V7 ^{$\flat 9-\flat 13$}	[Spanish Phrygian]	minor Harmonic (minor target)	1 3 5 $\flat 7$	$\flat 9 \sharp 9 \flat 13$	11
V7 ^{9-$\flat 13$}	[Mixolydian ¹³]	minor Melodic (minor target)	1 3 5 $\flat 7$	9 $\flat 13$	11
Lydian Dominants – with tension #11					
V7 ^{#11}	[Lydian ^{$\flat 7$}]	(no parent scale) Major target	1 3 5 $\flat 7$	9 $\sharp 11$ 13	no avoids
V7 ^{$\flat 9-13$}	[Diminished ½-1]	(no parent scale) Major target	1 3 5 $\flat 7$	$\flat 9 \sharp 9 \sharp 11$ 13	no avoids
V7alt	[Altered]	(no parent scale) minor target	1 3 (5) $\flat 7$	$\flat 9 \sharp 9 \sharp 11 \flat 13$	no avoids
V7 ^{9-$\flat 13$}	[Whole Tone]	(no parent scale) minor target	1 3 (5) $\flat 7$	9 $\sharp 11 \flat 13$	no avoids

Reminder

In order to stay as clear as possible I'll use the following notation standards:

Melodic–V7 [Mixo¹³] = Parent Scale of the chord–Chord Degree [Chord Scale]

¹ But surprises (and [Modal Changes](#)) are always possible. It could also be just the other way around: V7¹³ to minor after all, and V7 ^{$\flat 13$} to major after all.

² See [Introducing the Majorb6 Parent Scale](#).

For the Lydian dominants, with no parent scale, you'll find their usual designation instead of a parent scale (e.g., 'Altered' V7 [Alt]). In analysis, I will then mention NPS (No Parent Scale) in the bottom line.

THE FOUR “BASIC” DOMINANTS

Major-V7 [Mixolydian]

G7 [Mixolydian]

1 T9 3 Av11 5 T13 b7 G7 (G13)

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 b7 p.t. 7 G7

Major^{b6}-V7 [Mixolydian^{b9}]

G7 [Mixolydian b9]

1 Tb9 T#9 3 Av11 5 T13 b7 G7^{b9}

Because of the double tension b9 and #9, this scale is an octotonic scale (8-tone scale). Therefore, the avoid 11 is best left out, avoiding the consecutive semitones (A#, B, C) at the same time. Common variants are scales without b9, or without #9.

When played V7sus4, the Major 3rd is left out, also avoiding the consecutive semitones.

Harmonic-V7 [Spanish Phrygian]

G7 [Spanish Phrygian]

1 Tb9 T#9 3 Av11 5 Tb13 b7 G7^{b9} (G7^{b9b13})

This scale is also octotonic, with both b9 and #9. So again, it is best to leave out avoid 11 (or the major third for sus4) to avoid consecutive semitones A#, B, C. And again, there are variants without b9, or without #9.

When the major third is omitted ($V7^{\flat 9}\text{sus}4$), one has an exact enharmonic copy of the [Phrygian] scale:

Melodic-V7 [Mixolydian $\flat 13$]

As a reminder, these four basic dominants all contain avoid 11.

THE FOUR “LYDIAN” DOMINANTS

Tension #11

To *avoid the avoids*¹ in the dominant chord scale(s), it is common – especially in Jazz – to alter *avoid 11* to **tension #11**.

For example, G7 [Mixolydian]:

- Parent scale C major
- Target chord C Δ
- Av11 C
- **T#11** C \sharp

This tension (C \sharp) seems to *deny* the existence of the central tone (C) on which the whole system is built. The dominant thus *abstracts* from its relationship with the central tone, with the parent scale, and with the target chord. The dominant becomes an independent **Lydian**² like tonal system unto itself. Thus, these *Lydian* dominants **do not come from an existing parent scale** related to the central tone.³

And yet they function *tonally* as dominant to the target chord, thanks to the powerful concentric function of the bass (one perfect fifth above the target) and the tritone (4 and 7 of the target's tonality) still present in the chord.⁴ And so, the central tone still retains its "central role." Lydian dominants are thus at the limit of what is tonally possible.

¹ See [Avoid the Avoids](#).

² The characteristic tone for Lydian is #4 (or T#11). See also [The Lydian Concept](#).

³ Some theoreticians classify those dominant chord scales, as issued from yet *another* parent scale, not built on the central tone, but on *some other* tone (see [The Melodic minor Parent Scale](#)). 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.

⁴ See [Characteristics of Dominant V7 Chords](#).

If we replace, for each of the above Basic Dominants, $A\#11$ with $T\#11$, one gets the four Lydian Dominants with their specific chord scales.

Important note

The ‘adjectives’ of Lydian dominants (Lydian, Symmetrical, Altered, Whole Tone) do NOT refer to a parent scale, but are common *names* among jazz musicians.

The ‘Lydian’ Dominant [Lydian^{b7}]

This is the Lydian equivalent of the Major-V7 [Mixolydian],
now with T#11 instead of avoid 11.

A musical staff in G major (one sharp) with a treble clef. The notes for the G7 [Lydian b7] chord are shown: G (1), B (T9), D (3), E (T#11), G (5), B (T13), and B (b7). The notes are placed on the staff according to their pitch: G4, B4, D5, E5, G5, B5, and B5.

This is the only Lydian dominant that is commonly called **The Lydian Dominant**.

The ‘Symmetrical’ Dominant [Diminished $\frac{1}{2}$ - 1]

Lydian equivalent of the Major^{b6}-V7 [Mixolydian^{b9}],
now with T#11 instead of avoid 11.

G7 [Dim 1/2 - 1]

1 T_b9 T_#9 3 T_#11 5 T13 b7 G7^{b9} (G7^{b9-#11})

Symmetrical refers to the symmetrical construction of the scale that alternates semitones and whole tones.¹

The ‘Altered’ Dominant [Altered]

Lydian equivalent of the Harmonic-V7 [Spanish Phrygian],
now with T#11 instead of avoid 11.

G7 [Altered]

1 T₉ T_{#9} 3 T_{#11} (no 5th) T_{b13} b₇

alt in the chord symbol refers to *altered* tensions.

The 5th degree of this chord scale is squeezed out by T[#]11 and T^b13.

¹ Symmetrical scales are:

The ‘Whole Tone’ Dominant

Lydian equivalent of the Melodic-V7 [Mixolydian^{b13}],
now with T#11 instead of avoid 11.

G7 [Whole Tone]

1 T9 3 T#11 (no 5th) Tb13 b7 G7^{#5} (G+)

Because here too the fifth is pushed away by T#11 and Tb13, one commonly uses #5 (or +) in the chord symbol – instead of tension b13 (D# = Eb).

That's why this dominant is also often called the ‘Augmented’ Dominant, with an [Augmented] chord scale. But depending on schools, there are still other augmented scales, with a different construction.

[Whole Tone] is a better, unambiguous, name.

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 – #4	
Lydian ^{b9}	$\frac{1}{2}$ – $1\frac{1}{2}$ – 1	1 – \flat 2 – 3 – #4	Hungarian Spanish

Both the Harmonic and the Lydian^{b9} tetrachords are displayed below with an added tone ¹
– #2 or Tension #9 – to fill up the *harmonic gap* (whole tone + semitone gap).

Major dominant: C7 or C7sus4 [Mixolydian]

WT

1 T9 3 Av11 5 T13 b7 (1)
Major tetrachord minor tetrachord

Major b6 dominant: C7 or C7sus4 [Mixolydian b9]

WT

1 Tb9 T#9 3 Av11 5 T13 b7 (1)
Harmonic tetrachord + #9 minor tetrachord

Harmonic dominant: C7 or C7sus4 [Spanish Phrygian]

WT

1 Tb9 T#9 3 Av11 5 Tb13 b7 (1)
Harmonic tetrachord + #9 Phrygian tetrachord

Melodic dominant: C7 or C7sus4 [Mixolydian b13]

WT

1 T9 3 Av11 5 Tb13 b7 (1)
Major tetrachord Phrygian tetrachord

Lydian dominant: C7 [Lydian b7]

st

1 T9 3 T#11 5 T13 b7 (1)
Lydian tetrachord minor tetrachord

Symmetrical dominant: C7 [Dim 1/2 - 1]

st

1 Tb9 T#9 3 T#11 5 T13 b7 (1)
Lydian b9 tetrachord + #9 minor tetrachord

Altered dominant: C7 [Altered]

st

1 Tb9 T#9 3 T#11 (5) Tb13 b7 (1)
Lydian b9 tetrachord + #9 Phrygian tetrachord

Whole Tone dominant: C7 [Whole Tone]

st

1 T9 3 T#11 (5) Tb13 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*.

¹ And so, they become “pentachords”, 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	(Lydian alternative)	[Lydian ^{b7}]
	[Mixolydian ^{b9}]	or		[Diminished ½-1]

And, to target a minor chord:

[Spanish Phrygian]	or	[Altered]
[Mixolydian ^{b13}]	or	[Whole Tone]

However, Modal Changes are always possible. They're quite common too. Any one of the eight V7-chord scales can be used on each and any dominant chord, providing multiple options for dominant chords.

You can e.g., replace [Mixolydian] with [Spanish Phrygian], or [Lydian^{b7}] with [Altered]. This is how you play Modal Changes from major to minor.

Some of these Modal Changes seem to sound easier than others. That's because it's a lot easier to *darken* the color of a mode (to shift from major to minor, to *more lowered degrees*) than it is to brighten it up.

So, it's useful to classify these dominants by brightness:

From Bright to → Dark	“Basic” Dominants	tensions ¹	avoids	Mode (parent scale)	“Lydian” Equivalents	tensions
	[Mixo]	9 13	11	Major	[Lyd ^{b7}]	9 #11 13
	[Mixo ^{b9}]	♭9 13	11	Major (Major ^{b6})	[Dim ½-1]	♭9 #11 13
	[Mixo ^{b13}]	9 ♭13	11	minor (Melodic)	[Wh.T]	9 #11 ♭13
	[Sp.Phr]	♭9 ♭13	11	minor (Harmonic)	[Alt]	♭9 #11 ♭13

Changing from *dark* to *bright* is also possible, but it requires more determination and 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’ ² (or any other song for that matter), replacing the “expected” dominants by their Lydian and/or Modal equivalent(s).

¹ Remember that ♭9 always comes with #9. I deliberately left #9 out of this table, for convenience.

² See [Analysis with Secondary II-V Cadences](#).

Substitution Dominants

TRITONE SUBSTITUTION

The main characteristic of dominant chords is that they include the tritone (4th and 7th degree) of the tonality.

Remember how the tritone resolves when G7 (V7) resolves to C (I).

If you reverse the tritone – 4 becomes 7, and 7 becomes 4 – then F is the 7th degree of G♭, and B (enharmonically translated to C♭) is the 4th degree of G♭.

Then one gets the following tritone, in the D♭7 (V7) chord, with its resolution to G♭ (I).

The G♭ tonic itself, is also situated one tritone (above or below) the tonic C.

So, every tritone (4 and 7 – F and B) can be found in two different tonalities (C and G♭), with central tones separated themselves by three whole tones (= tritone).

The dominant chords of both tonalities (G7 and D♭7) 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).

Hold on! Both dominants, sharing the same tritone, with roots also separated 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 2nd degree (♭II) of the tonality (of the target)
- They include the tritone, 4th and 7th degree of the tonality (of the target).
- They include T♯11 (= the 5th degree of the tonality).

CHORD SCALES FOR SUBV7 CHORDS

The standard chord scale for a SubV7-chord is the [Lydian^{b7}] scale.

The Lydian tension #11 is the 5th degree (G) of the tonality.

D^b7 [Lydian^{b7}]

1 2 3 #4 5 6 b7

When this scale is played starting on G (T#11), and using *enharmonic* writing (B^b = A[#], C^b = B, D^b = C[#]), one gets the G7 [Altered] scale.

G7 [Altered]

1 b2 #2 3 #4 (no 5th) b6 b7

Both chords – D^b7 [Lydian^{b7}] and G7 [Altered] – are *enharmonically* exactly the same.

The only difference is the bass. Using hybrid chord symbols, one gets:

V7 with root of SubV in the bass: G7/D^b = D^b7 [Lydian^{b7}]

SubV7 with root of V in the bass: D^b7/G = G7 [Altered].

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 on a regular I^Δ – VI^{m7} – II^{m7} – V7 turnaround.

- Bar 1 and 2: the regular I^Δ – VI^{m7} – II^{m7} – V7 turnaround.
- Bar 3 and 4: re-harmonization with extended dominants. The bass line – a “cliché” in Jazz – plays with downward leading tones (approach tones) to 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 are hybrid (SubV7 with root of V in the bass).
- 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^{m7}.
- Bar 13 and 14: a possible construction with the diatonic VI^{m7}.

1 C^A Am7 Dm7 G7 C^A A⁹ D^{7b9} G^{7b9}
 I^A [Ion] VIm⁷ [Aeol] II^{m7} [Dor] V⁷ [Mixo] I^A [Ion] V^{7/II} [Lyd b7] V^{7/V} [Alt] V⁷ [Alt]

5 C^A Bb⁹ A⁹ Eb⁷ D⁷ Ab⁹ G⁹ Db⁹
 I^A [Ion] SubV^{7/VI} [Lyd b7] V^{7/II} [Lyd b7] SubV^{7/II} [Lyd b7] V^{7/V} [Lyd b7] SubV^{7/V} [Lyd b7] V⁷ [Lyd b7] SubV^{7/I} [Lyd b7]

7 C^A Eb^{9/A} Ab^{9#11/D} Db^{9/G} C^A Eb⁹ Ab^{9#11} Db⁹
 or C^A A^{b13} D^{b13} G^{b13} I^A [Ion] SubV^{7/II} [Lyd b7] SubV^{7/V} [Lyd b7] SubV^{7/I} [Lyd b7]
 I^A [Ion] V^{7/II} [Alt] V^{7/V} [Alt] V⁷ [Alt]

11 C^A Eb⁹ Dm⁹ Db⁹ C^A Am⁹ Ab⁹ G⁹
 I^A [Ion] SubV^{7/II} [Lyd b7] II^{m7} [Dor] SubV^{7/I} [Lyd b7] I^A [Ion] VIm⁷ [Aeol] SubV^{7/V} [Lyd b7] V⁷ [Lyd b7]

The downward **semitone** movement of the bass is indicated by dotted hooks and arrows:

Full arrow		downward perfect fifth to target
Dotted arrow		downward 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 choice for every SubV7-chords is [Lyd^{b7}].

The chord scale choices for the “regular” dominants are (more or less) random.¹

¹ I left the (bottom) 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 chord scale for SubV7 chords is [Lydian^{b7}], rarely anything else. But it can be interesting to explore what other possibilities there are.

SubV7 chords, when played from T#11, can be considered an "inversion" of the regular V7, and vice versa (see above: Db7 [Lydian^{b7}] = G7 [Altered]). Thus, one can "invert" all Lydian dominant chord scales (with #11) to SubV7.

G7 [Altered]	inverted on #11	→ Db7 [Lydian ^{b7}]
G7 [Lydian ^{b7}]	inverted on #11	→ Db7 [Altered]

The symmetrical chord scales remain the same symmetrical scales when inverted (obviously, *since* they are symmetrical).

G7 [Diminished ½-1]	inverted on #11	→ Db7 [Diminished ½-1]
G7 [Whole Tone]	inverted on #11	→ Db7 [Whole Tone]

All these chords (and chord scales) preserve the characteristics of the SubV7 chords:

- They are built on the lowered 2nd degree (bII) of the tonality (of the target)
- They include the tritone, 4th and 7th degree of the tonality (of the target).
- They include T#11 (= the 5th degree of the tonality).

The Basic dominant chord scales (Db) [Mixo], [Mixo^{b9}], [Sp.Phr], and [Mixo^{b13}] lose the third characteristic because none of these scales contain T#11 (G). Without the G tone (dominant tone of C), the chord loses its powerful con-centering function to the target.

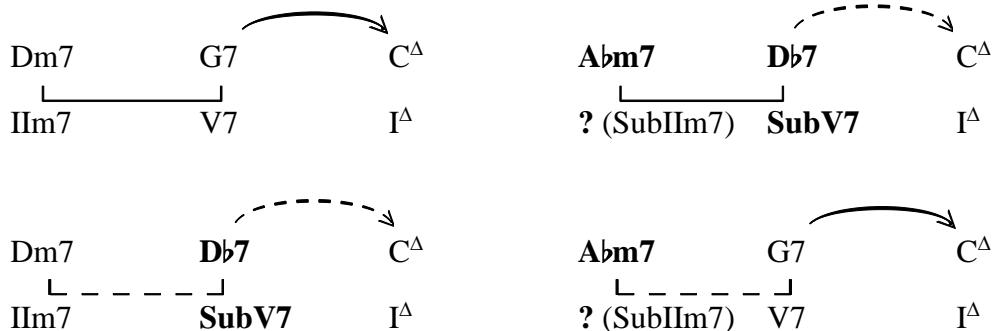
Optional chord scales for SubV7 – including tension #11 (inversions of the “Lydian” V7 chord scales)		
SubV7^{#11}	[Lydian^{b7}] = standard	NPS (no parent scale)
SubV7alt	[Altered]	NPS (no parent scale)
SubV7 ^{b9-13}	[Diminished ½-1]	NPS (no parent scale)
SubV7 ^{b13}	[Whole Tone]	NPS (no parent scale)

SUB-CADENCES

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, if any, otherwise with a question mark (= no primary function, or, possibly a modal change¹).

*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

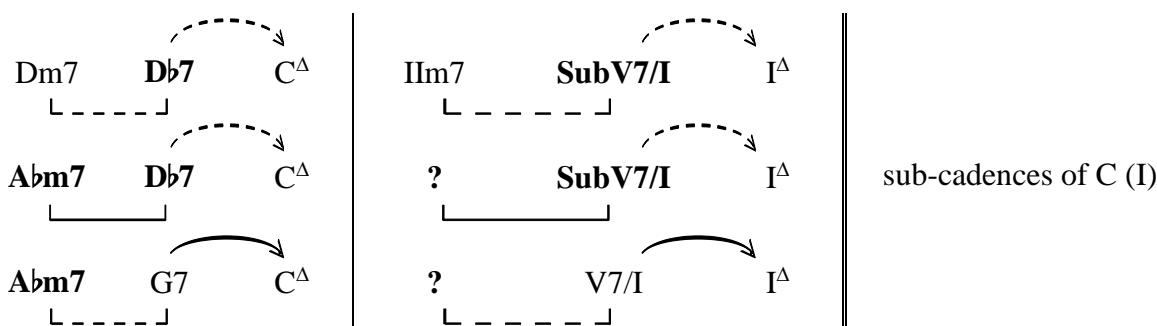
The standard chord scale for a SubIIm7 is the [Dorian] chord scale, which is not related to any parent scale of the target. But, remember that there are usually multiple options for Relative-II chords, depending on how you hear the possible residual tones (or the possible modal change).

The established rule though (ignoring the multiple options) for a SubII-SubV Cadence is

SubIIm7 [Dorian] SubV7 [Lydian^{b7}]

List of Sub-Cadences

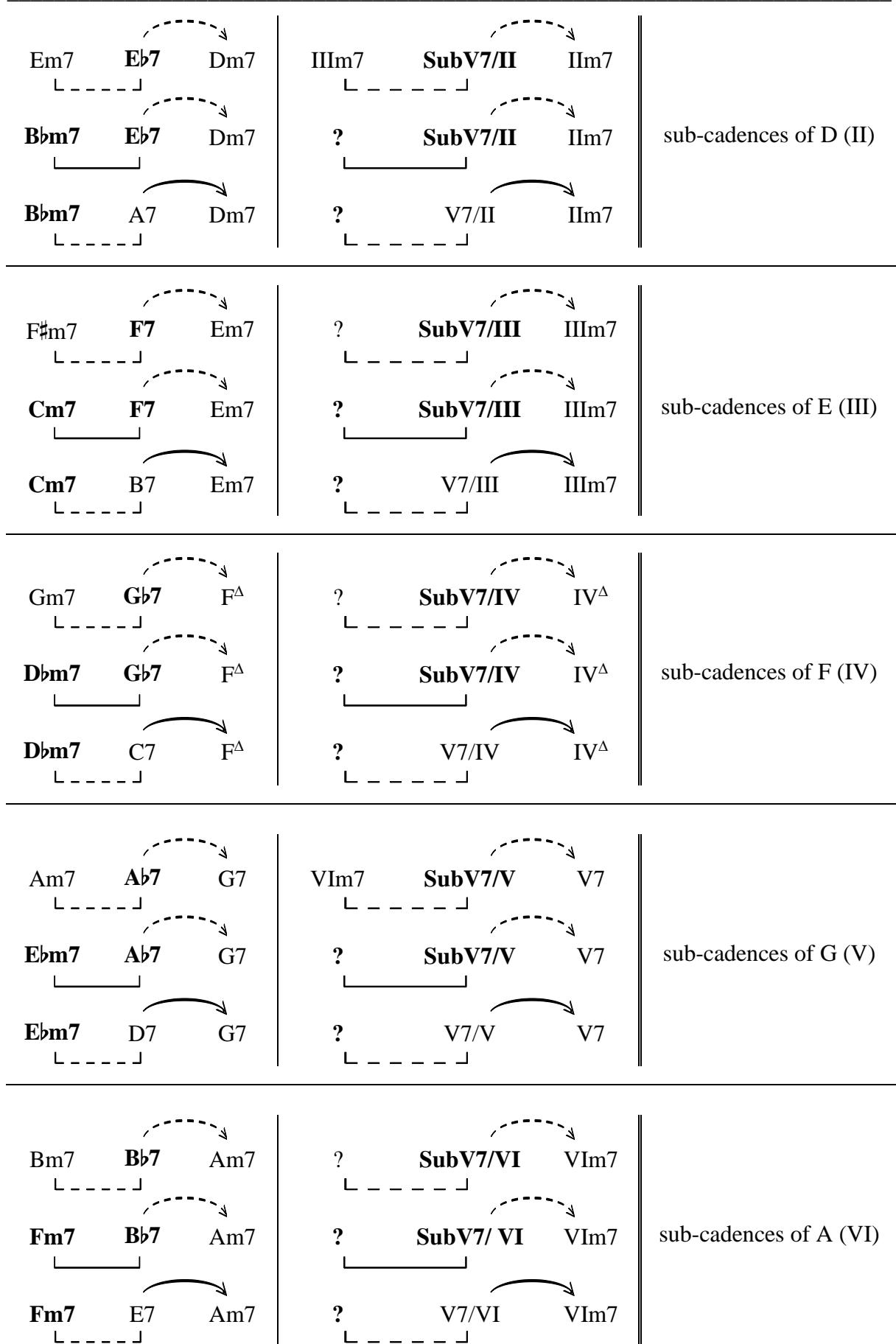
This (already quite long) list does not include the *regular* II-V cadences², nor alternative minor cadences with Relative-IIm7^{b5}.³

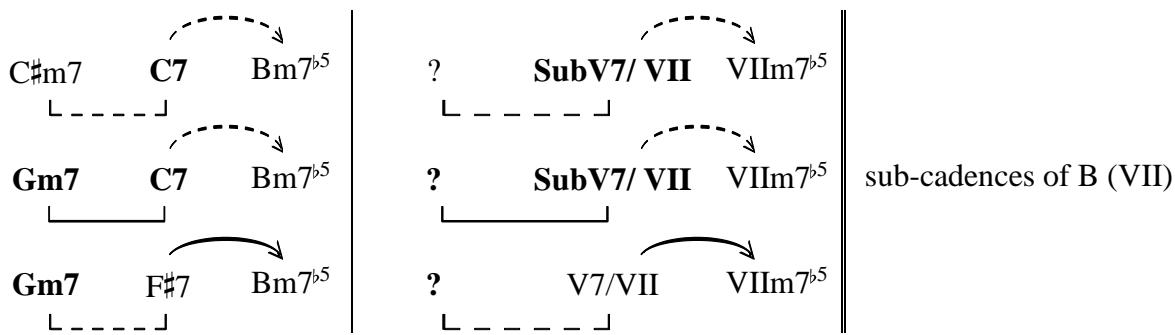


¹ See [Primary Functions of Relative-II Chords](#).

² Please refer to the [List of Secondary II-V Cadences](#).

³ A *minor* SubIIm7^{b5} [Locrian] is not common at all, though strictly theoretically, it is imaginable.





We'll be able to fill in most question marks with [Modal Interchange](#) chords 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 find some logic in the parent scales.¹ It's definitively easier to *focus on chord scales*, and to hold on to [The established rule](#): [Dorian] for every relative-II and [Lydian^{b7}] for every dominant (whether a substitution dominant or not). I'll do just that in the following examples.

To give some clarity in the parent scales, I'll use

- The abbreviation NPS = no parent scale for this chord.²
- (CMaj) – between brackets – for parent scales that are more or less related to the *expected target* (not to the *actual target*)

1. Dotted hooks (downward *semitones*) from II to V

Dotted arrows (downward *semitones*) from V to II (*direct resolution*)

F#m7	F7	Em7	Eb7	Dm7	Db7	CΔ
?	SubV7/III	IIIIm7	SubV7/II	IIIm7	SubV7/I	IΔ
[Dor]	[Lyd ^{b7}]	[Dor]	[Lyd ^{b7}]	[Dor]	[Lyd ^{b7}]	[Ion]
EMaj	NPS	DMaj	NPS	CMaj	NPS	CMaj

For comparison:

The regular [Extended II-V Cadences](#) with a direct resolution have a root-motion in *downward fifths*, these SubV7 cadences, in *downward semitones*.

But both constructions have a downward **whole steps** pattern
= [Contiguous II-V Cadences](#).

¹ When we'll replace the question marks with [Modal Interchange](#) chords, some logic will be found again.

² I.e., no parent scale *directly related to the context*.

2. Dotted hooks (downward *semitones*) from II to VDotted arrows (downward *semitones*) from V to V (*indirect resolution*)

Em7	E \flat 7	E \flat m7	D7	Dm7	D \flat 7	C Δ
III \flat 7	SubV7/II	?	V7/V	II \flat 7	SubV7/I	I Δ
[Dor]	[Lyd \flat 7]	[Dor]	[Lyd \flat 7]	[Dor]	[Lyd \flat 7]	[Ion]
DMaj	NPS	D \flat Maj	NPS	CMaj	NPS	CMaj

Pivotal basses from V to II.

Downward **semitones** pattern = [Contiguous II-V Cadences](#).

In these SubV7 cadences, substitution dominants alternate with secondary dominants.

Because these secondary dominants (V7/V in the example above) also resolve in semitones, they sound just like substitution dominants => [Lyd \flat 7] chord scale.3. Full hooks (downward *fifths*) from II to V

Dotted arrows from V to II

Cm7	F7	Em7	A7	A \flat m7	D \flat 7	C Δ
?	SubV7/III	III \flat 7	V7/II	?	SubV7/I	I Δ
[Dor]	[Lyd \flat 7]	[Dor]	[Lyd \flat 7]	[Dor]	[Lyd \flat 7]	[Ion]
(B \flat Maj)	NPS	(DMaj)	NPS	(G \flat Maj)	NPS	CMaj

Upward major thirds pattern.

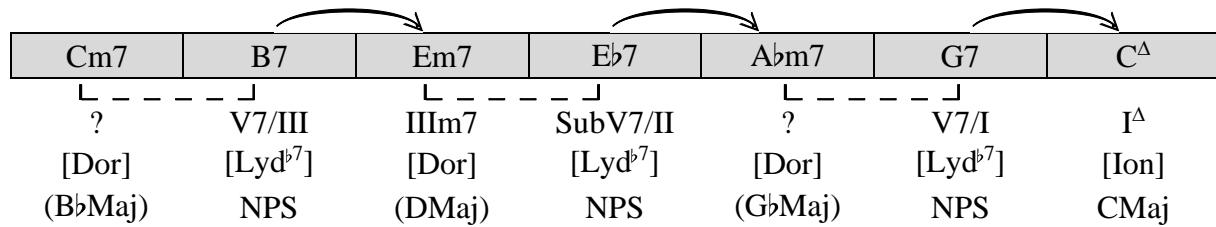
These cadences close the cycle after just three “jumps”: if you would replace the ending C Δ chord by the starting Cm7 chord, you’d be starting the three same cadences all over again.

4. Full hooks from II to V

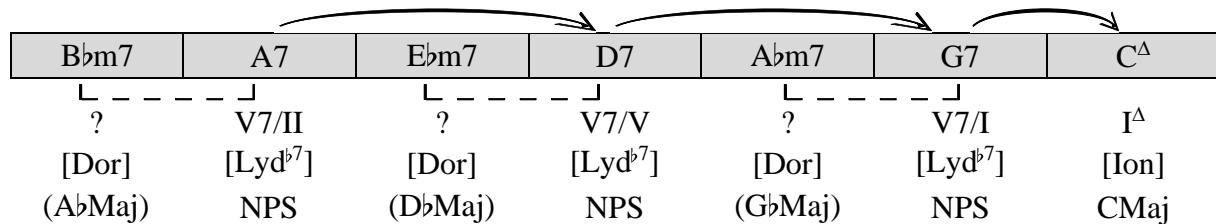
Dotted arrows from V to V

B \flat m7	E \flat 7	Am7	D7	A \flat m7	D \flat 7	C Δ
?	SubV7/II	V \flat m7	V7/V	?	SubV7/I	I Δ
[Dor]	[Lyd \flat 7]	[Dor]	[Lyd \flat 7]	[Dor]	[Lyd \flat 7]	[Ion]
(A \flat Maj)	NPS	(GMaj)	NPS	(G \flat Maj)	NPS	CMaj

Downward **semitones** pattern = [Contiguous II-V Cadences](#).

5. *Dotted hooks from II to V**Full arrows from V to II*

Upward major thirds pattern.
(Cycle closed after three “jumps”).

6. *Dotted hooks from II to V**Full arrows from V to V*

Downward fifths pattern.

Full hooks from II to V

Full arrows from V to II

... and

Full hooks from II to V

Full arrows from V to V

... are “regular” [Extended II-V Cadences](#).

ANALYSIS WITH SUB CADENCES

Let's first review the B-part of 'I Should Care'.¹

I Should Care (Cahn/Stordahl/Weston) - B part

17 F#m7(b5) B7(b9) Em7 A7 Dm7 G7 C^Δ
 ? [Locr] V⁷/III [Sp.Phr] IIIIm⁷ [Dor] V⁷/II [Mixo] IIIm⁷ [Dor] V⁷ [Mixo] I^Δ [Ion]
 Em Nat _____ Em Harm _____ D Maj _____ C Maj _____

21 Em7(b5) A7(sus4) A7 Dm7 Fm7 Bb7
 ? [Locr] V⁷sus/II [Sp.Phr] V⁷/II [Dor] ? [Dor] SubV⁷/VI [Lyd b7]
 Dm Nat _____ Dm Harm _____ C Maj _____ (E♭ Maj) _____ NPS

25 Am7 Bm7(b5) E7(b9) Am Am/G D7/F# Fm6
 VIm⁷ [Aeol] VIIIm⁷b5 [Locr] V⁷/VI [Sp.Phr] VIIm [Mel] VIm⁷ [Dor] V⁷/V [Mixo] ?
 C Maj _____ Am Nat _____ Am Harm _____ Am Mel _____ G Maj _____ ? _____

29 C/E Eb° Dm7 G7 C⁶ F7 Em7 A7
 I [Ion] ? IIIm⁷ [Dor] V⁷ [Mixo] I⁶ [Ion] SubV⁷/III [Lyd b7] IIIIm⁷ [Dor] V⁷/II [Mixo]
 C Maj _____ ? _____ C Maj _____ NPS D Maj _____

- Bar 24: This II-V cadence *could* be analyzed as a SubII-SubV cadence of VIIm⁷. We'll see that these chords are more commonly analyzed as [minor Sub-Dominants \(SDm\)](#).
- Bar 31: The F7 chord was previously analyzed as the Blues IV7.
It can now be analyzed as a SubV⁷/III.
But it will later also possibly be analyzed as some kind of [Modal Changes](#).

Now let's analyze the B-part of 'Autumn Leaves'² (by Joseph Kosma), a song in G minor, but still analyzed in its relative key of B♭ Major.

¹ See [Analysis with Secondary II-V Cadences](#). © 1943, 1945 Hanover Music, Cahn Music & Dorsey Bros. Music

² © 1947, 1950, 1987 Enoch Et Cie. (renewed 1975, 1978)

Autumn Leaves (B-part) - Joseph Kosma (1905 - 1969)

The musical score consists of four staves of music in G clef, B-flat key signature, and common time. The score is divided into four sections by vertical bar lines. Below each section, the chords are labeled with their Roman numeral function, the chord type, and the name of the scale used. Arrows point from the labels to the corresponding chords in the music.

- Section 1:** Am7^{b5} (VIIIm7^{b5} [Locr] B-flat Major), D7 (V7/VI [Alt] NPS), Gm (VIm [Mel] Gm Melodic).
- Section 2:** Cm7 (IIIm7 [Dor] B-flat Major), F7 (V7 [Lyd b7] NPS), Bb^A (Imaj7 [Ion] B-flat Major), Eb^A (IVmaj7 [Lyd] NPS).
- Section 3:** Am7^{b5} (VIIIm7^{b5} [Locr]), D7 (V7/VI [Sp.Phr] Gm Harmonic), Gm (VIm [Dor] F Major), Gb7 (SubV7/V [Lyd b7] NPS), Fm7 (SubV7/V [Dor] E-flat Major), E7 (SubV7/IV [Lyd b7] NPS).
- Section 4:** Eb^A (IVmaj7 [Lyd] B-flat Major), Am7^{b5} (VIIIm7^{b5} [Locr]), D7 (V7/VI [Alt] NPS), Gm (VIm [Dor] Gm Dorian).

Notes on the analysis

Again, the choices made are merely illustrative. Other choices were just as possible.

- **Bar 2** (not counting the pick-up bar): D7 [Alt], Lydian equivalent of the expected [Sp.Phr] dominant. This choice works *only for improvisation, without the melody!* Because, with A (fifth) and G (Av11) in the melody, the basic [Sp.Phr] chord scale is a better choice (or possibly, another basic V7 scale – see bar 10).
- **Bar 3-4:** Gm [Mel]. Multiple possible options.
- **Bar 6:** F7 [Lyd^{b7}]. Multiple possible options.
I've opted for the Lydian equivalent of the expected [Mixo] dominant.
- **Bar 10:** D7 [Sp.Phr]. This time (see bar 2), I chose the expected [Sp.Phr] dominant, paying attention to the A in the melody (absent in the [Alt] scale). But if you're improvising, without the melody, multiple options are possible.
- **Bar 11-12:** Gm [Dor] – Gb7 [Lyd^{b7}] – Fm7 [Dor] – E7 [Lyd^{b7}] = The *established rule* for Sub-cadences. This choice also enhances the parallelism of *contiguous* cadences. But multiple possible options.
- **Bar 14:** D7 [Alt], no conflict with the melody this time (see bar 2). Multiple possible options.
- **Bar 15-16:** Gm [Dor]. Multiple possible options.

Dominant Structures to Diatonic Chords of C Major

Rel-IIIm7 ^(b5) ¹	(Dm7) ^(b5)	Em7 ^(b5)	F#m7 ^(b5)	Gm7 ^(b5)	Am7 ^(b5)	Bm7 ^(b5)	C#m7 ^(b5)	[Dor] ² or [Locr]
Sec.V7	(G7)	A7	B7	C7	D7	E7	F#7	[Mult.Opt.] ³
Diat. Chords	C ^Δ [Ion]	Dm7 [Dor]	Em7 [Phr]	F ^Δ [Lyd]	G7 [Mixo]	Am7 [Aeol]	Bm7 ^{b5} [Locr]	
SubV7 ⁴	D♭7	E♭7	F7	G♭7	A♭7	B♭7	C7	[Lyd ^{b7}] ⁵
SubIIIm7 ⁶	A♭m7	B♭m7	Cm7	D♭m7	E♭m7	Fm7	Gm7	[Dor]

¹ Without or with b5: major OR minor cadence.

² The established rule, but ... Be careful with the *primary* function of Em7 = IIIIm7 [Phr] and Am7 = VIIm7 [Aeol].

³ Any of the eight possible V7 chord scales. But favoring ...

T13 to major chord: [Mixo], [Mixo^{b9}], [Lyd^{b7}] and [Dim ½-1]

Tb13 to minor chord: [Sp.Ph], [Mixo^{b13}], [Altered] and [Wh.T]

⁴ Interchangeable with Sec.V7

⁵ But possibly also [Dim ½-1], [Alt] and [Wh.T]

⁶ Interchangeable with Rel-IIIm7

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 by semitone* (up or down).

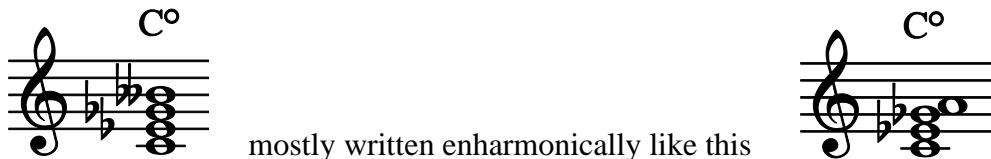
Auxiliary chords have a *static* bass, the same bass as the target chord.

Diminished Chords

The most commonly used approach chords are **diminished chords**, e.g., C° (in full: diminished seventh chords).

These are symmetrical chords with a stack of *minor thirds*: 1 – b3 – b5 – bb7 (C – Eb – Gb – Bbb). With another minor third on top, one returns to the root.¹

Another striking feature is that they contain two diminished fifths (two tritones): from 1 to b5 (C to Gb), and from b3 to bb7 (Eb to Bbb).



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 analyzed in jazz 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.

18th and 19th century Classical composers used this chord a lot, most often in minor keys², but also in major keys³, as a substitution chord to the dominant V7.

¹ Another symmetrical chord is the stack of *major thirds*: 1 – 3 – #5 (C – E – G#). Here also, one comes back to the root when one adds another major third.

This augmented triad (C#5 or C+) is most often used as a dominant chord: mostly [Sp.Phr], [Mixo^{b13}], [Alt] or [Wh.T], to a minor chord. #5 in the chord symbol then actually stands for Tb13 (which announces the minor third of the target chord). See [Dominant Chord Scales](#).

² See [The Harmonic-VII° Dominant](#).

³ See [Main Majorb6 Chords](#).

The *approach* feature of the VII° 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°

- Is built on the 7th 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 (4 and 7) of the tonality of its target chord and is therefore a full functional dominant (not “just a non-functional approach”).

Secondary VII° Dominant Chords

Any dominant chord (secondary and substitution¹ dominants included) can be replaced by a diminished chord built on its major third, being VII° .

Because these chords, in jazz, are analyzed as non-functional approach chords, they are given a Roman numeral indicating their *precise place in the tonality*.

Let's list all the possible secondary VII° dominants for a song in C Major:

Dim > Target	Possible analysis	Common analysis	
B° C ^Δ	VII° I ^Δ	VII° I ^Δ	primary VII°
C#° Dm7	VII°/II IIIm7	#I° IIIm7	secondary VII° of D (II)
D#° Em7	VII°/III IIIIm7	#II° IIIIm7	secondary VII° of E (III)
E° F ^Δ	VII°/IV IV ^Δ	III° IV ^Δ	secondary VII° of F (IV)
F#° G7	VII°/V V7	#IV° V7	secondary VII° of G (V)
G#° Am7	VII°/VI VIIm7	#V° VIIm7	secondary VII° of A (VI)
A#° Bm7 ^{b5}	VII°/VII VIIIm7 ^{b5}	#VI° VIIIm7 ^{b5}	secondary VII° of B (VII)

¹ The diminished chord built on the major third of G7 is B° (= VII°).

The diminished chord built on the major third of its SubV D^b7 is F°, an inversion of B° (= VII°)

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.

When using inversions, it's common to write "another" diminished chord instead of the heavier slash chord symbol.

VII° inversed to target chord		"other" dim chord to target chord
B°/D to Cm/E♭	written as	D° to Cm/E♭
B°/F to C/E	written as	F° to C/E
B°/Ab to C/G	written as	A♭° to C/G

Note the typical *semitone motion of the bass* going to the *inversed* target chord.

This leads to a lot of confusion.

- Both F° to C/E, and A♭° to C/G, look like *downward* diminished chords, while they're in fact inversions of the *upward* VII° dominant.
- Moreover, one often finds, on carelessly written scores (without slash to indicate the inversions), D° to Cm – F° to C – A♭° to C – (seemingly) without the typical semitone motion of the bass.

To work around all the confusion, but clearly also for practical improvisational reasons, the jazz musician uses a single chord scale type for all diminished chords (whether upward, downward, static or random).

CHORD SCALES FOR DIMINISHED CHORDS

The [Diminished 1½] chord scale

In jazz improvisation, one plays the [Diminished 1½] chord scale on all diminished chords.

It is also sometimes called [Symmetrical Diminished], as opposed to the [Symmetrical Dominant] or [Diminished ½-1] scale.¹ One is an inversion of the other.

VII° looks like an inversion of the V7°-chord on its third, without the root.

And the [Diminished 1½] ("whole-half") chord scale is also an inversion of the [Diminished ½-1] ("half-whole") used for the Symmetrical Dominant V7°/13.

¹ See [The 'Symmetrical' Dominant \[Diminished ½ - 1\]](#).

Note the odd tension 7 (T7) in the [Dim 1-½] scale, one whole tone above $\flat\flat 7$. This is the first example of splitting the standard seventh ($\flat 7$) into two new sevenths ($\flat\flat 7$ and 7).¹

Alternative Chord Scales

In order to discover all possible chord scales of the dominant VII° we need...

1. To look ahead to chapters yet to come to determine their origins:
see [Main Majorb6 Chords](#) and [The Harmonic-VII° Dominant](#).
2. Best to compare them, for practical reasons, with their substitution-dominant V7, Lydian equivalents included. That way, we can more conveniently view them as inversions of already known Dominant Chord Scales (see [Dim 1-½] as inversion of [Dim ½-1] above).

Origin

Dominant V7 chords originate, as mentioned earlier, from four different parent scales: Major, Major \flat^6 , Harmonic and Melodic.

Dominant VII° chords originate from *only two possible parent scales*: Major \flat^6 and Harmonic. In Major and Melodic we have $VIIIm7^{b5}$, a *half-diminished chord*.

Comparison with V7

Parent Scale	Target chord	V7	VII°
Major \flat^6	Major	V7 [Mixo \flat^9]	VII° [Locrian $\flat\flat 7$]
Lydian equivalent		V7 [Dim 1/2-1]	VII° [Dim 1-½]
Harmonic	Minor	V7 [Sp.Phr]	VII° [Ultra-Locrian]
Lydian equivalent		V7 [Alt]	VII° [Ultra-Locrian \flat^9]

The major or minor target chord is mentioned above out of theoretical logic.

In practice, modal changes are common, and with diminished chords even more convenient. When the jazz musician uses the [Dim 1-½] chord scale for each diminished chord, *even to a minor chord*, he plays with modal changes.

¹ See [Exceptions in Tonal Degrees and Modal Degrees](#).

The [Locrian \flat 7] chord scaleInversion of the [Mixolydian \flat 9] scale.

B° [Locrian \flat 7]

G7 [Mixolydian \flat 9]

1 Av9 b3 T11 b5 Tb13 bb7 T7

1 Tb9 T#9 3 Av11 5 T13 b7 1 Tb9 T#9

The [Diminished 1-½] chord scale

Inversion of the [Diminished ½-1] scale.

B° [Dim 1 - 1/2] or [Symmetrical Diminished]

G7 [Dim 1/2 - 1] or [Symmetrical Dominant]

1 T9 b3 T11 b5 Tb13 bb7 T7

1 Tb9 T#9 3 T#11 5 T13 b7 1 Tb9 T#9

It is the very symmetry of this scale(s), the alternation of whole and semitones (or vice versa), that makes it the most convenient choice for *all* diminished chords.

The [Ultra-Locrian] chord scale

Inversion of the [Spanish Phrygian] scale.

B° [Ultra-Locrian]

G7 [Spanish Phrygian]

1 Av9 b3 Tb11 b5 Tb13 bb7 T7

1 Tb9 T#9 3 Av11 5 Tb13 b7 1 Tb9 T#9

The [Ultra-Locrian \flat 9] chord scale

Inversion of the [Altered] scale.

B° [Ultra-Locrian 9]

G7 [Altered]

1 T9 b3 Tb11 b5 Tb13 bb7 T7

1 Tb9 T#9 3 T#11 (5) Tb13 b7 1 Tb9 T#9

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 ^{b9}	$\frac{1}{2}$ – $1\frac{1}{2}$ – 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 ^{b4}	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

Other than the fact that it resolves with a descending semitone, the **downward diminished** chord is very similar to the upward diminished. But, while the ascending one has a dominant function, the descending diminished is *just an approach chord* without any function: not Dominant, not Subdominant, not Tonic.

It is usually used as a chromatic *passage* between two diatonic chords that are a whole tone distance apart. The most common example is the passage from IIIm7 to IIIm7. But it can also be used as an *approach* (or *preparation* for the target chord, also called *appoggiatura*¹ chord in classical music theory).²

¹ See [Chromatic approaches](#).

² The difference between a *passage* and an *approach* is really purely theoretical: the former makes a passage between two chords separated by a whole tone, while the latter approaches the target chord no matter where one comes from. In practice, however, one notices little difference.

And, obviously, the upward diminished can also be both passage and approach.

The musical score illustrates a progression from IIIIm_7 to IIIm_7 . The analysis shows the following chords and their Roman numerals:

- IIIIm_7
- Eb°
- Dm_7
- C^Δ
- Eb°
- Dm_7

Below the staff, Roman numerals indicate the chord's position in the key: IIIIm_7 , $\flat\text{III}^\circ$, IIIm_7 , Imaj_7 , $\flat\text{III}^\circ$, and IIIm_7 .

Annotations below the staff provide specific details:

- "passage from IIIIm_7 to IIIm_7 "
- "approach to IIIm_7 "
- Labels "s.t." (semitone) are placed under the bass notes in the IIIIm_7 and IIIm_7 chords.

I used enharmonic writing for an easier reading in this example:

- The A tone on Eb° is its diminished 5th and *should* be $\text{B}^{\flat\flat}$.
- The C tone on Eb° is its diminished 7th and *should* be $\text{D}^{\flat\flat}$.

The logic behind this chord type is **contrapuntal**¹: all chord tones are *melodic preparations* to the tones of the target chord, either *chromatic approaches*, or *anticipations*. With enharmonic writing, those preparations become clearer:

- The A tone *anticipates* the 5th (A) of the target chord Dm_7 .
- The C tone *anticipates* the 7th (C) of the target chord Dm_7 .
- The other tones, Eb and G^\flat , are *chromatic approaches* 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, $\flat\text{III}^\circ$ going down to IIIm_7 .

Since this chord is a chromatic approach chord, not connected in any way to the main key (or the key of the target chord), it has no parent scale. Consequently, there's no logical deduction possible for determining the chord scale.

Jazz musicians use, for this chord also, the convenient [**Dim 1-½**] scale. So, all additional tones become tensions, situated one whole tone above the chord tones: T9, T11, T \flat 13 and T7.

The musical score shows the notes of the [Dim 1 - 1/2] scale for Eb° :

- 1
- T9
- $\flat 3$
- T11
- $\flat 5$ actually $\text{B}^{\flat\flat}$
- T \flat 13 actually C
- $\flat\flat 7$ actually $\text{D}^{\flat\flat}$
- T7

Other options are possible, however, because this chord comes from contrapuntal logic (and not from harmony). This eliminates the contradiction between *tension* and *avoid*.

¹ In *counterpoint*, one pays attention only to the movement of, and interactions between, the *melodies*. The resulting harmony (which of course there always is) is of no importance whatsoever.

Counterpoint is a compositional technique that developed with polyphony in the late Middle Ages, even before there was any notion of harmony. It is therefore considered the ancestor of harmony. But counterpoint is still often used today (instead of, and/or next to, harmony).

All tones (“tensions” and “avoids”) can, on their own, be considered a ...

- ... anticipation ...

(“Tension”)	9	F	<i>anticipates</i> F	minor 3 rd of target chord Dm7
	♭13	B	<i>anticipates</i> B	tension 13 of Dm7
	T7	D	<i>anticipates</i> D	root of Dm7

- ... or a chromatic approach.

11	A♭	<i>approaches</i> A	fifth of Dm7
		<i>approaches</i> A	tension 11 of Dm7

But just the same ...

- (“Avoid”)

♭9	F♭	<i>approaches</i> E♭	root of E♭° itself
		<i>approaches</i> F	minor 3 rd of Dm7
		<i>anticipates</i> E	tension 9 of Dm7
♭11	A♭♭	<i>approaches</i> G♭	minor 3 rd of E♭°
		<i>anticipates</i> G	tension 11 of Dm7
♭♭13	B♭	<i>approaches</i> B♭♭	diminished 5 th of E♭°
		<i>approaches</i> A	5 th of Dm7
♭7	D♭	<i>approaches</i> D♭♭	diminished 7 th of E♭°
		<i>approaches</i> C	minor 7 th of Dm7

Everything depends on the rhythmic structure of the melody: solution within the chord itself (E♭°), or at the transition to the target chord (Dm7). As long as you keep the chord tones of the diminished chord in the chord scale, basically anything goes.

We've encountered a downward diminished chord in the turnaround of ‘All of Me’ (Simons & Marks)¹. We can now analyze it as follows.

First bar: E♭° is a downward diminished approach chord towards IIIm7.

Note the semitone **bass** motion from E♭° to Dm7.

And exactly the same cadence occurs in the very last line of ‘I Should Care’ (Cahn/Stordahl/Weston)² that can now be analyzed as follows.

¹ See [Analysis with Secondary Dominants](#).

© 1931 by Irving Berlin Inc.

² See [Analysis with Secondary II-V Cadences](#).

© 1943, 1945 Hanover Music, Cahn Music & Dorsey Bros. Music

C/E Eb° Dm7 G7 C⁶ F7 Em7 A7

I [Ion] bIII° [Dim 1 - 1/2] IIIm⁷ [Dor] V⁷ [Mixo] I⁶ [Ion] SubV⁷/III [Lyd b7] IIIIm⁷ [Dor] V⁷/II [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, over Eb° to Dm7.

THE STATIC DIMINISHED AUXILIARY CHORD

The **static diminished chord**, like the descending diminished, has no function.

To understand the concept of **auxiliary** chord, it is useful to briefly digress.

In classical trills, one speaks of the **main tone**, the tone that is notated on the score, and the **auxiliary** tone, the (diatonic or chromatic) approach tone that is used to alternate.

= Trill on main tone G =

A = auxiliary tone
G = main tone

When several auxiliary tones are used simultaneously, within a chord, one gets an **auxiliary chord**. An auxiliary chord thus shares **the same bass** as the "target" chord, because it's not really a new chord, but an embellishment of an existing chord. That's why it's also rarely written down on the score.

C° C⁶

I° I⁶

- The “auxiliary” tones, Eb and Gb, are *chromatic approach tones* to E and G respectively.¹
- The A tone (instead of Bbb) *anticipates* (is actually) the 6th (A) of C6.
- The *static bass C anticipates* (is) the root (C) of C6.

The Roman numeral situates the chord *exactly where it is*, I° going to I6.

This chord also has no parent scale. The chord scale of preference is the **[Dim 1-½]** scale. But, as long as you keep the chord tones of the diminished chord in the chord scale, basically anything goes (see previous paragraph).

Even better! Instead of *diminished* approach or auxiliary chords, one can make up one's own invented chords, and even "non-existent chords", with anticipations and approaches. (See also further [Parallel Harmony](#) and [The Auxiliary IV-Chord](#).)

¹ 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

With inversions of diminished chords, there are many possible resolutions to inversions of the target chord. The chart below shows how all these resolutions respect the typical bass resolutions in ascending or descending semitones, or static.

However, the written basses can mislead. An *apparently* ascending diminished may in fact be an *originally* descending diminished, and vice versa. And it leads to even more confusion when the copyist neglects to indicate the inversions of the target chord with slash symbols, thus hiding the intended bass resolutions.

Written chord	Target chord	Bass motion	Actually	Or
B°	C	up	upward dim chord VII°	B°
D°	Cm/E♭	up		B°/D
F°	C/E	down		B°/F
F°	Cm7 ^{b5} /G♭	up		B°/F
A♭°	C/G	down		B°/A♭
B°	C7/B♭	down		B°
B°	C ^Δ /B	static		B°
D♭°	C	down	downward dim chord bII°	D♭°
E°	Cm/E♭	down		D♭°/F♭
E°	C/E	static		D♭°/F♭
G°	Cm7 ^{b5} /G♭	down		D♭/A♭
G°	C/G	static		D♭/A♭
B♭°	C7/B♭	static		D♭/C♭
B♭°	C ^Δ /B	up		D♭/C♭
C°	C	static	static dim chord I°	C°
E♭°	Cm/E♭	static		C°/E♭
E♭°	C/E	up		C°/E♭
G♭°	Cm7 ^{b5} /G♭	static		C°/G♭
F♯°	C/G	up		C°/G♭
A°	C7/B♭	up		C°/B♭
C°	C ^Δ /B	down		C°

One more good reason to use the [Dim 1-½] chord scale *for all diminished chords, without distinction*, especially in improvisation!

In *composition*, however, one has more time and freedom, to use [Locrian^{b7}] or [Dim 1-½] to major chords, and [Ultra-Locrian] or [Ultra-Locrian⁹] to minor chords, for the upward dominant-diminished VII°.

For the downward approach chord bII° and the static auxiliary chord I°, there's even more freedom in choice of approach and anticipation tones, in between the chord tones.

Other Approach or Auxiliary Chords

PARALLEL HARMONY

It is possible to approach a specific chord type chromatically with the same chord type, in descending (usually) or ascending semitones: m7 to m7, Δ to Δ, and 7 to 7 (rarely or never m7♭5 to m7♭5). This way of thinking is called **parallel harmony**.

Later in this book it will appear that some of these parallel approach chords are not mere approaches but, e.g., modal interchange chords, with specific chord scales. Yet one also encounters chords that one cannot explain in any other way than "chromatic approach".

In almost all cases the chord **type** is decisive:

- m7 => [Dorian] (m7^{b5} => [Locrian])
- Δ => [Lydian]
- 7 => [Lydian^{b7}]

m7 to m7

The most common approach is from **m7 to m7**. It's mostly ¹ 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 ^Δ	(Em7)	E♭m7 ²	Dm7	G7
I ^Δ [Ion] CMaj	(IIIIm7) ([Phr]) _____	? [Dor] NPS	IIm7 [Dor] CMaj	V7 [Mixo] _____

Coming from VIm7 (or not):

C ^Δ	(Am7)	A♭m7	Gm7	C7
I ^Δ [Ion] CMaj	(VIm7) ([Aeol]) _____	? [Dor] NPS	? [Dor] (FMaj)	V7/IV [Mixo] _____

Coming from IIIm7 (or not):

... Em7	(Dm7)	D♭m7	Cm7	F7
... IIIm7 ... [Phr] ... CMaj	(IIIm7) ([Dor]) _____	? [Dor] NPS	? [Dor] (B♭Maj)	SubV7/III [Lyd ^{b7}] NPS

¹ Not to say: "always".

² E♭m7 is also a [Modal Interchange](#) chord, from the Locrian parent scale: ♭IIIm7 that happens to be [Dorian] also.

Δ to Δ

The Δ approach chord will almost always be a [Lydian] chord, but a closer analysis might reveal new chord scale types.¹

For now, let's keep it to [Lydian].

Dm7	D♭Δ	CΔ
IIm7	?	IΔ
[Dor]	[Lyd]	[Ion]
CMaj	NPS	CMaj

7 to 7

The 7-chord, with downward semitone resolution, is already known.

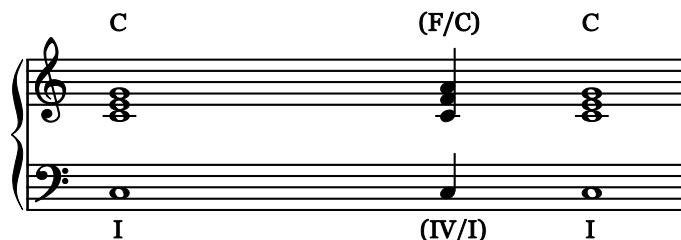
It's a [Lyd⁷] Substitution Dominant.²



Am7	A♭7	G7
—	—	—
VIm7	SubV7/V	V7
[Aeol]	[Lyd⁷]	[Mixo]
CMaj	NPS	CMaj

THE AUXILIARY IV-CHORD

The **auxiliary IV-chord** is a cliché. One rarely finds it notated on the score because it is a *freely improvised embellishment* on an existing chord. For example:



The written chord C (I) is approached by F (IV).

The bass remains C (F/C) as this is an *auxiliary chord* (not a new chord).

When this cliché becomes inherently part of the composition, it is better to notate it on the score (between brackets, or not), and then I always analyze it as IV/I (read IV **of** I).³

¹ See [minor Sub-Dominants \(SDm\)](#).

² See [Substitution Dominants](#).

³ I also often refer to it as “*the plagal effect*” because it looks and sounds similar to a plagal cadence.

A feature of this auxiliary chord is that it uses *diatonic* approaches, i.e., not just semitone, but also whole tone approaches.

- The A tone approaches the fifth (G) of the target chord C with a *whole* tone.
- The F note approaches the third (E) of the chord C with a *diatonic* semitone.
- C *stays in the bass* (no chord change, but an embellishment).

Such auxiliary chords confirm the modal color of the noted chord.

C (I) is an [Ionian] chord, and A and F are both diatonic tones in the Ionian mode.¹

Other diatonic auxiliary chords are thus conceivable:

- Dm/C with three descending *auxiliary* tones: D to C, F to E, A to G.
- G/C with two ascending *auxiliary* tones: B to C, D to E.

Dm and F are modally stronger, because they both contain the *characteristic tone* (F) of the Ionian mode.² But the auxiliary-IV deserves a special mention because it is used so much more frequently than others.

In Blues

The blues chords, noted on the score, are C7, F7 and G7.

The smaller chord symbols at the bottom are *not* on the score. Here for analysis only.

The chords in brackets are the auxiliary-IV chords.

Each blues chord is [Mixolydian]³ and the auxiliary chords confirm that Mixolydian color. Notable in this example is that the auxiliary chord also functions as a passage between the triad C and the four-note C7.

In Pop/Country/Folk/ ...

C	(F/C)	C	F	(Bb/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 main chords C, F, and G, are approached by their own auxiliary-IV chord.

The [Ionian] C is thus confirmed in its modal color.

The [Mixolydian] G is also confirmed in its color.

The F chord now becomes [Ionian] instead of [Lydian], a bluesy modal change.

¹ For comparison: the diminished auxiliary chord C° uses the *chromatic* tones Eb and Gb.

² See [Modal Voicings](#).

³ See [A Modal Approach to the Blues](#).

In Jazz**‘So What’ (Miles Davis)¹**

Dm⁷
(G/D)
IV/I
Dm⁷
Im⁷

So What - Miles Davis (1926 - 1991) on the Im⁷

The [Dorian] Im7 (Dm7) is confirmed in its color by its auxiliary-IV chord.

Extended auxiliary IV-chords

A "waterfall" of auxiliary-IV chords is also possible and also causes a waterfall of modal changes. In such a case, one needs to write the auxiliary chords on the score.

C E[♭] B[♭] F C D[♭] A[♭] E[♭] B[♭] F C

I IV/ IV/ IV/ I IV/ IV/ IV/ IV/ I

C pedal (= keep C in the bass all the time)

The starting chord is C [Mixolydian] (or C Blues). The bass *remains* C under the entire construction. Each chord is preceded by its IVth degree (IV/IV/IV ... /I).

1st waterfall: E♭/C, B♭/C and F/C give a [Dorian] color to the C chord.

The C chord only becomes [Mixolydian] again at the last resolution on C.

2nd waterfall: D♭/C = [C Phrygian], A♭/C = [C Aeolian], E♭/C, B♭/C and F/C = [C Dorian], to end on C = [C Mixolydian].

Extended “plagal cadences”

A similar construction as above, but this time the bass follows the "auxiliary chords". Each chord is one perfect fourth above the next (IV/IV/IV ...).

‘Hey Joe’ (Billy Roberts)² with *retrogressive* bass (going *up* the circle of fifths).

Hey Joe (Billy Roberts) - best known in the Jimmy Hendrix version

C G D A E

bVI (IV/...) bIII (IV/...) bVII (IV/...) IV (IV/...) I

See [Modal Interchange](#) and [Major/minor Multimodal System](#) for Roman numerals.

¹ © 1959 Jazz Horn Music Corporation

² © 1962 [Renewed] Third Palm Music

MORE ABOUT THE BLUES

The original 12-bar Blues format¹ remains in constant evolution, with the addition of secondary dominants, II-V cadences, substitution dominants, and approach chords. It is impossible to list all the creative ideas of composers and improvisers. I'll mention the most common variations below.

BLUES WITH SECONDARY DOMINANTS

These are perhaps the most common variations on the blues format, because the use of (only) 7 chords is so typically blues.

C7	F7	C7	C7
I7 [Blues]	IV7 [Blues]	I7 [Blues]	I7 (=V7/IV) [Mixo]
(C Blues)			F Major

F7	F7	C7	A7
IV7 [Blues]	IV7 [Blues]	I7 [Blues]	V7/II [Sp.Phr]
(C Blues)			Dm Harmonic

D7	G7	C7	A7	D7	G7
V7/V [Mixo]	V7 [Mixo]	I7 [Blues]	V7/II [Sp.Phr]	V7/V [Mixo]	V7 [Mixo]
G Major	C Major	(C Blues)	Dm Harm	G Major	C Major

- [Blues] for "chord scale," and (C Blues)² for "parent scale" on I7 and IV7, stands, conveniently, for each blues option listed in [Improvising on Blues](#). These options are:
 - The traditional **C Blues scale**. Possibly even over the entire chorus. But that then results in quite a few clashes with the secondary dominants. Blues die-hards will bend their tones where necessary.
 - The [Blues] (with Major third) and/or the [Maj.Blue] scales (or [Ext.Blue]) as "chord scales" (adapted to the chords) is typically "the pianist's option".
 - The [Mixolydian] chord scale, for both chords, is a modal option too.³
- [Mixo] on V7/IV, V7/V and V7: basic option for dominants targeting major chords.⁴

¹ See [Blues Structure](#).

² (C Blues) is in brackets because this is *not a parent scale*, but an improvisational scale.

³ See [A Modal Approach to the Blues](#).

⁴ See [Major-V7 \[Mixolydian\]](#).

- [Sp.Phr] on V7/II, with B \flat (T9) on A7 (instead of [Mixo \flat^{13}], with B).
Because this chord follows C7 (with B \flat) in a C major Blues (with blue note B \flat).

However, to sound more "jazz", one can use [The Eight Dominant Chord Scales](#) on the secondary dominants, opening up options for modal changes and/or Lydian alternatives. And the [Blues "Chord Scales"](#) are possible too, to sound more "bluesy".

BLUES WITH SECONDARY II-V CADENCES

With secondary II-V cadences, the Blues starts to sound yet more jazzy.

C7	F7	C7	Gm7 C7
I7 [Blues]	IV7 [Blues]	I7 [Blues]	? * V7/IV [Dor] [Mixo]
(C Blues)			F Major

F7	F7	C7	Em7 A7
IV7 [Blues]	IV7 [Blues]	I7 [Blues]	IIIIm7 V7/II [Phr] [Mixo \flat^{13}]
(C Blues)			C Major _ Dm Mel _

Dm7	G7	Em7 A7	Dm7 G7
IIIm7 [Dor]	V7 [Mixo]	IIIIm7 V7/II [Phr] [Mixo \flat^{13}]	IIIm7 V7 [Dor] [Mixo]
C Major			C Major

- Bar 4: The question mark on Gm7 will be filled in at [Modal Changes](#).
- **[Blues]:** all blues options.

The other proposed chord scales are basic options as seen in the previous chapters.

- Bar 8: In this context, I propose [Mixo \flat^{13}] on V7/II, with B (T9) on A7.
Because this time, the chord follows Em7 (with B).

BLUES WITH SUBSTITUTION DOMINANTS

In the example below, I've wrote *all possible substitution dominants* in brackets, as optional chords. Indeed, one would never play *all* subV7 chords.

C7	(G♭7)	F7	(D♭7)	C7	C7	(G♭7)
I7	(SubV7/IV)	IV7	(SubV7/I)	I7	V7/IV	(SubV7/IV)
F7		F7	(D♭7)	C7	(B♭7)	A7
IV7		IV7	(SubV7/I)	I7	(SubV7/VI)	V7/II
D7	(A♭7)	G7	(D♭7)	C7	A7	D7
V7/V	(SubV7/V)	V7	(SubV7/I)	I7	V7/II	V7/V
						G7
						V7

- See previous pages for chord scale options.
- For SubV7 chords: [Lydian^{b7}]

BLUES WITH DIMINISHED CHORDS

#IV°¹, as passage from IV7 back to I7, is a “classic” in Blues.

C7	F7	(F♯°)	C (/G)	C7
I7	IV7	(#IV°)	I	I7 (=V7/IV)
F7	F♯°	C/G	E7/G♯	A7
IV7	#IV°	I	V7/VI	V7/II
D7	G7	C7	A7	D7
V7/V	V7	I7	V7/II	V7/V
				G7
				V7

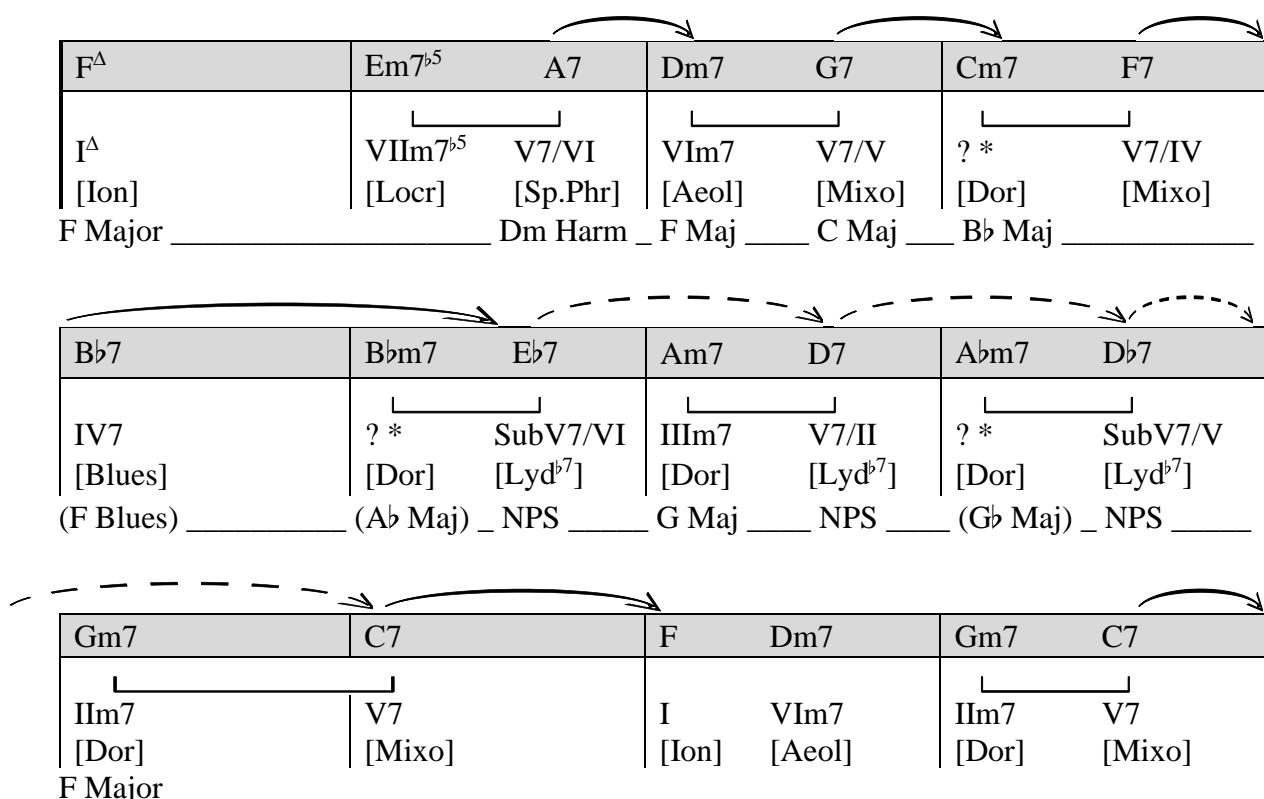
- See previous pages for chord scale options.
- For #IV°: [Dim 1-½]
- V7/VI: [Sp.Phr] (Am Harmonic parent scale) ... or better, [Alt]: T♯11 = A♯ = blue note B♭.

¹ See also [Chromatically Altered Sub-Dominants](#).

“SWEDISH BLUES” OR “BIRD CHANGES”

This Blues style mixes typical jazz structures with just a few remaining Blues elements.

‘Blues For Alice’¹ from Charlie Parker (nickname: “Bird”) appears on the album “Swedish Schnapps” (1951). Hence the designation “Swedish Blues” and “Bird Changes”.



- One still has a 12-bar Blues structure:
 - 1st phrase starts on Tonic
 - 2nd phrase starts on Subdominant
 - 3rd phrase starts on a Dominant-like II-V *cadence*.
- Bar 5: One keeps the typical IV7 [Blues] chord.
Or, one considers it a [Mixolydian] dominant to E♭7 (see arrow).
- Bar 4, 6 and 8: The question marks will get filled in at [Modal Changes](#).
- Bar 6, 7 and 8: Three consecutive [Dor] – [Lyd^{b7}] cadences to enhance the parallelism of the harmony.

Bar 3: [Dor] – [Mixo], like in Bar 4, is an option too (parallelism).
However, Dm7 [Aeol] takes into account the residual B♭ from Bar 2.

The other suggested chord scales are basic options as seen in previous chapters.
Remember that there are always more options.

¹ © 1956 Atlantic Music Corp. (renewed 1984)

‘Bluesette’¹ 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.

The diagram consists of three horizontal tables representing harmonic progressions:

- Top Table:** Shows chords B♭Δ, Am7^{b5}, D7, Gm7, C7, Fm7, and B♭7. Below the chords are labels: I^Δ [Ion] for Am7^{b5}; VIIm7^{b5} [Locr] for D7; VIm7 [Aeol] for Gm7; V7/V [Mixo] for C7; ? * [Dor] for Fm7; and V7/IV [Mixo] for B♭7. Below the labels are the implied scales: B♭ Major, Gm Harm, B♭ Maj, F Maj, and E♭ Maj.
- Middle Table:** Shows chords E♭Δ, E♭m7, A♭7, D♭Δ, D♭m7, and G♭7. Below the chords are labels: IV^Δ [Ion] for E♭m7; ? * [Dor] for A♭7; SubV7/VI [Lyd^{b7}] for D♭Δ; ? * [Ion] for D♭m7; and ? * [Dor] for G♭7. Below the labels are the implied scales: E♭ Maj, D♭ Maj, NPS, D♭ Maj, C♭ Maj, and NPS.
- Bottom Table:** Shows chords C♭Δ, Cm7^{b5}, F7, Dm7, D♭7, Cm7, and F7. Below the chords are labels: ? * [Ion] for Cm7^{b5}; IIIm7^{b5} [Locr] for F7; IIIm7 [Phr] for Dm7; SubV7/II [Lyd^{b7}] for D♭7; IIIm7 [Dor] for Cm7; and V7 [Mixo] for F7. Below the labels are the implied scales: C♭ Maj, B♭m Nat, B♭m Harm, B♭ Maj, NPS, and B♭ Maj.

- The blues structure remains.
- The I7 and IV7 blues chords have been "restored" to regular Δ chords. IV^Δ [Ion] (instead of [Lyd]), because introduced by its secondary dominant.²
- Bar 3: Gm7 [Aeol] takes into account the residual E♭ from Bar 2.
- Bars 4, 6, 7, 8 and 9: The question marks will get filled in at [Modal Changes](#). The proposed chord scales for the Δ-chords are [Ion], because they are each introduced by their secondary dominant. However, it is possible, and also more convenient, to analyze these bars as consecutive IIIm7 [Dor] – V7 [Mixo] – I^Δ [Ion] modulations:
 - Bar 4 and 5: modulation to E♭ Major
 - Bar 6 and 7: modulation to D♭ Major
 - Bar 8 and 9: modulation to C♭ Major
- Bars 10 to 12: Back to B♭, minor at first with a [Locr] – [Sp.Phr] II-V cadence, then to B♭ Major with a common turnaround (with SubV7/II).

¹ © 1963,1964 MCA-Duchess Music Corp. and New Thunder Music Inc.

² See [Tonal Change on IV^Δ](#).

MINOR FUNCTIONAL HARMONY

In this chapter we'll learn how the minor harmony is a lot more complex, but also allows for a lot more possibilities, than the major harmony. Just to be *functional*, the minor key¹ already needs *at least two* different parent scales. But in practice there are *four*, which amounts to *twenty-eight possible diatonic chords!*²

The Natural minor Parent Scale

Remember the numbering of the scale degrees in natural minor (or Aeolian).

A musical staff with a treble clef and a key signature of one flat (B-flat). The notes are: C, D, Eb, F, G, Ab, Bb, C. Below each note is its Roman numeral: 1, 2, b3, 4, 5, b6, b7, (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

To generate the series of diatonic chords, one stacks thirds, up to four notes (root and body), on each note of the parent scale. Only diatonic notes are used (no alterations with respect to the key signature).

A musical staff with a treble clef and a key signature of one flat (B-flat). The chords are: Cm7, Dm7b5, EbΔ, Fm7, Gm7, AbΔ, Bb7. Below each chord is its Roman numeral: I, II, bIII, IV, V, bVI, bVII.

The diatonic chords of the C natural minor scale are:

I	is a C chord	C – Eb – G – Bb	1 – b3 – 5 – b7	→	Cm7
II	is a D chord	D – F – Ab – C	1 – b3 – b5 – b7	→	Dm7b5
bIII	is a Eb chord	Eb – G – Bb – D	1 – 3 – 5 – 7	→	EbΔ
IV	is a F chord	F – Ab – C – Eb	1 – b3 – 5 – b7	→	Fm7
V	is a G chord	G – Bb – D – F	1 – b3 – 5 – b7	→	Gm7
bVI	is a Ab chord	Ab – C – Eb – G	1 – 3 – 5 – 7	→	AbΔ
bVII	is a Bb chord	Bb – D – F – Ab	1 – 3 – 5 – b7	→	Bb7

Remember the series of natural minor diatonic chords

Im7 – IIm7b5 – bIIIΔ – IVm7 – Vm7 – bVIΔ – bVII7

¹ See [Major-minor Tonality or Functional Music](#).

² Even if some of these chords and chord scales are less common, they do exist as possible options.

Im7 is *central chord* (or tonic).

The three *main chords*, built on the *tonal degrees*, are *minor*: **Im7**, **IVm7** and **Vm7**. We will see in a moment how this affects the *functionality* of the key.

The *parallel chords*, built on the *modal degrees*, are *major* – **♭III^Δ**, **♭VI^Δ** and **♭VII7** – with exception of **IIm7^{♭5}**.

HARMONIC FUNCTIONS OF THE CHORDS

DOMINANT

We know by now that dominant chords must contain the tritone (4 and 7) of the tonality. Since the natural minor scale has **♭7**, and thus *no leading tone* (7) ...

... there are **NO Dominant** chords!

The chord expected to be dominant, built on the **Vth** degree, here is **Vm7**, with no tritone. It is a subdominant chord (contains 4, but not 7), or like the **V7sus4** chord ¹, a weakened dominant SD(D).

SUBDOMINANT

Chords that contain the 4th degree (but not 7) are subdominant chords.

IIm7^{♭5}, IVm7, (Vm7) and **♭VII7** are Subdominant (SD).

A musical staff in G clef and A key signature (two flats). Seven boxes are placed above the staff, each containing a vertical stack of three notes (chord symbol). From left to right, the boxes are labeled: T, SD, T, SD, SD(D), T, SD. Below the staff, the corresponding chord names are written: Im7, IIm7^{♭5}, ♭IIImaj7, IVm7, Vm7, ♭VImaj7, and ♭VII7.

TONIC

Chords that do NOT contain the 4th degree are tonic chords.

Im7, ♭III^Δ and ♭VI^Δ are Tonic (T).

A musical staff in G clef and A key signature (two flats). Seven boxes are placed above the staff, each containing a vertical stack of three notes (chord symbol). From left to right, the boxes are labeled: T, SD, T, SD, SD(D), T, SD. Below the staff, the corresponding chord names are written: Im7, IIm7^{♭5}, ♭IIImaj7, IVm7, Vm7, ♭VImaj7, and ♭VII7.

Of course, **Im7** is the only *central chord*, the true *finalis* or *end chord*.

¹ See [The V7sus4 Chord](#).

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]

E♭ major and C natural minor are *relative scales*. The main, and only, difference is that the center of gravity (the central tone of the tonal system) is displaced from E♭ to C.

So, both parent scales *share the same diatonic chords*, with the same chord scales. Only the central chord is different.

Relative scales C natural minor and E♭ Major								
1	2	♭3	4	5	♭6	♭7		
C	D	E♭	F	G	A♭	B♭		
[Aeol] ¹	[Locr]	[Ion] ²	[Dor] ³	[Phr] ⁴	[Lyd] ⁵	[Mixo] ⁶		
Im7	IIm7 ^{♭5}	♭III ^Δ	IVm7	Vm7	♭VI ^Δ	♭VII7		
T	SD	T	SD	SD(D)	T	SD		
Cm7	Dm7 ^{♭5}	E♭ ^Δ	Fm7	Gm7	A♭ ^Δ	B♭7		
		E♭ ^Δ	Fm7	Gm7	A♭ ^Δ	B♭7	Cm7	Dm7 ^{♭5}
		T	SD	T	SD	D	T	D
		I ^Δ	IIm7	III ^Δ	IV ^Δ	V7	VIm7	VII ^Δ
		[Ion]	[Dor]	[Phr]	[Lyd]	[Mixo]	[Aeol]	[Locr]
		E♭	F	G	A♭	B♭	C	D
		1	2	3	4	5	6	7

¹ On the *finalis* chord Im7, one will avoid T11, because this tension (4th degree of the tonality) causes the function to shift from tonic to subdominant. With T11, the final chord will sound "imperfect".

² With T9, the tonic function will shift to subdominant!

³ T13 is *definitely* an available tension, and characteristic tone, on this IVm7 [Dorian] chord (as opposed to IIm7 [Dor], see [Characteristics of the Chord Scales](#)). One even encounters this chord quite often as IVm6.

⁴ The Vm7 [Phr] SD(D) chord is rarely used in functional music. One does encounter it as a relative-II chord in a secondary cadence to IVm7, or in [Modal Non-Functional Harmony](#).

⁵ T#11 is *definitely* an available tension, and characteristic tone, on ♭VI^Δ [Lydian] (see point 3 above). But, with T13, the tonic function will shift to subdominant!

⁶ Although this chord is a 7 chord, it is NOT a dominant chord!

Mode	Characteristic tone	Compared to	... with
Aeolian	Av \flat 13 Av\flat13 \flat 7	Dorian Melodic Harmonic	T13 T13 7
Locrian	\flat 5	Phrygian	5
Ionian	Av11	Lydian	T \sharp 11
Dorian	T13	Aeolian	Av \flat 13
Phrygian	Av \flat 9	Aeolian	T9
Lydian	T \sharp 11	Ionian	Av11
Mixolydian	\flat 7 Av11	Ionian Lydian \flat 7 ¹	7 T \sharp 11

As we learn more about minor functional harmony, we will see that a minor tonal system, with four parent scales, has much more modal characteristics than the major system. There will be more playing with the specific colors of the modes, and of the chord scales, and not always for functional reasons.

One sees e.g., in the chart of characteristic tones above, that the Aeolian mode is now also compared to Melodic and Harmonic. In this respect, such a table is insufficient, as many more modal comparisons can be made. But at the same time, it now becomes crucial to understand properly what *playing with specific colors*, or *modal playing*, means in practice.

The Harmonic minor Parent Scale

With the discovery of functional harmony, the *Ionian* (or *major*) and *Aeolic* (or *minor*) modes began to overtake the other church modes as tonal (read *functional*) systems.²

The Aeolian mode was a very old reference, as evidenced by the absolute tone names A B C D E F G (= the **notes** of the **A minor** natural scale). And the Ionian mode gradually became a new reference, as evidenced by the "new" relative tone names DO RE MI FA SOL LA SI (the scale **degrees** of **any major scale**).

Finally, the major mode prevailed thanks to the presence of the leading tone (7). This provided a tritone (**4** and **7**), necessary for the dominant function.

¹ This opposition applies both between the [Mixo] and the [Lyd \flat 7] dominants (see [The Four “Lydian” Dominants](#)), and between this \flat VII7 [Mixo] subdominant and the \flat VII7 [Lyd \flat 7] *minor subdominant* that we are about to learn (see [minor Sub-Dominants \(SDm\)](#)).

² See [Major-minor Tonality or Functional Music](#) at the very beginning of this book.

None of the other church modes – below from bright to dark – contain this tritone.

Major modes (with <u>3</u>)	Lydian	1	2	<u>3</u>	#4	5	6	7
	Ionian	1	2	<u>3</u>	4	5	6	7
	Mixolydian	1	2	<u>3</u>	4	5	6	b7
Minor modes (with b3)	Dorian	1	2	b <u>3</u>	4	5	6	b7
	Aeolian	1	2	b <u>3</u>	4	5	b6	b7
	Phrygian	1	b2	b <u>3</u>	4	5	b6	b7
	Locrian ¹	1	b2	b <u>3</u>	4	b5	b6	b7

Without that leading tone, the old **minor** Aeolian reference mode was due to "disappear", just like the other modes, because it couldn't generate a dominant chord, and was therefore unsuited for functional harmony. To give it a dominant chord, one had to replace its subtonic (b7) with the leading tone (7). Thus, the harmonic scale was invented, a *synthetic*² scale, with an altered degree in respect to the key signature:

C Harmonic minor scale

leading tone

WT + st
harmonic gap

C D Eb F G Ab B C
1 2 b3 4 5 b6 7 (1)

This scale has a *harmonic gap* between Ab (b6) and B (7), which one can fill in at will with Bb (b7 = the subtonic). The scale then becomes octotonic.

Because the harmonic scale is synthetic, it will generate new, and strange, chords and chord scales. The harmony becomes a lot more complex. We will therefore discuss the chords one by one. We'll start with the dominant that is the very purpose of existence of the harmonic scale.

SERIES OF DIATONIC CHORDS IN HARMONIC MINOR

Cm^A Dm7^{b5} Eb^{A#5} Fm7 G^{7b9} Ab^A B°

IImaj7 IIIm7^{b5} bIIImaj7^{#5} IVm7 V7^{b9} bVIImaj7 VII°

T SD T SD D T D

¹ 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.

² Church modes are *natural* modes. They can, unlike *synthetic* modes, be played on a piano without using black keys.

The Harmonic-V7^{b9} Dominant

We have encountered this [Spanish Phrygian] chord many times now.¹

G7 [Spanish Phrygian] or [Mixolydian $\flat 9/\sharp 13$]

1 Tb9 T#9 3 Av11 5 Tb13 b7

- V7^{b9} (with the typical Tb9) very often refers to this harmonic dominant.²
- Tb13 is also typically [Sp.Phr], hence the alternative name [Mixolydian^{b9/b13}].
- Note also that 11 is (still³) avoid.

Tb9 is always accompanied by (the optional) T#9 (= octotonic scale).

T#9 (A#) is enharmonic to B-flat (or b3).

One can therefore compare [Spanish Phrygian] to a Phrygian scale with ...

- ... *major third* (3) instead of minor third (b3) (= without T#9)
- ... *both thirds* (3 and b3) (= with T#9)

On the harmonic V7^{b9}sus4 one simply plays [Phrygian], a heptatonic (seven notes) scale *with* T#9 and *without a major third* (3) (and without avoids).

G7sus4 [Phrygian]

1 Tb9 T#9 ^{no}_{3rd} T11 5 Tb13 b7

The scale *with both thirds* is used as parent scale for typical Spanish music, hence the name *Spanish Phrygian*.⁴

The Harmonic-VII° Dominant

Unlike VIIIm7^{b5} in major, the **harmonic-VII°** is an often-used *functional* dominant chord, which we already encountered as the *rising diminished chord*.⁵

B° [Ultra Locrian]

1 Avb9 b3 Tb11* b5 Tb13 bb7 T7 6

¹ See [Parent Scales for Secondary Dominants](#).

² In opposition to the Melodic Dominant, with T9.

³ See [The Four “Lydian” Dominants](#).

⁴ See [Modal Cadences – Phrygian mode](#).

⁵ See [The Upward Diminished Chord](#).

⁶ bb7 is always accompanied by T7 (= filling the harmonic gap).

This chord with its strange chord scale is easier to understand, and remember, as an **inversion of V7 [Sp.Phr]** with third in the bass.

	B	C	D	E♭	F	G	A♭	A♯
VII° [Ultra Locrian]	1	A♭9	♭3	T♭11*	♭5	T♭13	♭7	T7
V7/3 [Spanish Phrygian]	3	A♭11	5	T♭13	♭7	1	T♭9	T♯9

Both scales share, *in notes* (not in degrees), the same tensions and avoids.

The fact that one encounters B° so often with G in the melody also seems to confirm the inversion idea.

The Harmonic-Im^Δ Tonic

One does not often see m^Δ-chords on score, but one does hear it often in jazz improvisation. What one does hear, however, is more often the melodic-Im^Δ, without avoids, which we are about to learn.

Here too, one sometimes fills in the harmonic gap with B♭. The resulting octotonic scale is also called [Harmonic minor Bebop], or [Natural minor Bebop].

Notice! With T11, the function shifts from tonic to subdominant.

Other Possible Harmonic Chords

In common practice, the harmonic scale is essentially a *dominant* scale. It was created exclusively from the *harmonic* need for a dominant chord.

The other chords – II $m7^{b5}$, \flat III $^{\Delta\#5}$, IV $m7$ and \flat VI $^\Delta$ – are rarely if ever used.

The Harmonic-II $m7^{b5}$

Dm $7\flat5$ [Locrian 13]

1 Av \flat 9 \flat 3 T11 \flat 5 (T \flat 13) T13 \flat 7

This chord can be used in a II $m7^{b5}$ -V7 minor cadence to have the same harmonic parent scale over the entire (dominant) cadence.¹

The Harmonic- \flat III $^{\Delta\#5}$

E \flat maj $7\sharp5$ [Ionian #5]

1 T9 3 Av11 (5) #5 Av13 7

The Harmonic-IV $m7$

Fm 7 [Dorian #4]

1 T9 \flat 3 (T11) T \sharp 11 5 T13 \flat 7

The Harmonic- \flat VI $^\Delta$

A \flat maj 7 [Lydian #9]

1 (T9) T \sharp 9 3 T \sharp 11 5 T13 7

¹ See [Introducing minor Functional Harmony](#).

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 ^{b9}	$\frac{1}{2}$ – $1\frac{1}{2}$ – 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 ^{b4}	1 – $\frac{1}{2}$ – $\frac{1}{2}$	1 – 2 – \flat 3 – \flat 4	
Lydian ^{#9}	$1\frac{1}{2}$ – $\frac{1}{2}$ – 1	1 – \sharp 2 – 3 – \sharp 4	Hungarian Major
minor ^{#4}	1 – $\frac{1}{2}$ – $1\frac{1}{2}$	1 – 2 – \flat 3 – \sharp 4	Hungarian minor

For the construction in tetrachords of Harmonic, Spanish Phrygian (and Phrygian) and Ultra-Locrian, see previous chapters.

LOCRIAN 13 MODE

IONIAN #5 MODE

C phrygian tetrachord G \flat lydian #9 tetrachord C Major tetrachord G \sharp spanish tetrachord

DORIAN #4 MODE

LYDIAN #9 MODE

C minor #4 tetrachord G minor tetrachord C lydian #9 tetrachord G Major tetrachord

The Melodic minor Parent Scale

When one sings, on top of the harmonic dominant, one meets a strange leap between $\flat 6$ and 7 (the harmonic gap between $A\flat$ and B) that generates an Arabic-like melody.

One can, as mentioned earlier, close the gap by re-adding the subtonic ($B\flat$) to the scale. But then one has consecutive semitones ($B\flat - B - C$).

But, one can also restore $\flat 6$ ($A\flat$) back to 6 (A). And that's how the melodic scale is created, from a *melodic* need on top of the dominant chord.¹

Cm Melodic scale

C D E_{flat} F G A B

1 2 3 4 5 6 7

SERIES OF DIATONIC CHORDS IN MELODIC MINOR

Cm^Δ Cm⁶ Dm7 EbΔ^{#5} F7 G⁹ Am7^{♭5} Bm7^{♭5}

IImaj7 Im6 IIIm7 bIIImaj7#⁵ IV7 V9 VIIm7^{♭5} VIIIm7⁵

T T SD T SD D (T) D

The Melodic-V9 Dominant

We also encountered this [Mixolydian^{b13}] chord on numerous occasions.³

G9 [Mixolydian $\flat 13$]

1 T9 3 Av11 5 T \flat 13 7

T9 is the only, but characteristic, difference from the harmonic dominant (with $T\flat 9$).

¹ Perhaps the Arabic sound of the harmonic mode (also sometimes called Mohammedan scale) was one of the reasons for creating the melodic mode. At the time of its creation, a period that followed the Crusades, the Catholic Church was the absolute authority on musical practice.

² As a reminder, the two consecutive tetrachords are *minor/major* (see [The Melodic minor scale](#)). That is why this scale is also called *hybrid minor*.

³ See [Parent Scales for Secondary Dominants](#).

The Melodic-IV7^{#11} Subdominant

F^{#11} [Lydian b7]

1 T9 3 T#11 5 T13 b7

On *subdominant* chords too, the melody will often be played with the restored 6th degree (A – major third of this chord) (instead of A♭).

This very frequently used melodic subdominant IV7^{#11} is at the origin of the old classical German name **Dür-Moll** for the melodic scale. The name stands for "The scale that provides a major (*dür*) subdominant to the minor (*moll*) key".¹

Striking! We already encountered his very recognizable [Lydian^{b7}]² *subdominant* chord scale as a chord scale for the *Lydian dominant*³, and for the *substitution dominant*.⁴ We'll also encounter it as a chord scale for a *minor subdominant*.⁵

The Melodic-IIm7 Subdominant

Dm7 [Dorian b9]

1 Avb9 b3 T11 5 T13 b7

Same observation as above: *subdominant* chord, with possible use of the restored 6th degree (A - fifth of this chord) in the melody.

This chord can be used in a IIIm7-V7 minor cadence (that *looks like* a major cadence) to use the same melodic parent scale throughout the cadence.⁶

The Melodic-Im^Δ also known as Melodic-Im6 Tonic

Cm^Δ aka Cm⁶ [Melodic]

1 T9 b3 T11 5 T13 7

Im^Δ will more often be [Melodic], with T13, than [Harmonic] (with Avb13). And so, to emphasize this tension, one often plays the chord as Im6. But Im6 can also be [Dorian], as we will soon discover.

Notice! With T11 the function shifts from tonic to subdominant.

¹ See also [The Majorb6 Parent Scale](#).

² See [The Lydianb7 scale](#).

³ See [The ‘Lydian’ Dominant \[Lydianb7\]](#).

⁴ See [Chord Scales for SubV7 Chords](#).

⁵ See [Lowering the 6th degree of the Major parent scales](#).

⁶ See [Introducing minor Functional Harmony](#).

The Melodic-VIm7^{b5} (Tonic)

Am^{7b5} [Locrian 9]

1 T9 b3 T11 b5 Tb13 b7

As a *tonic*, one will barely use this chord, due to its unstable diminished fifth.

But one can certainly encounter it as a *relative-II subdominant* in a cadence to V.

The [Locrian⁹] chord scale (primary function) is then certainly a tasteful option instead of the usual [Locrian] chord scale (secondary function).

The Melodic-IV^{A#5} (Tonic)

E^bA^{#5} aka G/E^b [Lydian #5]

1 T9 3 T#11 A^{#5} (Tb13) 7

This chord is quite unusual, but one sometimes comes across it notated as G/E^b (= exactly the same, but easier to read). With its augmented fifth, it sounds, as a tonic, rather unstable.

The fact that T13 (C) sounds rather like a tension than like an avoid (which, according to the "semitone above chord tone" rule, it should be) seems to indicate that we hear this chord as Im^{A9} with third in the bass.

Note! With T9, the function shifts from tonic to subdominant.

The Melodic-VIIIm7^{b5} (Dominant)

Bm^{7b5} [Super Locrian]

1 Avb9 b3 Avb11 b5 Tb13 b7

Just like its Major-VIIIm7^{b5} equivalent, this chord is "never" used.

His [Super Locrian] chord scale is often thought of as the origin of the [Altered] scale.¹
Indeed, both scales are enharmonically similar.

Below is the comparison between Bm7^{b5} [Sup.Locr] and B7alt (as V7 in E minor).

Bm7 ^{b5} [Super Locrian]	B	C	D	E ^b	F	G	A
B7alt [Altered]	B	C	C ^x ²	D [#]	E [#]	G	A

¹ A hypothesis I do not share.

² x is the symbol for double sharp (or ##).

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 #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 mode also generates chords for the functional minor system. This mode never completely fell into disuse, despite the "functional tonal revolution" in the Renaissance. It certainly survived as a mode in folk and ethnic music, and therefore it was also picked up by classical composers in the Romantic 19th century.

The Dorian mode is very often used in **Blues**¹, as it contains both blue notes $\flat 3$ and $\flat 7$.² Consequently, all Dorian chords that contain (one, the other, or both) blue notes will also be **Blues chords**, with [Blues] "chord scales" as optional improvisational scales.³

The Dorian color is also a typical "jazzy signature".

SERIES OF DIATONIC CHORDS IN DORIAN MINOR

Cm7	Dm7	E \flat ^A	F7	Gm7	Am7 \flat ⁵	B \flat ^A
Im7	IIm7	\flat IIImaj7	IV7	Vm7	VIIm7 \flat ⁵	\flat VIIImaj7
T	SD	T	SD	SD	(T)	SD
[Dor]	[Phr]	[Lyd]	[Mixo]	[Aeol]	[Locr]	[Ion]

We are already familiar with these chords and chord scales.

Since Dorian is relative to Ionian (major) and Aeolian (minor natural), we only need to change the order of the chords, starting with the [Dorian] chord.

Because of the lack of the leading tone 7, there are **NO dominant** chords!

The Dorian-Im7 Tonic

Im7 will more often be [Doric], with T13, than [Aeolian] (with Av \flat 13).

And, as in melodic, T13 is then emphasized by playing the chord as Im6.

Stronger! T13 is *definitely* an available tension, and *characteristic tone*, on Im7 [Dorian].⁴

This is **the Blues Tonic chord Im7** in minor Blues.⁵

¹ As is the Mixolydian mode, as we've already seen in passing, and as we'll learn in [A Modal Approach to the Blues](#).

² For comparison, Natural minor (Aeolian) contains $\flat 3$ and $\flat 7$, but also $\flat 6$.

Harmonic contains $\flat 3$ and $\flat 6$, but not $\flat 7$. Melodic contains only $\flat 3$. Mixolydian contains only $\flat 3$.

³ See [Improvising on Blues](#).

⁴ See [Characteristics of the Chord Scales](#).

⁵ See [minor Blues](#).

The Dorian-IIm7 Subdominant

As in melodic, this will be an optional *subdominant* chord when the restored 6th degree (A) is played in the melody.

This is the only non-specific Blues chord of the entire series (it contains no blue note).

The Dorian- \flat III $^\Delta$ Tonic

The Dorian- \flat III $^\Delta$ [Lyd], with T#11, is often preferred to the Natural- \flat III $^\Delta$ [Ion] (with Av11).

This is a **blues T(onic)** chord.

The Dorian-IV7 Subdominant

This [Mixolydian] chord is more common than IIIm7 [Phr] (above) as an optional *subdominant* when 6 (A) is in the melody, but less common than the Melodic-IV7 $^{\sharp 11}$ [Lydian $^{\flat 7}$] without avoids.

This is **the Blues Subdominant chord IV7** in major Blues.¹

The Dorian-Vm7 Subdominant

Vm7 [Aeol] is not used very often. Except as a relative-II in a secondary cadence to IV, or in [Modal Non-Functional Harmony](#).

This is a **blues SD(D)** chord.

The Dorian-VIm7 $^{\flat 5}$ (Tonic)

As a *tonic*, one will not use this chord because of its unstable diminished fifth.

One encounters it as relative-IIIm7 $^{\flat 5}$ in a secondary cadence to V with the [Locrian] chord scale, as expected according to [The established rule](#). The melodic equivalent VIm7 $^{\flat 5}$ [Locrian 9], with T9, is more interesting (=> no avoids).

This is a **blues T** chord.

The Dorian- \flat VII $^\Delta$ Subdominant

Optional *subdominant* when 6 (A) is in the melody (instead of the Natural- \flat VII7 with A \flat).

This is a **blues SD** chord.

¹ See [Blues Structure](#).

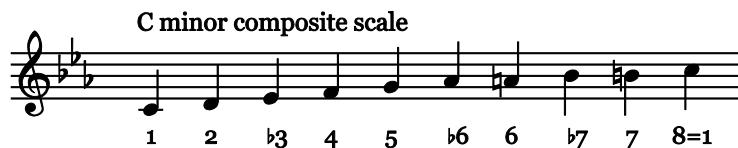
The minor Tonality as Multimodal System

I began this section by pointing out that minor harmony is much more complex than in major. While in major we have only seven chords¹, from only one parent scale, in minor there are twenty-eight chords², from four different parent scales (or modes).

The minor key is **multimodal**.³ It constantly shifts between the four modes:

Natural (for T and SD chords), **Harmonic** (for D chords), **Melodic** (for D and SD chords), and **Dorian** (for T and SD chords).

The minor key can be summarized in a single *composite scale* that contains all the degrees of the four modes:



The chart below shows all the possible chords:

	1	2	b3	4	5	6	7	
From Bright to Dark	Melodic	Im ^Δ [Mel] T	IIm7 [Dor ^{b9}] SD	bIII ^{Δ#5} [Lyd ^{#5}] T	IV7 [Lyd ^{b7}] SD	V7 [Mixo ^{b13}] D	VIm7 ^{b5} [Locr ⁹] T	VIIIm7 ^{b5} [S.Locr] D
	Harmonic	1 Im ^Δ [Harm] T	2 IIm7 ^{b5} [Locr ¹³] SD	b3 bIII ^{Δ#5} [Ion ^{#5}] T	4 IVm7 [Dor ^{#4}] SD	5 V7 [Sp.Phr] D	b6 bVI ^Δ [Lyd ^{#9}] T	7 VII [°] [U.Locr] D
	Dorian	1 Im7 [Dor] T	2 IIm7 [Phr] SD	b3 bIII ^Δ [Lyd] T	4 IV7 [Mixo] SD	5 Vm7 [Aeol] SD(D)	VIm7 ^{b5} [Locr] T	b7 bVII ^Δ [Ion] SD
	Natural (Aeolian)	1 Im7 [Aeol] T	2 IIm7 ^{b5} [Locr] SD	b3 bIII ^Δ [Ion] T	4 IVm7 [Dor] SD	5 Vm7 [Phr] SD(D)	b6 bVI ^Δ [Lyd] T	b7 bVII7 [Mixo] SD

Chords in gray are less common.

¹ Actually, only six if one leaves VIIIm7^{b5} out.

² Twenty-three if one leaves out the less common ones.

³ I prefer the all-Latin term *Multimodal* to the sometimes-used hybrid (Greek-Latin) term *Polymodal*.

Im tonic

On scores, one will often see the **Im** chord **without a seventh**.¹

This leaves the choice to the improviser between ...

- Im7 [Aeolian] or [Dorian]
- Im^A [Harmonic] or [Melodic]
- Im6 [Melodic] or [Dorian]

V7 dominant

For the **V7** chord, one can choose between the ...

- Harmonic-V7^{b9} [Spanish Phrygian] or Lydian variant [Altered]
- Melodic-V9 [Mixolydian^{b13}] or Lydian variant [Whole Tone]

LINE-CLICHÉS

A multimodal system offers the possibility of creating **Line-Clichés**. The consecutive semitones in the composite scale on the previous page (5, b6, 6, b7, 7, 1) can be melodically alternated within one chord. In this way one causes modal changes "without changing chords".²

The most common line-cliché is playing with changing "sevenths" on the Im chord.³

chord scales [multiple options]
parent scales C minor

[multiple options]
C minor

In the first four bars, the melodic line sits on top of the chords.

In the next four bars, the melodic line is used as a downward bass.

The analysis proposes **[multiple options]** for chord scales, because ...

- Im can be either [Aeolian], [Harmonic], [Melodic] or [Dorian]
- Im^A can be either [Harmonic] or [Melodic]
- Im7 can be either [Aeolian] or [Dorian]
- Im6 can be either [Melodic] or [Dorian]

For the parent scale line, the analysis suggests **C minor**, unspecified, because the mode can be either Natural, Harmonic, Melodic or Dorian minor.

¹ As we've seen in [Tonal Changes on Diatonic Chords](#).

² "Without changing chords", in quotes, because it's an illusion.

If the chord scale changes, then the chord changes too, because a chord scale = a chord.

³ A famous example is found in the 4 first bars of "My Funny Valentine" (Richard Rodgers).

© 1937 (renewed) by Chappell & Co.

Another famous example plays with changing "fifths" on the Im chord.¹:

The musical staff shows four chords in C minor:

- Bar 1: Cm
- Bar 2: A♭/C (labeled as Im^(b13))
- Bar 3: Cm⁶
- Bar 4: A♭/C (labeled as Im^(b13))

Below the staff, the text reads:

chord scales [multiple options]
parent scales C minor

For bar 2 and 4, instead of A♭/C, one also often sees Cm^{#5} or Cm+. That chord symbol is more consistent with the concept of line-cliché, but strictly speaking, this is A♭ (b6) and not G♯ (#5).

[Multiple options] for chord scales, because ...

- Im can be either [Aeolian], [Harmonic], [Melodic] or [Dorian]
- Im^(b13) can be either [Aeolian] or [Harmonic]
- Im⁶ can be either [Melodic] or [Dorian]

C minor, unspecified, because the *parent* scale can be either Natural, Harmonic, Melodic or Dorian minor.

Other line-clichés are possible, on other chords than Im.

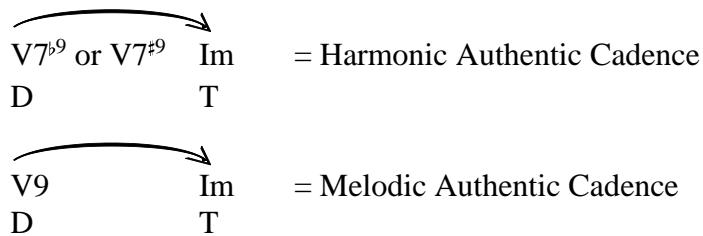
Further in this book, in the part on [Modal Changes](#), one will see that multimodality (and thus line-clichés) is (are) also possible in major.

¹ For example: ‘James Bond Theme’ (Monty Norman/John Barry)
© 1962 EMI United Partnership Limited.

COMMON MINOR CADENCES

In the multimodal minor system, there are many more cadences possible than in major. You can best remember them by comparing them to - and translating them from - the already known major cadences.¹

The authentic cadence



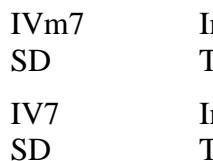
With substitution:
(or inversion of V7^{b9}) VII° Im = Harmonic “Authentic” Cadence
 D T

Im is written as a triad, because it could be Im7, Im^A or Im6 (see previous pages).

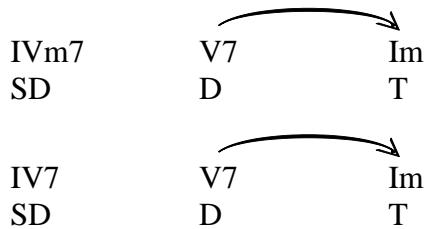
Vm7	Im	= Natural “Authentic” Cadence
SD(D)	T	

This last cadence is called a *modal* cadence in classical music theory. By this is meant "in *antique* Aeolian² church mode". Indeed, it is only used in [Modal Non-Functional Harmony](#) because it lacks a *true functional* dominant.³

The plagal cadence

IVm7	Im	= Natural (or Harmonic) Plagal Cadence
SD	T	
		
IV7	Im	= Melodic or Dorian Plagal Cadence
SD	T	

The complete IV-V cadence



V7 is written without T9, you can choose either V7^{b9}, V7^{#9} (Harmonic) or V9 (Melodic).

¹ See [Major Functional Cadences](#).

² In French and Dutch, the natural minor scale (Aeolian) is called the *antique* minor scale.

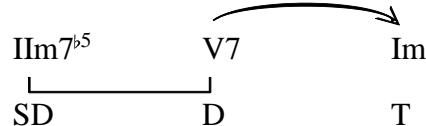
³ For example: 'Ain't No Sunshine' by Bill Withers (also with complete plagal cadence Vm7 - IVm7 - Im).
© 1971 Interior Music Incorporated, USA.

The complete plagal cadence

V7	IVm7	Im
D	SD	T

And its possible Melodic or Dorian variations with IV7.

The complete II-V cadence



And its possible Melodic or Dorian variations with IIIm7.

Rhythm Changes

"Rhythm Changes" 1

Im	VIm7 ^{b5}	IIIm7 ^{b5}	V7
T	(T)	SD	D
Im	♭VI ^Δ	IIIm7 ^{b5}	V7
T	T	SD	D

The first cadence uses the Melodic (or Dorian) VIm7^{b5} to go down the circle of *perfect* fifths (starting from A, or VI).

The second cadence, with the Natural (or Harmonic) ♭VI^Δ, is less common because it *doesn't* move in *perfect* fifths (A♭ to D = diminished fifth).

"Rhythm Changes" 2

For that same reason, one finds few minor translations of IIIIm7 – VIm7 – IIIm7 – V7. One must always interrupt the cycle of descending *perfect* fifths somewhere.

Natural or Dorian III

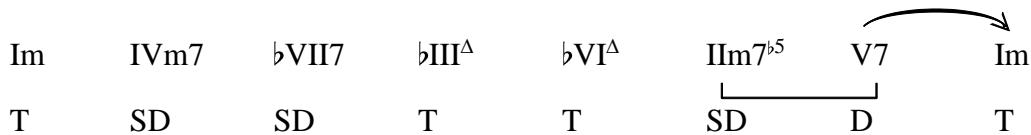
♭III ^Δ	♭VI ^Δ	IIIm7 ^{b5}	V7
T	T	SD	D
♭III ^Δ	VIm7 ^{b5}	IIIm7 ^{b5}	V7
T	(T)	SD	D

Melodic or Harmonic III

♭III ^{Δ#5}	♭VI ^Δ	IIIm7 ^{b5}	V7
(T)	T	SD	D
♭III ^{Δ#5}	VIm7 ^{b5}	IIIm7 ^{b5}	V7
(T)	(T)	SD	D

Mozart Changes

But minor translations of the “Mozart Changes” are very common.¹



A New Typical minor Cadence: The bVII – Im cadence

bVII7	Im	= Natural Cadence
SD	T	
bVII ^A	Im	= Dorian Cadence
SD	T	

“Backdoor” cadence	IVm7 bVII7	Im	= Natural Cadence
	SD SD	T	

The IVm7 – bVII7 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.

The fun nickname "backdoor" is explained like this:

When one goes to Im using the regular II-V ($Dm7^{b5}$ - G7), one uses the "front door".

If one goes to Im using the IV-bVII cadence ($Fm7$ - $Bb7$) one uses the "back door".

But this nickname is actually used mainly in *major*: $Fm7$ – $Bb7$ – C^A .²

“Eurosong” cadence	bVI ^A	bVII7	Im	= Natural Cadence
	T	SD	T	

The "Eurosong" nickname is not common at all. I use it because that cadence was so common as an ending cadence in Eurosong Festival songs in the '70s and '80s. (But, like the "backdoor" above, mostly in *major*, with I^A as final chord).

This last cadence is found *a lot* in (*minor*) Pop Music.³

In triads:	bVI	bVII	Im
Also descending:	Im	bVII	bVI

¹ First 8 bars of 'Fly Me to the Moon' (Bart Howard)
© 1954, 1962 & 1973 Almanac Music Incorporated, USA

There is also a beautiful classical example to be found in the first 8 bars of the minor section in the 'Impromptu opus 90 n°2' by Franz Schubert (public domain).

² See [minor Sub-Dominants \(SDm\)](#).

³ See [Modal Cadences, Aeolian mode](#).

ANALYSIS IN MINOR

Let's review the analysis of 'Autumn Leaves' (by Joseph Kosma)¹, this time in G minor. On the subsequent pages, there's a comparative analysis in the relative B♭ Major key.

Notes on the minor analysis

- Bar 2 (not counting the pick-up bar): F7, *secondary V7/bIII [Lyd^{b7}]*.
Lydian equivalent of [Mixo] (with multiple dominant chord scales options).
Or, the Natural-subdominant bVII7 [Mixo] (see brackets on score). Correct, but doesn't take into account the obvious fifth resolution (arrow) to B♭. (See also bar 10 and 22.)

- Bar 4: Eb^A, bVI^A [Lyd] **Tonic**. (See also bar 12, 24 and 29.)
- Bar 6: D7, **primary V7** [Mixo^{b13}].

The melody, with E natural, indeed suggests that this is the Melodic dominant. Its Lydian variant [Whole Tone] is an option too. When the melody is left out during the improvisation, the Harmonic [Sp.Phr] and its Lydian equivalent [Alt] are options too.

- Bar 7 and 8: Gm – (Gm^A – Gm7 – Gm6), **Tonic Im** – (Im^A – Im7 – Im6).
The line-cliché, in brackets, is added intentionally on the score to illustrate the [Multiple Options] on this chord. Hence also the unspecified G minor parent scale.² (See also bar 15-16, 19-20 and 31-32.)
- Bar 14: D7, **primary V7** [Mixo^{b13}] or [Sp.Phr].
Here, the melody doesn't offer a conclusive choice between melodic or harmonic dominant. Both are options, as are their Lydian equivalents [Wh.T] and [Alt]. (See also bar 18 and 30.)
- Bar 26: D7, **primary V7** [Sp.Phr].
The melody, with Eb, suggests the harmonic dominant, or its Lydian equivalent [Alt]. Without melody, the (melodic) [Mixo^{b13}] and [Wh.T] are also options.
- Bar 27: Gm, **tonic Im** [Dor] and also relative IIIm7/bVII [Dor] (see dotted hook).
[Dor] fits both the primary function (Im) and the secondary function (IIIm7/bVII). But the chord symbol, *without a seventh*, suggests [Multiple Options].
- Bar 28: Fm7, subdominant bVIIIm7* [Dor]³ and also IIIm7/bVI [Dor] (see dotted hook).
[Dor] fits both the primary function (*bVIIIm7 – a *modal interchange* chord we'll learn about very soon) and the secondary function (IIIm7/bVI).

¹ © 1947, 1950, 1987 Enoch Et Cie. (Renewed 1975, 1978)

² See [Line-Clichés](#).

³ * See the next part on [Modal Changes](#) – [Modal Interchange](#).

Autumn Leaves - Joseph Kosma (1905 - 1969) - Analysis in G minor

A

1 Cm⁷ F⁷ B^{bΔ} E^{bΔ}
 IVm⁷ [Dor] NPS V^{7/bIII} (bVII⁷) [Lyd^{b7}] [Ion] bIII^Δ bVI^Δ Gm Natural [Lyd]
 chord scales: parent scales:
 Gm Natural Gm Natural

5 Am^{7b5} D⁷ Gm (Gm^Δ Gm⁷ Gm⁶)
 IIIm^{7b5} [Locr] V⁷ [Mixo^{b13}] Gm Melodic Im (Im^Δ Im⁷ Im⁶) [multiple options] G minor
 [multiple options] G minor

9 Cm⁷ F⁷ B^{bΔ} E^{bΔ}
 IVm⁷ [Dor] NPS V^{7/bIII} (bVII⁷) [Lyd^{b7}] [Ion] bIII^Δ bVI^Δ Gm Natural [Lyd]
 Gm Natural

13 Am^{7b5} D⁷ Gm
 IIIm^{7b5} [Locr] V⁷ [Mixo^{b13}] or [Sp.Phr] Gm Melodic or Harmonic Im [multiple options] G minor
 [multiple options] G minor

B

17 Am^{7b5} D⁷ Gm
 IIIm^{7b5} [Locr] V⁷ [Mixo^{b13}] or [Sp.Phr] Gm Melodic or Harmonic Im [multiple options] G minor
 Gm Natural

21 Cm⁷ F⁷ B^{bΔ} E^{bΔ}
 IVm⁷ [Dor] NPS V^{7/bIII} (bVII⁷) [Lyd^{b7}] [Ion] bIII^Δ bVI^Δ Gm Natural [Lyd]
 Gm Natural

25 Am^{7b5} D⁷ Gm Gb⁷ Fm⁷ E⁷
 IIIm^{7b5} [Locr] V⁷ [Sp.Phr] Gm Harmonic Im [Dor] SubV^{7/bVII} [Lyd^{b7}] bVIIIm^{7*} [Dor] SubV^{7/bVI}
 F Major NPS E♭ Major NPS

29 E^{bΔ} Am^{7b5} D⁷ Gm
 bVI^Δ IIIm^{7b5} [Locr] V⁷ [Mixo^{b13}] 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 IIm⁷ [Dor] B♭ Major NPS

5 Am^{7bs} D⁷ Gm (Gm^A Gm⁷ Gm⁶)
VIIIm^{7bs} [Locr] V^{7/VI} [Mixo^{b13}] Gm Melodic
— VIm (VIm^A VIm⁷ VIm⁶) [multiple options]
G minor

9 Cm⁷ F⁷ B♭Δ E♭Δ
IIIm⁷ [Dor] B♭ Major V⁷ [Lyd^{b7}] NPS [Ion] B♭ Major IV^A [Lyd]

13 Am^{7bs} D⁷ Gm
VIIIm^{7bs} [Locr] V^{7/VI} [Mixo^{b13}] or [Sp.Phr] Gm Melodic or Harmonic
— VIm [multiple options]
G minor

17 Am^{7bs} D⁷ Gm
VIIIm^{7bs} [Locr] V^{7/VI} [Mixo^{b13}] or [Sp.Phr] Gm Melodic or Harmonic
B♭ Major VIm [multiple options]
G minor

21 Cm⁷ F⁷ B♭Δ E♭Δ
IIIm⁷ [Dor] B♭ Major V⁷ [Lyd^{b7}] NPS [Ion] B♭ Major IV^A [Lyd]

25 Am^{7bs} D⁷ Gm Gb⁷ Fm⁷ E⁷
VIIIm^{7bs} [Locr] V^{7/VI} [Sp.Phr] Gm Harmonic F Major SubV^{7/V} [Dor] NPS Vm^{7*} [Dor] E♭ Major SubV^{7/IV} [Lyd^{b7}] NPS

29 Eb^A Am^{7bs} D⁷ Gm
IV^A VIIIm^{7bs} [Locr] V⁷ [Mixo^{b13}] 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 chords (see *parent scale*), are now B♭ Major chords (see *parent scale*). Since both scales are relative scales, the tones you can play on these chords remain exactly the same.

- **Bar 2:** F7 [Lyd^{b7}] is now the **primary V7** (of **I, B♭**). (See also bar 10 and 22.)
Same chord scale choice as in previous analysis (with same multiple options).
- **Bar 4:** E♭^A, IV^A [Lyd] is a *Subdominant* chord in B♭ Major. (See also bar 12, 24 and 29.)
- **Bar 6:** D7, *secondary V7/VI* [Mixo^{b13}].
Same chord scale choice (for melodic reasons).
- **Bar 7 and 8:** Gm – (Gm^A – Gm7 – Gm6), *tonic VI^m* – (VI^{mA} – VI^{m7} – VI^{m6}).
The line-cliché, with [Multiple Options] remains possible (see [Tonal Change on VI^m](#)).
- **Bar 18:** D7, *secondary V7/VI* [Mixo^{b13}] or [Sp.Phr].
Same chord scale choice.
- **Bar 26:** D7, *secondary V7/VI* [Sp.Phr].
Same chord scale choice (for melodic reasons).
- **Bar 27:** Gm, Tonic **VI^m** [Dor] and also relative II^{m7/V} [Dor].
Same chord scale choice.
- **Bar 28:** Fm7, subdominant Vm7* [Dor]¹ and also II^{m7/IV} [Dor].
Same chord scale choice.

Conclusion

The analysis tools, learned in major harmony (with the knowledge of [Tonal Changes](#) and [Dominant Chord Scales](#)), turn out to be sufficient to analyze songs written in minor.

Both (minor and relative major) analyses actually come down to the same in terms of chord scales options. So why bother to study the much more complex minor harmony?

Because there are also songs written in *both major and minor, as well as in other modes*, songs with [Modal Changes](#).

¹ * See the next part on [Modal Changes – Modal Interchange](#).

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 \(Chord Scales\)](#), 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 (*brighten* or *darken*) the *color* of the original key (or mode) of the song, by altering some (mostly *modal*) scale degrees of the *parent scale*. Consequently, chords (and chord scales) change at the same time.

The reason for brightening or darkening is not *functional* (it's not about the functions of the chords), but *modal* (it's about their color).

Important note

Some chords (and chord scales) that we are going to learn are clearly used more often than others. However, it becomes more difficult to start distinguishing between "commonly used", "sporadically used", "rarely used" and "never used". All the more so that this is a matter of personal taste. Up to you to try things out and make choices.

The Major^{b6} Parent Scale

We learned about this scale casually as a parent scale of the [Mixo^{b9}] dominant.¹ In order to understand the following chapters, a complete overview of this mode is now required.

ORIGINS OF THE MAJOR^{b6} MODE

We just learned about the four minor modes (parent scales), Natural, Harmonic, Melodic and Doric, which together form the *minor multimodal system*. A similar, *multimodal*, system is also possible in major.

The major^{b6} mode is one of the modes of that system. The comparison between the two systems helps to better understand the origin of that mode.

Minor

The minor system became multimodal (mainly) for *functional* reasons.

- The **Natural** mode is not fit to generate a dominant chord. Therefore, the **Harmonic** mode was invented, to meet the *harmonic (functional)* need for a dominant.
- Because of the harmonic gap (between b6 and 7) in the Harmonic mode, the melody sounds strange and difficult to sing. So, one invented the **Melodic** mode, for *melodic* reasons.

¹ See [Introducing the Majorb6 Parent Scale](#) and [Majorb6-V7 \[Mixolydianb9\]](#).

But, and *here's the clue*, the Melodic scale also provided the minor system with a *major subdominant*: IV instead of IVm. The German classical schools called this mode the **Dür-Moll**: "The scale that provides a major (*dür*) subdominant to the minor (*moll*) key".¹

The use of a *major* subdominant in minor does not stem from *functional* need, but is purely *modal*.

The **Dorian** scale, another important minor mode (used in folk music and in Blues) completes the system as fourth parent scale. Purely for *modal* reasons.

Major

The major system became multimodal for *modal* reasons only.

- The Major mode is perfectly suited to generate a dominant.
There is no *functional* reason to invent a new ("harmonic") mode.
- There is no gap anywhere in the Major mode.
There is no (melodic) reason to invent a new mode.

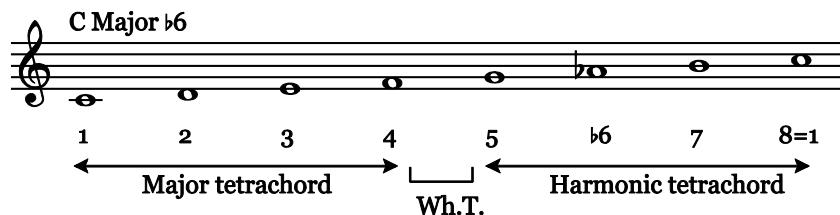
But, one can provide the major system with a *minor subdominant*: IVm instead of IV.

That's how the **Moll-Dür** (Major^{b6}) mode, the opposite of the Melodic mode, originates: "The scale that provides a minor (*moll*) subdominant to the major (*dür*) key".²

That idea is at the origin of the concept of minor Sub-Dominants (SDm) and is purely *modal*.

The **Lydian** and **Mixolydian** modes, also important modes in major (used in folk music and in Blues) complete the system. Purely for *modal* reasons.

MAIN MAJOR^{b6} CHORDS



There are many names for this scale: *Moll-Dür* (reverse order than the *major/harmonic* tetrachords), *Hybrid Major*, *Harmonic Major* (harmonic scale with major third). All names based on the concept *mixed*.³

But, the Melodic scale (Dür-Moll, Hybrid Minor), with consecutive minor/major tetrachords, is also *mixed*. This creates too much confusion.

The name **Major^{b6}** used in this book has the great advantage of being unambiguous about the construction of the scale: a major scale with lowered 6th degree.

¹ The (classical) complete Melodic cadence: Im – **IV** – V7 – Im

² The (classical) complete Major^{b6} cadence: I – **IVm** – V7 – I

³ In French: *mixte-Majeure*. In Dutch: *Gemengd* (= mixed).

The series of diatonic chords

C^Δ Dm^{7b5} Em⁷ Fm^Δ G^{7b9} A^{♭Δ♯5} B[°]
 I^Δ IIIm^{7b5} IIIm⁷ IVm^Δ V7^{b9} bVI^{Δ#5} VII
 T SDm T SDm D T D
 [Majb6] [Dorb5] [Phrb4] [Lydb3] [Mixob9] [Lyd#2/#5] [Locrb7]

minor Sub-Dominant chords (SDm chords)

Major^{b6}-IVm^Δ [Lydian^{b3}] SDm

Fm^Δ [Lydian b3]

1 T9 b3 T#11 5 T13 7

This chord is **the minor subdominant** that gives its *minor* name to the concept of *Minor Subdominant chords (SDm)*.

Note! Other SDm chords, which we'll be learning, are not all minor. Nor are they generated by a minor parent scale (but sometimes they are). SDm chords are generated, as is the case here, *by lowering the 6th degree of the parent scale.*¹

Major^{b6}-IIIm^{7b5} [Dorian^{b5}] SDm

Dm^{7b5} [Dorian b5]

1 T9 b3 T11 b5 T13 b7

This chord can be used in a IIIm^{7b5}-V7 major cadence (that *looks like* a minor cadence) to use the same Major^{b6} parent scale throughout the cadence.²

Dominant Chords

Major^{b6}-V7^{b9} [Mixolydian^{b9}]

G^{7b9} [Mixolydian b9]

1 Tb9 T#9 3 Av11 5 T13 b7

We've seen this chord as one of [The Four “Basic” Dominants](#).

¹ And/or by lowering the 2nd degree. See [minor Sub-Dominants \(SDm\)](#).

² See [Introducing the Majorb6 Parent Scale](#).

Major^{b6}-VII° [Locrian^{b7}]

B° [Locrian $\flat\flat 7$]

1 Av \flat 9 b3 T11 b5 Tb13 bb7 7

We've seen this as one of the [Secondary VII° Dominant Chords](#).

Example of a minor Subdominant (SDm)**'All Of Me' (Simons & Marks)¹**

In the last 8 bars of this song, we were left with a question mark for the **Fm** chord.

- Bar 2 above (bar 26 of the song):**

Fm, *without a seventh*, can be analyzed as **IVm Δ** .

The *minor subdominant (SDm)* Major^{b6}-IVm Δ [Lyd^{b3}].

We will see in a moment that it could also be analyzed as **IVm7**.

The *modal interchange chord Aeolian-IVm7* [Dor].

¹ See [Analysis with Secondary Dominants](#).

MAJOR MULTIMODAL SYSTEM

		1	2	3	#4	5	6	7
From Bright to → Dark	Lydian	I ^Δ [Lyd] T	II7 [Mixo] SD	III ^m 7 [Aeol] T	#IV ^m 7 ^{b5} [Locr] SD	V ^Δ [Ion] SD(D)	VI ^m 7 [Dor] T	VII ^m 7 [Phr] SD
	Major (Ionian)	1	2	3	4	5	6	7
	Major ^{b6}	I ^Δ [Ion] T	II ^m 7 [Dor] SD	III ^m 7 [Phr] T	IV ^Δ [Lyd] SD	V7 [Mixo] D	VI ^m 7 [Aeol] T	VII ^m 7 ^{b5} [Locr] D
	Major ^{b6}	1	2	3	4	5	6	7
	Mixolydian	I ^Δ [Maj ^{b6}] T	II ^m 7 ^{b5} [Dor ^{b5}] SDm	III ^m 7 [Phr ^{b4}] T	IV ^m ^Δ [Lyd ^{b3}] SDm	V7 ^{b9} [Mixo ^{b9}] D	VI ^b ^Δ ^{b5} [Lyd ^{#2-#5}] T	VII [°] [Locr ^{b7}] D
	Mixolydian	I7 [Mixo] T	II ^m 7 [Aeol] SD	III ^m 7 ^{b5} [Locr] (T)	IV ^Δ [Ion] SD	V ^m 7 [Dor] SD(D)	VI ^m 7 [Phr] T	VI ^b ^Δ [Lyd] SD

Modal Interchange

The **Modal Interchange** consists in swapping chords between modes of a multimodal system.

- When you use, in the major multimodal system, the Major^{b6}-IV^m^Δ [Lyd^{b3}] instead of the Major-IV^Δ [Lyd] (see table above), you do a *modal interchange* (and the color gets darker).
- When you use, in minor, the Harmonic-V7 [Sp.Ph] instead of the Natural-V^m7 [Phr] – regardless of whether you do it out of *functional* necessity (for a dominant) – you do a *modal interchange* (and the color gets brighter).¹

You can also swap chords between major (bright) and minor (dark), as we already saw with [Modal Changes on Dominant Chords](#) and [The minor II^m7^{b5}-V7 Cadence](#).

When we merge both major and minor systems, the possible modal interchanges are greatly expanded.² And to be complete, we also add the Phrygian and Locrian modes, as potential (minor) parent scales.

See chart on next page. The modes with a functional dominant (**on pink background**) are all – except the Major (Ionian) mode – *synthetic* scales. The Major mode, and all other modes (without a dominant) are *natural* scales (the old church modes).

¹ See [The minor Tonality as Multimodal System](#).

² Lots of theory books use the term *ex-change* instead of *inter-change*, and that's OK. I prefer *inter-change* though, because it means swapping chords *within the same tonality*. The term *ex-change* is a more classical (or older) thought: exchanging chords *outside* the key, major not being the same key as minor.

MAJOR/MINOR MULTIMODAL SYSTEM

	Lydian	1	2	3	#4	5	6	7
From Bright to → Dark	I ^Δ [Lyd] T	II7 [Mixo] SD	III ^m 7 [Aeol] T	#IV ^m 7 ^{b5} [Locr] SD	V ^Δ [Ion] SD(D)	VIm7 [Dor] T	VII ^m 7 [Phr] SD	
	Major (Ionian)	1	2	3	4	5	6	7
	I ^Δ [Ion] T	II ^m 7 [Dor] SD	III ^m 7 [Phr] T	IV ^Δ [Lyd] SD	V7 [Mixo] D	VIm7 [Aeol] T	VII ^m 7 ^{b5} [Locr] D	
	Major ^{b6}	1	2	3	4	5	♭6	7
	I ^Δ [Maj ^{b6}] T	II ^m 7 ^{b5} [Dor ^{b5}] SDm	III ^m 7 [Phr ^{b4}] T	IV ^m ^Δ [Lyd ^{b3}] SDm	V7 ^{b9} [Mixo ^{b9}] D	♭VI ^Δ ^{b5} [Lyd ^{#2-#5}] T	VII [○] [Locr ^{b7}] D	
	Mixolydian	1	2	3	4	5	6	♭7
	I7 [Mixo] T	II ^m 7 [Aeol] SD	III ^m 7 ^{b5} [Locr] (T)	IV ^Δ [Ion] SD	V ^m 7 [Dor] SD(D)	VIm7 [Phr] T	♭VII ^Δ [Lyd] SD	
	Melodic	1	2	♭3	4	5	6	7
	Im ^Δ [Mel] T	II ^m 7 [Dor ^{b9}] SD	♭III ^Δ ^{b5} [Lyd ^{#5}] T	IV7 [Lyd ^{b7}] SD	V7 [Mixo ^{b13}] D	VIm7 ^{b5} [Locr ⁹] T	VII ^m 7 ^{b5} [S.Locr] D	
	Harmonic	1	2	♭3	4	5	♭6	7
	Im ^Δ [Harm] T	II ^m 7 ^{b5} [Locr ¹³] SD	♭III ^Δ ^{b5} [Ion ^{#5}] T	IV ^m 7 [Dor ^{#4}] SD	V7 [Sp.Ph] D	♭VI ^Δ [Lyd ^{#9}] T	VII [○] [U.Locr] D	
	Dorian	1	2	♭3	4	5	6	♭7
	Im7 [Dor] T	II ^m 7 [Phr] SD	♭III ^Δ [Lyd] T	IV7 [Mixo] SD	V ^m 7 [Aeol] SD(D)	VIm7 ^{b5} [Locr] T	♭VII ^Δ [Ion] SD	
	Minor Natural (Aeolian)	1	2	♭3	4	5	♭6	♭7
	Im7 [Aeol] T	II ^m 7 ^{b5} [Locr] SD	♭III ^Δ [Ion] T	IV ^m 7 [Dor] SD	V ^m 7 [Phr] SD(D)	♭VI ^Δ [Lyd] T	♭VII7 [Mixo] SD	
	Phrygian	1	♭2	♭3	4	5	♭6	♭7
	Im7 [Phr] T	♭II ^Δ [Lyd] SD	♭III7 [Mixo] T	IV ^m 7 [Aeol] SD	V ^m 7 ^{b5} [Locr] SD(D)	♭VI ^Δ [Ion] T	♭VII ^m 7 [Dor] SD	
	Locrian	1	♭2	♭3	4	♭5	♭6	♭7
	Im7 ^{b5} [Locr] (T)	♭II ^Δ [Ion] SD	♭III ^m 7 [Dor] T	IV ^m 7 [Phr] SD	♭V ^Δ [Lyd] SD(D)	♭VI7 [Mixo] T	♭VII ^m 7 [Aeol] SD	

DETERMINING THE PARENT SCALE FOR MODAL INTERCHANGES

Determining the 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]

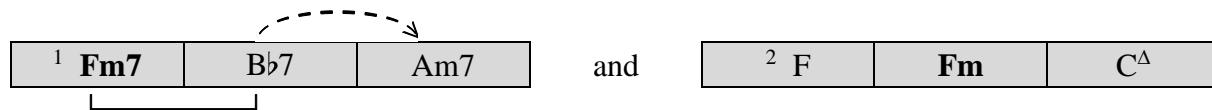
And, less common, though theoretically possible

- The Harmonic-IVm7 [Dor^{#4}]

And, if one also considers the *triad* IVm (without a seventh), it can be

- The Major^{b6}-IVm^(Δ) [Lyd^{b3}]

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 analyses in the next section):



In the 1st example, Fm7 is relative-II in a II-V cadence.

In the 2nd example, Fm (triad) is an isolated chord.

We have three methods at our disposal to determine the parent scale(s).

The established rule

This is by far the easiest method, but also without surprises.

And it only works with relative-II chords (example 1).

1. [The established rule](#) = [**Dorian**] chord scale for each relative-II^{m7}.
2. Then **Aeolian** (minor antique) is the parent scale for this chord.
(See chart on previous page).

Calculating the Key Signature

A more correct method, which also works for isolated chords, is to see which altered tones are needed for the chord, and to find the key signature that contains those tones.

1. Fm7 contains **A♭** and **E♭** – Fm contains only **A♭**.
2. The key signature must contain, regardless, all the way to **A♭**: **B♭** – **E♭** – **A♭**.
3. Parent scale = C minor (antique) or **Aeolian**.
4. Chord scale = [**Dorian**].

The result is the same as above.

Here we have not taken into account the relative-II (*secondary*) function of Fm7 from Example 1. But the *primary* function, the *modal interchange chord Aeolian-IVm7 [Dor]*, confirms the secondary function of the relative-II anyway. This will very often be the case, but not always!

¹ Bar 8 and 9 of ‘I Should Care’ (see [Analysis with Secondary II-V Cadences](#)).

² Bar 25, 26 and 27 of ‘All of Me’ (see [Analysis with Secondary Dominants](#) and also [Example of a minor Subdominant \(SDm\)](#)).

The Residual Tones

This is the only method that can help detect minor subdominants (SDm).

One changes *only those notes required by the chord.*
All other notes of the scale are kept as [Residual Tones](#).

Fm7	Chord Scale	1 2 b3 #4 5 6 b7	= [Dor ^{#4}]
	Parent Scale	C D Eb F G Ab B 1 2 b3 4 5 b6 7	= C Harmonic

The result is now surprisingly different.

The primary function [Dor^{#4}] *does not* confirm the secondary function [Dor] of Fm7.
But this new option is quite unusual, although theoretically possible.¹

Fm	Chord Scale	1 2 b3 #4 5 6 7	= [Lyd ^{b3}]
	Parent Scale	C D E F G Ab B 1 2 3 4 5 b6 7	= C Major ^{b6}

Using this we have found **the minor subdominant IVm^A** from the **C Major^{b6}** parent scale.

Primary Functions of Relative-II Chords

Let's take a moment to return to [Relative-II Chords and Secondary II-V Cadences](#).

Because relative-II chords (usually) have a double function, and because *the primary function* (usually) *prevails*, I suggested as a method of analysis to ...

- Mark its secondary function using the hook (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).

And at the bottom of the [List of Secondary II-V Cadences](#), I made the promise:

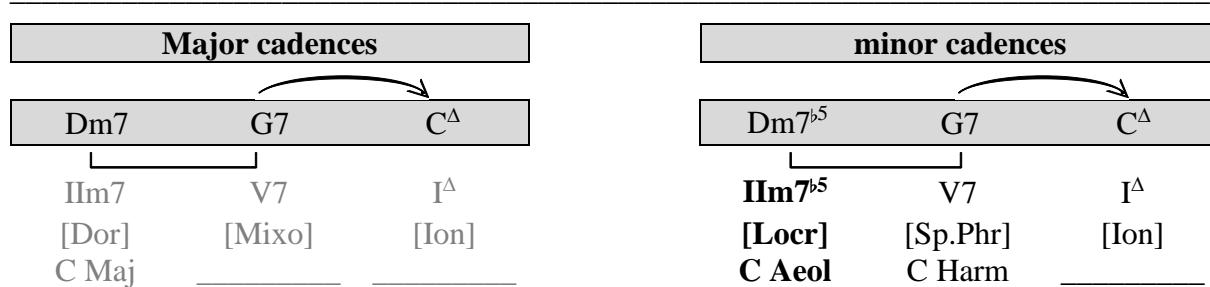
"Most question marks in the analysis will be replaced later by modal interchange chords, though these will mostly confirm the chord scale options proposed below."

Time to fill in that promise.

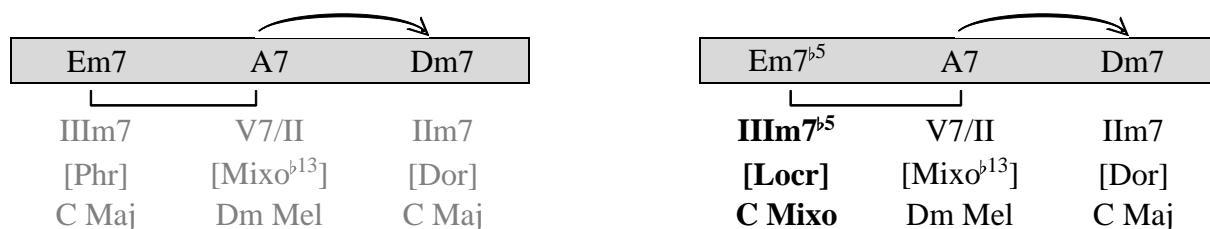
On the next pages, the list is further completed where necessary.

- Question marks are now analyzed with modal interchanges **in bold**.
- Analyses in gray contain no modal interchanges.

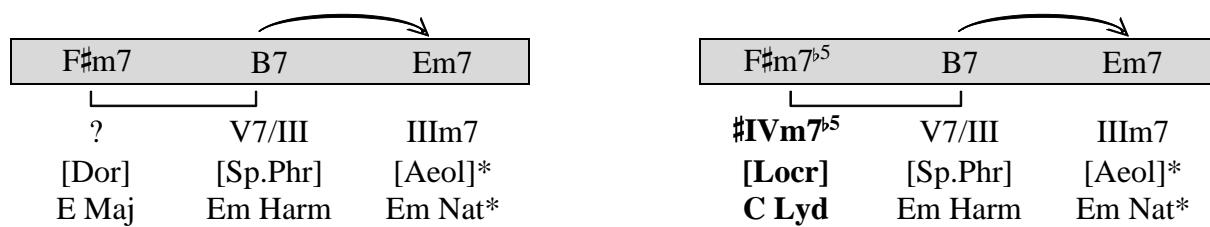
¹ The broader context – followed by Bb7 (**SDm**, or **SubV7**) to Am7 – will help to conclude that Fm7 is [Dorian] after all, and that the established rule in this case is true. But that's for later.



This is the *primary minor cadence*, with the Aeolian-IIIm7 \flat^5 [Locr].
Or, the SDm Major \flat^6 -IIIm7 \flat^5 [Dor \flat^5] (followed by Major \flat^6 -V7 [Mixo \flat^9]).



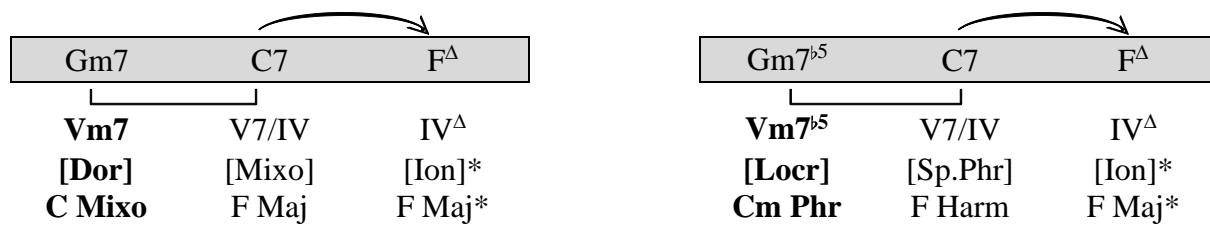
The *primary Mixolydian-IIIm7 \flat^5* [Locr] confirms the secondary function.



F#m7 (with C#) has no primary function. The question mark remains.

The *primary Lydian-#IVm7 \flat^5* [Locr] confirms the secondary function.

* Because IIIm7 is introduced by its dominant, it becomes [Aeolian].¹



The *primary Mixolydian-Vm7* [Dor] confirms the secondary function.

The *primary Phrygian-Vm7 \flat^5* [Locr] confirms the secondary function.

We'll see later that there are yet *brighter* SDm options for this chord.

* Because IV Δ is introduced by its dominant it becomes [Ionian].²

¹ See [Tonal Change on IIIm](#).

² See [Tonal Change on IV \$\Delta\$](#) .

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px;">Am7</td><td style="padding: 2px;">D7</td><td style="padding: 2px;">G7</td></tr> <tr><td colspan="2" style="text-align: center; padding-top: 10px;"></td><td></td></tr> <tr><td style="padding: 2px;">VIm7</td><td style="padding: 2px;">V7/V</td><td style="padding: 2px;">V7</td></tr> <tr><td style="padding: 2px;">[Aeol]</td><td style="padding: 2px;">[Mixo]</td><td style="padding: 2px;">[Mixo]</td></tr> <tr><td style="padding: 2px;">C Maj</td><td style="padding: 2px;">G Maj</td><td style="padding: 2px;">C Maj</td></tr> </table>	Am7	D7	G7				VIm7	V7/V	V7	[Aeol]	[Mixo]	[Mixo]	C Maj	G Maj	C Maj	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px;">Am7^{b5}</td><td style="padding: 2px;">D7</td><td style="padding: 2px;">G7</td></tr> <tr><td colspan="2" style="text-align: center; padding-top: 10px;"></td><td></td></tr> <tr><td style="padding: 2px;">VIm7^{b5}</td><td style="padding: 2px;">V7/V</td><td style="padding: 2px;">V7</td></tr> <tr><td style="padding: 2px;">[Locr]</td><td style="padding: 2px;">[Sp.Phr]</td><td style="padding: 2px;">[Mixo]</td></tr> <tr><td style="padding: 2px;">Cm Dor</td><td style="padding: 2px;">G Harm</td><td style="padding: 2px;">C Maj</td></tr> </table>	Am7 ^{b5}	D7	G7				VIm7 ^{b5}	V7/V	V7	[Locr]	[Sp.Phr]	[Mixo]	Cm Dor	G Harm	C Maj
Am7	D7	G7																													
																															
VIm7	V7/V	V7																													
[Aeol]	[Mixo]	[Mixo]																													
C Maj	G Maj	C Maj																													
Am7 ^{b5}	D7	G7																													
																															
VIm7 ^{b5}	V7/V	V7																													
[Locr]	[Sp.Phr]	[Mixo]																													
Cm Dor	G Harm	C Maj																													

The *primary* Dorian-VIm7^{b5} [Locr] confirms the secondary function.
We'll see later that there are yet *brighter* SDm options for this chord.

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px;">Bm7</td><td style="padding: 2px;">E7</td><td style="padding: 2px;">Am7</td></tr> <tr><td colspan="2" style="text-align: center; padding-top: 10px;"></td><td></td></tr> <tr><td style="padding: 2px;">VIIIm7</td><td style="padding: 2px;">V7/VI</td><td style="padding: 2px;">VIm7</td></tr> <tr><td style="padding: 2px;">[Phr]</td><td style="padding: 2px;">[Sp.Phr]</td><td style="padding: 2px;">[Aeol]</td></tr> <tr><td style="padding: 2px;">C Lyd</td><td style="padding: 2px;">Am Harm</td><td style="padding: 2px;">C Maj</td></tr> </table>	Bm7	E7	Am7				VIIIm7	V7/VI	VIm7	[Phr]	[Sp.Phr]	[Aeol]	C Lyd	Am Harm	C Maj	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px;">Bm7^{b5}</td><td style="padding: 2px;">E7</td><td style="padding: 2px;">Am7</td></tr> <tr><td colspan="2" style="text-align: center; padding-top: 10px;"></td><td></td></tr> <tr><td style="padding: 2px;">VIIIm7^{b5}</td><td style="padding: 2px;">V7/VI</td><td style="padding: 2px;">VIm7</td></tr> <tr><td style="padding: 2px;">[Locr]</td><td style="padding: 2px;">[Sp.Phr]</td><td style="padding: 2px;">[Aeol]</td></tr> <tr><td style="padding: 2px;">C Maj</td><td style="padding: 2px;">Am Harm</td><td style="padding: 2px;">C Maj</td></tr> </table>	Bm7 ^{b5}	E7	Am7				VIIIm7 ^{b5}	V7/VI	VIm7	[Locr]	[Sp.Phr]	[Aeol]	C Maj	Am Harm	C Maj
Bm7	E7	Am7																													
																															
VIIIm7	V7/VI	VIm7																													
[Phr]	[Sp.Phr]	[Aeol]																													
C Lyd	Am Harm	C Maj																													
Bm7 ^{b5}	E7	Am7																													
																															
VIIIm7 ^{b5}	V7/VI	VIm7																													
[Locr]	[Sp.Phr]	[Aeol]																													
C Maj	Am Harm	C Maj																													

The **primary** Lydian-VIIIm7 [Phr] prevails.

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px;">C#m7</td><td style="padding: 2px;">F#7</td><td style="padding: 2px;">Bm7^{b5}</td></tr> <tr><td colspan="2" style="text-align: center; padding-top: 10px;"></td><td></td></tr> <tr><td style="padding: 2px;">?</td><td style="padding: 2px;">V7/VII</td><td style="padding: 2px;">VIIIm7^{b5}</td></tr> <tr><td style="padding: 2px;">[Dor]</td><td style="padding: 2px;">[Sp.Phr]</td><td style="padding: 2px;">[Aeol]</td></tr> <tr><td style="padding: 2px;">B Maj</td><td style="padding: 2px;">Bm Harm</td><td style="padding: 2px;">C Maj</td></tr> </table>	C#m7	F#7	Bm7 ^{b5}				?	V7/VII	VIIIm7 ^{b5}	[Dor]	[Sp.Phr]	[Aeol]	B Maj	Bm Harm	C Maj	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px;">C#m7^{b5}</td><td style="padding: 2px;">F#7</td><td style="padding: 2px;">Bm7^{b5}</td></tr> <tr><td colspan="2" style="text-align: center; padding-top: 10px;"></td><td></td></tr> <tr><td style="padding: 2px;">?</td><td style="padding: 2px;">V7/VII</td><td style="padding: 2px;">VIIIm7^{b5}</td></tr> <tr><td style="padding: 2px;">[Locr]</td><td style="padding: 2px;">[Sp.Phr]</td><td style="padding: 2px;">[Aeol]</td></tr> <tr><td style="padding: 2px;">Bm Nat</td><td style="padding: 2px;">Bm Harm</td><td style="padding: 2px;">C Maj</td></tr> </table>	C#m7 ^{b5}	F#7	Bm7 ^{b5}				?	V7/VII	VIIIm7 ^{b5}	[Locr]	[Sp.Phr]	[Aeol]	Bm Nat	Bm Harm	C Maj
C#m7	F#7	Bm7 ^{b5}																													
																															
?	V7/VII	VIIIm7 ^{b5}																													
[Dor]	[Sp.Phr]	[Aeol]																													
B Maj	Bm Harm	C Maj																													
C#m7 ^{b5}	F#7	Bm7 ^{b5}																													
																															
?	V7/VII	VIIIm7 ^{b5}																													
[Locr]	[Sp.Phr]	[Aeol]																													
Bm Nat	Bm Harm	C Maj																													

C#m7 (with C#) has no primary function. The question mark remains.

C#m7^{b5} (with C#) has no primary function. The question mark remains.

List of Sub-Cadences (without minor cadences)

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px;">Abm7</td><td style="padding: 2px;">D^b7</td><td style="padding: 2px;">C^Δ</td></tr> <tr><td colspan="2" style="text-align: center; padding-top: 10px;"></td><td></td></tr> <tr><td style="padding: 2px;">?</td><td style="padding: 2px;">SubV7/I</td><td style="padding: 2px;">I^Δ</td></tr> <tr><td style="padding: 2px;">[Dor]</td><td style="padding: 2px;">[Lyd^{b7}]</td><td style="padding: 2px;">[Ion]</td></tr> <tr><td style="padding: 2px;">(Gb Maj)</td><td style="padding: 2px;">NPS</td><td style="padding: 2px;">C Maj</td></tr> </table>	Abm7	D ^b 7	C ^Δ				?	SubV7/I	I ^Δ	[Dor]	[Lyd ^{b7}]	[Ion]	(Gb Maj)	NPS	C Maj	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px;">Bbm7</td><td style="padding: 2px;">E^b7</td><td style="padding: 2px;">Dm7</td></tr> <tr><td colspan="2" style="text-align: center; padding-top: 10px;"></td><td></td></tr> <tr><td style="padding: 2px;">bVIIIm7</td><td style="padding: 2px;">SubV7/II</td><td style="padding: 2px;">II^Δm7</td></tr> <tr><td style="padding: 2px;">[Dor]</td><td style="padding: 2px;">[Lyd^{b7}]</td><td style="padding: 2px;">[Dor]</td></tr> <tr><td style="padding: 2px;">Cm Phr</td><td style="padding: 2px;">NPS</td><td style="padding: 2px;">C Maj</td></tr> </table>	Bbm7	E ^b 7	Dm7				bVIIIm7	SubV7/II	II ^Δ m7	[Dor]	[Lyd ^{b7}]	[Dor]	Cm Phr	NPS	C Maj
Abm7	D ^b 7	C ^Δ																													
																															
?	SubV7/I	I ^Δ																													
[Dor]	[Lyd ^{b7}]	[Ion]																													
(Gb Maj)	NPS	C Maj																													
Bbm7	E ^b 7	Dm7																													
																															
bVIIIm7	SubV7/II	II ^Δ m7																													
[Dor]	[Lyd ^{b7}]	[Dor]																													
Cm Phr	NPS	C Maj																													

Abm7 (with Cb) has no primary function. The question mark remains.

The *primary* Phrygian- \rightarrow VIIIm7 [Dor] confirms the secondary function.

Cm7	F7	Em7	D♭m7	G♭7	F ^Δ
Im7	SubV7/III	IIIIm7	?	SubV7/IV	IV ^Δ
[Dor]	[Lyd ^{b7}]	[Phr]*	[Dor]	[Lyd ^{b7}]	[Ion]**
Cm Dor	NPS	C Maj	(C♭ Maj)	NPS	F Maj

The *primary* Dorian-Im7 [Dor] confirms the secondary function.

D♭m7 (with C♭) has no primary function. The question mark remains.

* Because SubV7/III doesn't include F♯, there's *no tonal change* on IIIIm7. IIIIm7 stays [Phr].

** Because IV^Δ is introduced by its dominant it becomes [Ionian]. ¹

E♭m7	A♭7	G7	Fm7	B♭7	Am7
♭IIIIm7	SubV7/V	V7	IVm7	SubV7/VI	VIm7
[Dor]	[Lyd ^{b7}]	[Mixo]	[Dor]	[Lyd ^{b7}]	[Aeol]
Cm Locr	NPS	C Maj	Cm Aeol	NPS	C Maj

The *primary* Locrian-♭IIIIm7 [Dor] confirms the secondary function.

The *primary* Aeolian-IVm7 [Dor] confirms the secondary function.

Gm7	C7	Bm7 ^{b5}
Vm7	SubV7/V	VIIIm7 ^{b5}
[Dor]	[Lyd ^{b7}]	[Locr]
C Mixo	NPS	C Maj

The *primary* Mixolydian-Vm7 [Dor] confirms the secondary function.

Conclusion

The established rule, [Dor]-[Mixo] in major, [Locr]-[Sp.Ph] in minor and [Dor]-[Lyd^{b7}] for sub-cadences, applies in most cases.

But beware of the *prevailing primary functions* of ...

- IIIIm7 [Phr] (instead of IIIm7/II [Dor])
- VIm7 [Aeol] (instead of IIIm7/V [Dor])
- VIIIm7 [Phr] (instead of IIIm7/VI [Dor])

And, we're about to learn about new [minor Sub-Dominants \(SDm\)](#) options for some of these relative-II chords.

¹ See [Tonal Change on IV^Δ](#).

Modal Interchange in Parallel Harmony

Some approach chords in [Parallel Harmony](#) were also left with question marks.

m7 to m7

Coming from IIIm7:

C ^Δ	Em7	E♭m7	Dm7	G7
I ^Δ [Ion] CMaj	IIIm7 [Phr]	♭III ^{m7} [Dor] Cm Locr	IIIm7 [Dor] CMaj	V7 [Mixo]

E♭m7 is the Locrian-♭IIIm7 [Dor].

Coming from VIIm7:

C ^Δ	Am7	A♭m7	Gm7	C7
I ^Δ [Ion] CMaj	VIIm7 [Aeol]	?	Vm7 [Dor] C Mixo	V7/VI [Mixo] F Maj
		NPS		

A♭m7, with C♭, cannot be a modal interchange. The question mark remains.

This is *pure* parallel harmony.

Coming from IIIm7:

... Em7	Dm7	D♭m7	Cm7	F7
... IIIm7 ... [Phr] ... CMaj	IIIm7 [Dor]	?	Im7 [Dor] Cm Dor	SubV7/III [Lyd ^{b7}] NPS
		NPS		

D♭m7, with C♭, cannot be a modal interchange. The question mark remains.

This is *pure* parallel harmony.

Δ to Δ

Dm7	D♭ ^Δ	C ^Δ
IIIm7 [Dor] CMaj	♭II ^Δ [Lyd] Cm Phr	I ^Δ [Ion] CMaj

D♭^Δ is the Phrygian-♭II^Δ [Lyd].

ANALYSIS WITH MODAL INTERCHANGES

‘I Should Care’ (Cahn/Stordahl/Weston)¹ (B-part only)

Chord Progressions:

- Bar 1:** F#m7^{b5} → B7^{b9} → Em7 → A7 → Dm7 → G7 → C^Δ
- Bar 5:** Em7^{b5} → A7sus4 → A7 → Dm7 → Fm7 → Bb7
- Bar 8:** Am7 → Bm7^{b5} → E7^{b9} → Am → Am/G → D7/F# → Fm6
- Bar 12:** C/E → Eb° → Dm7 → G7 → C⁶ → F7 → Em7 → A7

Modal Analyses:

- Bar 1:** #IVm7^{b5} [Locr] → IIIm7^{b5}/III [Locr]
- Bar 5:** Em7^{b5} [Sp.Phr] → IIIm7^{b5}/II [Locr]
- Bar 8:** Fm7 [Dor] → bVII7 [Mixo]
- Bar 12:** Fm6 [Lyd^{b3}] → IVm6 [Lyd^{b3}]
- Bar 15:** F7 [Lyd^{b7}] → SubV7/III [Lyd^{b7}] → IIIIm7 [Dor] → V7/II [Mixo]

Bar 1: F#m7^{b5} is the Lydian-#IVm7^{b5} [Locr] and IIIm7^{b5}/III [Locr]

Bar 5: Em7^{b5} is the Mixolydian-IIIIm7^{b5} [Locr] and IIIm7^{b5}/II [Locr]

Bar 8: Fm7 and Bb7 are the Aeolian-IVm7 [Dor] and bVII7 [Mixo]
This is the ‘**backdoor cadence**’.²

We’ll see very soon that these are [minor Sub-Dominants \(SDm\)](#).

Bar 12: Fm6 (*without a seventh*) is the SDm Major^{b6}-IVm^Δ [Lyd^{b3}]
or the Aeolian-IVm7 [Dor]

Bar 15: F7 is SubV7/III [Lyd^{b7}]
or the Dorian-IV7 [Mixo] (the **Blues-IV7**) or the Melodic-IV7 [Lyd^{b7}]

¹ See [Analysis with Secondary II-V Cadences](#).

© 1943, 1945 Hanover Music, Cahn Music & Dorsey Bros. Music

² See [A New Typical minor Cadence: The b-II – Im cadence](#).

Two excerpts from the chapter on [The Auxiliary IV-Chord](#) can now be analyzed as follows.

The "waterfall" of auxiliary-IV chords

C pedal (= keep C in the bass all the time)

Every auxiliary IV-chord is analyzed as modal interchange.

- C => Mixolydian-I7 [Mixo] (= Blues I7)
- Eb => Dorian- \flat III $^\Delta$ [Lyd]
- Bb => Dorian- \flat VII $^\Delta$ [Ion]
- F => Dorian-IV $^\Delta$ [Mixo] (= Blues IV7)
- Db => Phrygian- \flat II $^\Delta$ [Lyd]
- Ab => Aeolian- \flat VI $^\Delta$ [Lyd]

'Hey Joe' (Billy Roberts) in E Major

bVI7 [Mixo] (IV/...) [Mixo] bVII7 [Mixo] (IV/...) [Mixo] IV7 [Mixo] (IV/...) [Mixo] I7 [Mixo]

E Locr E Phr E Aeol E Dor E Mixo

- C7 => Locrian- \flat VI7 [Mixo]
- G7 => Prygian- \flat III7 [Mixo]
- D7 => Aeolian- \flat VII7 [Mixo]
- A7 => Dorian-IV7 [Mixo]
- E7 => Mixolydian- I7 [Mixo] (= Blues I7)

Lament

J.J. Johnson

Fm **E^bm7** **A^b7** **D^bA** **Gm7** **C7**

Im bVII^bm7 V7/bVI bVI^A II^bm7 V7
 [Mel] [Dor] [Mixo] [Lyd] [Dor] [Mixo]
 F Mel F Phr D^b Maj F Aeol F Maj F Maj

F **Am7^b5** **D7** **Gm7** **Em7^b5** **A7** **Ø**

I III^bm7^b5 V7/II II^bm7 VII^bm7^b5 V7/VI
 [Ion] [Locr] [Sp.Phr] [Dor] [Locr] [Sp.Phr]
 F Maj F Mixo G Harm F Maj D Harm

Dm **C7** **B^bm6** **Am7** **Dm7** **Gm7** **Em7^b5** **A7**

VIm V7 IVm6 III^bm7 VI^bm7 II^bm7 VII^bm7^b5 V7/VI
 [Mel] [Mixo] [Lyd.m] [Phr] [Aeol] [Dor] [Locr] [Sp.Phr]
 D Mel F Maj F Maj^b6 F Maj F Maj F Maj D Harm

Dm **E^bm7** **A^b7** **D^bA** **Gm7^b5** **C⁷^b9** **D.C. al Ø**

VIm bVII^bm7 V7/bVI bVI^A II^bm7^b5 V7^b9
 [Mel] [Dor] [Mixo] [Lyd] [Locr] [Sp.Phr]
 D Mel F Phr D^b Maj F Aeol F Harm

Dm **C7** **B^bm6** **Am7** **Dm7** **Bm7^b5** **B^bm7** **E^b7**

VIm V7 IVm6 III^bm7 VI^bm7 #IV^bm7^b5 IVm7 bVII^b7
 [Mel] [Mixo] [Lyd.m] [Phr] [Aeol] [Locr] [Dor] [Mixo]
 D Mel F Maj F Maj^b6 F Maj F Lyd F Aeol

F **Dm7** **D^b7** **C7** **F** (**Gm7^b5** **C⁷^b9**)

I VI^bm7 SubV7/V V7 I (II^bm7^b5 V7^b9)
 [Ion] [Aeol] [Lyd^b7] [Mixo] [Ion] [Locr] [Sp.Phr]
 F Maj NPS F Maj F Maj F Aeol F Harm

'Lament' (J.J. Johnson) is a good example of a song that, according to the key signature and ending chord, is in F major. But it uses as many chords from F minor, and other modes as well.

As one progresses through the book, the possible choices become more and more extensive.

- I have limited myself to the four basic dominants in this analysis, in order to have clear parent scales. But Lydian variants sound really great in this song!
- I've also let the melody guide my choices.
Without the melody, in improvisation, there are of course other options.

Bar 1

Fm Melodic-Im [Mel] only with A♭ (b3) and B♭ (key signature).

Bars 2-3 (and 14-15)

E♭m7 Phrygian-♭VIIIm7 [Dor] confirms the secondary function.

A♭7 Major-V7/♭VI [Mixo] (in D♭ Major).

F (T13) and D♭ (4) in the melody rule out a minor, or Lydian, variant.

Major^{b6}-V7 [Mixo^{b9}] is the only possible alternative.

D♭Δ Aeolian-♭VI^Δ [Lyd] because = in F minor natural. Following its dominant, it could also be de darker Phrygian-♭VI^Δ [Ion] (but = than actually in D♭ major).

Bar 6

Am7^{b5} Mixolydian-IIIIm7^{b5} [Locr] confirms the secondary function.

D7 Harmonic-V7/II [Sp.Phr] with residual tone E♭ (b9), and B♭ (b13) in the melody.
The Altered-V7 [Alt] is the only alternative.

Bar 9 (and 13, and 17)

Dm tonal change on VIm => actually the Melodic-*Im* in D minor.

C7 Major-V7 [Mixo].

Residual tone F (4) and A (T13) rule out a minor, or Lydian, variant.

Major^{b6}-V7 [Mixo^{b9}], as alternative, might be easier, because ...

B♭m6 Major^{b6}-IVm6 [Lyd^{b3}] (SDm).

Bar 19

Bm7^{b5} Lydian-#IVm7^{b5} [Locr]. For once, this is not not a relative-IIIm7^{b5}, but an approach chord to B♭m7 (see [Chromatically Altered Sub-Dominants](#)).

Bar 20

B♭m7 Aeolian-IVm7 [Dor], and **E♭7**, Aeolian-♭VII7 [Mixo].

(We'll learn very soon that E♭7 can also be SDm ♭VII7 [Lyd^{b7}].)

Bar 22

D♭7 SubV7/V [Lyd^{b7}] is the better option (functional and bright).

Locrian-♭VI7 [Mixo] is a possible option (modal and dark).

C7 Major-V7 [Mixo]. The melody (A) requires a chord scale with T13.

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)			

In an analysis *with modal interchange chords*, we get:

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		C Mixolydian	

G7	F7	C7	C7
V7	IV7	I7	I7
[Mixo]	[Mixo]	[Mixo]	[Mixo]
C Ionian	C Dorian	C Mixolydian	

Let's determine the parent scale using the “key signature method”:

I7	with B♭	1 flat	=> Mixolydian-I7	[Mixo]
IV7	with E♭	2 flats	=> Dorian-IV7	[Mixo]
V7	with B	no flats	=> Ionian-V7	[Mixo]

The **Major Blues** is a multimodal system *centered on the Mixolydian mode*.¹
The Dorian mode is needed for IV7, and the Ionian mode is needed for V7.

From Bright to Dark	Ionian	1	2	3	4	5	6	7
		I ^Δ [Ion]	IIIm7 [Dor]	IIIIm7 [Phr]	IV ^Δ [Lyd]	V7 [Mixo]	VIm7 [Aeol]	VIIIm7 ^{b5} [Locr]
		T	SD	T	SD	Blues D	T	D
	Mixo- lydian	1	2	3	4	5	6	b7
		I7 [Mixo]	IIIm7 [Aeol]	IIIIm7 ^{b5} [Locr]	IV ^Δ [Ion]	Vm7 [Dor]	VIm7 [Phr]	bVII ^Δ [Lyd]
		Blues T	SD	Blues T	SD	Blues SD(D)	T	Blues SD
	Dorian	1	2	b3	4	5	6	b7
		Im7 [Dor]	IIIm7 [Phr]	bIII ^Δ [Lyd]	IV7 [Mixo]	Vm7 [Aeol]	VIm7 ^{b5} [Locr]	bVII ^Δ [Ion]
		Blues T	SD	Blues T	Blues SD	Blues SD(D)	Blues T	Blues SD

The **main Blues chords** are in bold.

Other chords containing blue notes (b3 and/or b7) are also Blues chords.²

Chords in gray do not contain blue notes.

With these [Jazz] chord scales (and parent scales) one expands the improvisation possibilities. Though, it sounds less *typical blues* than when only [Blues] chord scales are used.

It can be even jazzier with (only) one blue note per chord (“residual tones method”).

I7 with B♭ => Mixolydian-I7 [Mixo].

IV7 with E♭ *only* => Melodic-IV7 [**Lyd^{b7}**]

V7 with E♭ *only*³ => Melodic-V7 [**Mixo^{b13}**]

(See also minor Blues on next page.)

But it also works the other way around. When one encounters these Blues chords (the main ones, but also the others) in jazz standards (*not* Blues songs), one can improvise on them with [Blues] chord scales.

¹ Blues harp players that play a C Major Blues use a diatonic harp in F major, or C Mixolydian.

² See also [Series of Diatonic Chords in Dorian minor](#).

³ E♭ is not a residual tone from C major, but a blue note in C Blues.

MINOR BLUES

In **minor Blues**, one plays the Tonic **Im7** and the Subdominant **IVm7**. Only **V7** remains major, to have a *functional dominant*.¹

Typical minor Blues is also the A♭7 chord that introduces the G7 chord. It is analyzed here as SubV7/V [Lyd♭⁷], but later we may analyze it as one of the [Chromatically Altered Sub-Dominants](#) (chrSD). "True" blues musicians just keep playing C Blues on it.

‘The Thrill Is Gone’ (Rick Darnell, Roy Hawkins)²

Cm7	Cm7	Cm7	Cm7
Im7 [Blues]	Im7 [Blues]	Im7 [Blues]	Im7 [Blues]
(C Blues)			

Fm7	Fm7	Cm7	Cm7
IVm7 [Blues]	IVm7 [Blues]	Im7 [Blues]	Im7 [Blues]
(C Blues)			

A♭7	G7	Cm7	Cm7
SubV7/V [Lyd♭⁷]	V7 [Blues]	Im7 [Blues]	Im7 [Blues]
(C Blues)			

Im7 with E♭ and B♭ (2 flats)	=> Dorian-Im7	[Dor]
IVm7 with E♭ and A♭ (3 flats)	=> Aeolian-IV7	[Dor]
V7 with E♭ <i>only</i>	=> Melodic-V7	[Mixo♭¹³]

¹ Though, there are minor Blues songs with a Dorian-Vm7 [Aeol] chord too.

² Best known in the version by B.B. King.

In an analysis *with modal interchange chords*, we get:

Cm7	Cm7	Cm7	Cm7
Im7 [Dor]	Im7 [Dor]	Im7 [Dor]	Im7 [Dor]
C Dorian _____			

Fm7	Fm7	Cm7	Cm7
IVm7 [Dor]	IVm7 [Dor]	Im7 [Dor]	Im7 [Dor]
C Aeolian _____		C Dorian _____	

A♭7	G7	Cm7	Cm7
SubV7/V [Lyd♭⁷]	V7 [Mixo♭¹³]	Im7 [Dor]	Im7 [Dor]
NPS _____	C Melodic _____	C Dorian _____	

The **minor Blues** is a minor multimodal system *centered on the Dorian mode*.¹
The Aeolian mode is needed for IVm7, and the Melodic mode is needed for V7.

From Bright to Dark	Melodic	1	2	♭3	4	5	6	7
		Im ^Δ [Mel]	IIm7 [Dor⁹]	♭III ^{Δ⁹⁵} [Lyd⁹⁵]	IV7 [Lyd♭⁷]	V7 [Mixo♭¹³]	VIm7⁹⁵ [Locr⁹]	VIIIm7⁹⁵ [S.Locr]
		T	SD	T	SD	Blues D	T	D
	Dorian	1	2	♭3	4	5	6	♭7
		Im7 [Dor]	IIm7 [Phr]	♭III ^Δ [Lyd]	IV7 [Mixo]	Vm7 [Aeol]	VIm7⁹⁵ [Locr]	♭VII ^Δ [Ion]
		Blues T	SD	T	SD	SD(D)	T	SD
	Aeolian	1	2	♭3	4	5	♭6	♭7
		Im7 [Aeol]	IIm7⁹⁵ [Locr]	♭III ^Δ [Ion]	IVm7 [Dor]	Vm7 [Phr]	♭VI ^Δ [Lyd]	♭VII7 [Mixo]
		T	SD	T	Blues SD	SD(D)	T	SD

The **main Blues chords** are in bold.

Other chords containing blue notes (♭3 and/or ♭7) are also Blues chords.²

Chords in gray do not contain blue notes.

¹ Blues harp players that play a C minor Blues use a diatonic harp in B♭ (Major), or C Dorian.

² See also [Series of Diatonic Chords in Dorian minor](#).

MODAL ANALYSIS OF BLUES

Let's review a few Blues progressions seen before.¹

Blues with Secondary II-V Cadences

C7	F7	C7	Gm7	C7
I7 [Mixo]	IV7 [Mixo]	I7 [Mixo]	Vm7	I7 [Mixo]
C Mixolydian _____	C Dorian _____	C Mixolydian _____		

F7	F7	C7	Em7	A7
IV7 [Mixo]	IV7 [Mixo]	I7 [Mixo]	IIIIm7	V7/II [Phr] [Mixo ^{b13}]
C Dorian _____		C Mixolydian _____	C Ion _____	Dm Mel _____

Dm7	G7	Em7	A7	Dm7	G7
IIIm7 [Dor]	V7 [Mixo]	IIIIm7 [Phr]	V7/II [Mixo ^{b13}]	IIIm7 [Dor]	V7 [Mixo]
C Ionian _____		Dm Mel _____	C Ionian _____		

All the chords (except A7, in bars 8 and 11) are analyzed as modal interchange chords.

Bar 4: The modal analysis Mixolydian-Vm7 [Dor] – Mixolydian-I7 [Mixo] confirm the secondary function IIIm7/IV – V7/IV.

Bar 8 and 11: Em7: the *primary* Ionian-IIIIm7 [Phr] prevails.
A7: Melodic-V7/II [Mixo^{b13}] in D minor.

But there are of course many more options on the II-V cadences!

¹ See [More About the Blues](#).

Swedish Blues

‘Blues For Alice’

(Charlie Parker)¹

F ^Δ	Em7 ^{b5}	A7	Dm7	G7	Cm7	F7
I ^Δ [Ion]	VIIIm7 ^{b5} [Locr]	V7/VI [Sp.Phr]	VIm7 [Dor]	II7 [Mixo]	Vm7 [Dor]	I7 [Mixo]
F Ionian	—————	Dm Harm	—————	F Lydian	—————	F Mixolydian
B♭7	B♭m7	E♭7	Am7	D7	A♭m7	D♭7
IV7 [Mixo]	IVm7 [Dor]	♭VII7 [Mixo]	IIm7/II [Dor]	V7/II [Mixo]	♭III7 [Dor]	♭VI7 [Mixo]
F Dorian	—————	F Aeolian	—————	G Major	—————	F Locrian
Gm7	C7		F	Dm7	Gm7	C7
IIm7 [Dor]	V7 [Mixo]		I [Ion]	VIm7 [Aeol]	IIm7 [Dor]	V7 [Mixo]
F Ionian	—————					

All chords are analyzed as modal interchange chords, but three:

Bar 2: A7 V7/VI secondary dominant

Bar 7: Am7 IIm7/II no primary function => only 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.

Bars 6 to 9: Four consecutive [Dor] – [Mixo] chord scales to enhance the parallelism of the harmony.

That's why Am7, now IIm7/II, has no primary function.

And also, why E♭7 and D♭7 are not SubV7 chords, despite the dotted arrow.

Four consecutive [Dor] – [Lyd^{b7}] was of course also possible.

Again, there are always *many more* options.

¹ © 1956 Atlantic Music Corp. (renewed 1984)

‘Bluesette’

(Toots Thielemans)¹

(In 12-bar 6/8 meter instead of the usual 24-bar 3/4 meter)

$B\flat^\Delta$	Am7 \flat^5	D7	Gm7	C7	Fm7	$B\flat 7$
I $^\Delta$ [Ion]	VIIIm7 \flat^5 [Locr]	V7/VI [Sp.Phr]	VIIm7 [Dor]	II7 [Mixo]	Vm7 [Dor]	I7 [Mixo]
$B\flat$ Ionian _____	Gm Harm _____	$B\flat$ Lydian _____			$B\flat$ Mixolydian _____	
$E\flat^\Delta$	$E\flat m7$	$A\flat 7$	$D\flat^\Delta$		$D\flat m7$	$G\flat 7$
IV $^\Delta$ [Ion]	IVm7 [Dor]	$\flat VII7$ [Mixo]	$\flat III^\Delta$ [Ion]		$\flat IIIIm7$ [Dor]	$\flat VI7$ [Mixo]
$B\flat$ Mixolydian _____	$B\flat$ Aeolian _____				$B\flat$ Locrian _____	
$C\flat^\Delta$	Cm7 \flat^5	F7	Dm7	$D\flat 7$	Cm7	F7
$\flat II^\Delta$ [Ion]	IIIm7 \flat^5 [Locr]	V7 [Mixo \flat^{13}]	IIIIm7 [Phr]	$\flat III7$ [Mixo]	IIIm7 [Dor]	V7 [Mixo]
$B\flat$ Locrian _____	$B\flat$ Aeol _____	$B\flat$ Mel _____	$B\flat$ Ion _____	$B\flat$ Phr _____	$B\flat$ Ionian _____	

All chords (except D7, in bar 2) are analyzed as modal interchange chords.

Everywhere, the modal analysis confirms the secondary function.

Except $D\flat 7$ in bar 11: not a SubV7/II [Lyd $\flat 7$].

Bar 4 and 5: $B\flat$ Mixolydian chords = modulation to $E\flat$ Major.

Bar 6 and 7: $B\flat$ Aeolian chords = modulation to $D\flat$ Major.

Bar 8 and 9: $B\flat$ Locrian chords = modulation to $C\flat$ Major.

Bars 9 to 11: Gradual brightening of the modes (parent scales):
 Locrian => Aeolian => Melodic => Ionian

¹ © 1963,1964 MCA-Duchess Music Corp. and New Thunder Music Inc.

Avoid the Avoids

Improvisers hate avoids. Because in the heat of an improvisation one sometimes lands on an avoid, without resolving it down to the stable chord tone. And that can sound rather clumsy.

That's why, since the Be-Bop style (1940-50s), the tendency arose "to Avoid the Avoids" by brightening modes to chord scales that, preferably, had no avoids at all.

Such brightening's are also *modal changes*. For example:

Category	Dark chord scale	With avoids		Brighter chord scale	Avoids
Δ-chords	[Ion]	Av11	=>	[Lyd]	–
	[Lyd]				
m7-chords	[Phr]	Av♭9 – Av♭13	=>	[Aeol]	Av♭13
	[Aeol]	Av♭13	=>	[Dor]	–
	[Dor]	–			
m-chords (without seventh)			=>	[Dor] [Mel]	–
m7♭5-chords	[Locr]	Av♭9	=>	[Locr⁹]	
V7-scales	[Mixo]	Av11	=>	[Lyd⁷]	–
	[Mixo⁹]	Av11	=>	[Dim ½-1]	–
	[Mixo♭13]	Av11	=>	[Wh.T]	–
	[Sp.Phr]	Av11	=>	[Alt]	–
Diminished chord scales	[U.Locr]				
	[Locr⁹⁷]		=>	[Dim 1-½]	–
	[U.Locr⁹]				

But, take note! That doesn't always "work"! Phrasing is essential here. It must be properly brought on, and properly resolved.

minor Sub-Dominants (SDm)

IN BETWEEN MAJOR AND MINOR

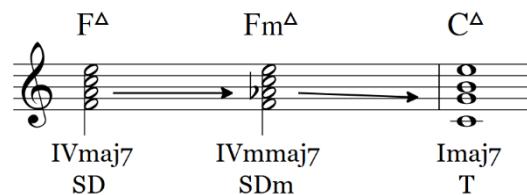
Lowering the 6th degree of the Major parent scales

A composer writes a song in C major and decides to use – instead of the IV (major) subdominant chord – a IVm chord, a **minor subdominant**.

He does this because **Fm** sounds *darker (sadder, softer, more lovely, etc.)* than **F**. It sounds kind of *more minor*.

To obtain the **Fm** chord, he needs to lower the 6th degree of the parent scale (C major) to A♭.¹ The 3rd degree (E) – and thus the scale itself – is *still major* though. The song sounds *in between major and minor*.

Lowering the 6th degree originally comes from counterpoint to cause melodic resolutions in semitones to the 5th degree (to the dominant: 6 => b6 => 5), within the chords.



This technique is at the origin of the whole concept of **minor subdominant**. One can, in principle, apply it to *any subdominant chord*. But that gives an enormous number of possible combinations, and not all combinations are that common. I'll limit myself below to the best known SDm chords.

Original Subdominants		minor subdominants (SDm)	Chord scale	Parent scale
Parent scale	Chord			
Major (Ion)	IIm7	IIm7^{b5}	[Dor ^{b5}]	Major^{b6}
	IV ^Δ	IVm^Δ	[Lyd ^{b3}]	
	IV6	IVm6	[Lyd ^{b3}]	
	V9sus4	V7^{b9}sus4	[Mixo ^{b9}]	
Mixo	IIm7	IIm7^{b5}	[Locr ⁹]	Mixo^{b13}
	IV ^Δ	IVm^Δ	[Mel]	
	♭VII ^Δ	♭VII7	[Lyd ^{b7}]	

The **Aeolian-minor chords** IIm7^{b5} [Locr], IVm7 [Dor], ♭VI^Δ (♭VI6) [Lyd] and ♭VII7 [Mixo] are also SDm chords, as they too contain the lowered 6th degree. But these are ordinary modal interchanges with natural minor. They *do not hang between major and minor*; they are “*minor*” chords.

¹ See [The Majorb6 Parent Scale](#).

Lowering the 2nd degree of the Major parent scales

One can also cause semitone resolutions to the central tone, coming from the 2nd degree ($2 \Rightarrow \flat 2 \Rightarrow 1$). Lowering the 2nd degree also creates minor subdominants.

A musical staff in G major (one sharp) showing three chords: Dm⁷, D^Δ^{#5}, and C^Δ. Below the staff, the Roman numerals IIIm⁷ SD, bII+maj⁷ SDm, and Imaj⁷ T are listed under their respective chords.

Original Subdominants		minor subdominants (SDm)	Chord scale	Parent scale
Parent scale	Chord			
Major (Ion)	IIIm ⁷	bII+ ^Δ	Major ^{b2} [Mode II]	Major^{b2}
	IV6	bII+ ^Δ /IV	[Lyd ^{b6}]	
	V9sus4	bII+ ^Δ /V	[Mixo ^{b5}]	
Mixo	IIIm ⁷	bII+ ^Δ	Mixo ^{b9} [Mode II]	Mixo^{b9}
	IV6	bII+ ^Δ /IV	[Maj ^{b6}]	
	Vm ^{7b5}	Vm ^{7b5}	[Dor ^{b5}]	
	bVII ^Δ	bVII ^Δ m ^Δ	[Lyd ^{b3}]	

Lowering the 2nd and the 6th degrees of the Major parent scales

And with a combination of both lowered degrees, one also gets minor subdominants.

A musical staff in G major (one sharp) showing three chords: Dm⁷, D^Δ, and C^Δ. Below the staff, the Roman numerals IIIm⁷ SD, bIIImaj⁷ SDm, and Imaj⁷ T are listed under their respective chords.

Original Subdominants		minor subdominants (SDm)	Chord scale	Parent scale
Parent scale	Chord			
Major (Ion)	IIIm ⁷	bII ^Δ	Major ^{b2/b6} [Mode II]	Major^{b2/b6} ¹
	IV6	bII ^Δ /IV	[Harm ^{#4}] ²	
	V9sus4	bII ^Δ /V	[Mixo ^{b9/b5}]	
Mixo	IIIm ⁷	bII ^Δ	[Lyd ^{#2}]	Sp.Phr.
	IV6	bII ^Δ /IV	[Harm]	
	Vm ^{7b5}	Vm ^{7b5}	[Locr ¹³]	
	bVII ^Δ	bVII ^Δ m ⁷	[Dor ^{#4}]	

¹ Also known as (one of the many) **Oriental**, or **Double Harmonic** mode (because it is composed of two consecutive harmonic tetrachords).

² Also known as **Hungarian Gypsy** mode.

The **Phrygian minor chords** $\flat\text{II}^\Delta$ [Lyd], IVm7 [Aeol], $\text{Vm7}^{\flat 5}$ [Locr] and $\flat\text{VIIIm7}$ [Dor] are also SDm chords, as they too contain the lowered 2nd and 6th degrees. But these are ordinary modal interchanges with Phrygian minor. They *do not hang between major and minor*; they are “minor” chords.

IN BETWEEN MINOR AND MAJOR

Just for comparison, to understand the concept of SDm chords even better.

A composer writes a song in C minor and decides to use – instead of the IVm subdominant chord – a IV (major) chord, a **major subdominant**.

He does this because **F** sounds *brighter (more joyful, more direct, ...)* than **Fm**. It sounds kind of *more major*.

To obtain the F chord he needs to raise the 6th degree of the parent scale (C minor) to A. The 3rd degree ($E\flat$) – and thus the scale itself – is *still minor* tough.

The song sounds *in between minor and major*.

The **Melodic-minor chords** IIIm7 [Dor $^{\flat 9}$], IV7 [Lyd $^{\flat 7}$], V9sus4 [Mixo $^{\flat 13}$], $\text{VIm7}^{\flat 5}$ [Locr 9] and $\text{VIIIm7}^{\flat 5}$ [S.Locr], and also the **Dorian-minor chords** IIIm7 [Phr], IV7 [Mixo], Vm7 [Aeol] and $\flat\text{VII}^\Delta$ are *major subdominants* (SDmaj) for the minor key, since they contain the raised 6th degree.

They hang *between minor and major*.

IN BETWEEN MINOR AND “YET MORE MINOR”

Lowering the 2nd 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 2nd degree of the Aeolian mode, one already immediately gets the Phrygian mode. But lowering the 2nd degree in Harmonic, gives the **Neapolitan minor** scale, conveniently called Harmonic $^{\flat 2}$ in this book.

The name of this scale comes from the Neapolitan school (17th and 18th centuries ¹) who introduced the technique ² with the famous Neapolitan sixth chord ($D\flat/F$ below). ³

¹ Scarlatti, Pergolesi, Piccinni, Paisiello, Cimarosa, ...

² ... which was also later adopted as a favorite style mark by classics such as Mozart and especially Beethoven.

³ The classical term, *sixth chord*, comes from the (typical) inversion of the chord, $D\flat/F$, with a sixth between the bass (F) and the highest voice ($D\flat$). Not to be confused with the (also classical term) *sixte ajoutée* chord $D\flat 6$.

In classical music, the SDm (Neapolitan sixth) chord is used mainly as a preparation to the dominant chord, and with strict classical voicing prescriptions.¹

The technique is also used from Melodic to **Neapolitan major**² (Melodic^{b2}), and from Dorian to Dorian^{b2}.

Original Subdominants		minor subdominants (SDm)	Chord scale	Parent scale
Parent scale	Chord			
Harmonic	IIm7 ^{b5}	♭II ^Δ	[Lyd ^{#6}]	Harm ^{b2}
	IVm6	♭II ^Δ /IV	[Aeol ^{#4}]	
	V ^{b9} sus4	♭II ^Δ /V	[Locr ³]	
Melodic	IIm7	♭II ^Δ	Mel ^{b2} [Mode II]	Mel ^{b2}
	IV7	IV7 ^{b13}	[Whole Tone] ³	
	V7sus4	V7 ^{b5}	[Whole Tone] ⁴	
Dorian	IIm7	♭II ^{Δ#5}	[Lyd ^{#5}]	Dor ^{b2}
	IV7	IV7 ^{b13}	[Mixo ^{b13}]	
	Vm7	Vm7 ^{b5}	[Locr ⁹]	
	♭VII ^Δ	♭VII ^Δ	[Mel]	

The **Phrygian minor chords** ♭II^Δ [Lyd], IVm7 [Aeol], Vm7^{b5} [Locr] and ♭VII^Δ [Dor] are also SDm chords in minor, as they too contain the lowered 2nd degree. But these are (already) ordinary “Phrygian” chords (they *do not hang in between Aeolian and Phrygian*).

Example with minor subdominants

‘I Should Care’ (Cahn/Stordahl/Weston)⁵ in C Major.

Bars 8 and 9: Fm7 B♭7 C^Δ

Bars 24 and 25: Fm7 B♭7 Am7

First, we analyzed this cadence as IIm7 [Dor] and V7 [Mixo] of, and thus in, E♭.⁶
But this was difficult to justify, given the context.

We also analyzed it as the ‘backdoor cadence’, the Aeolian modal interchange chords IVm7 [Dor] and ♭VII7 [Mixo]. Same chord scales, but contextually more correct.⁷

¹ By the way, in classical compositions, it is also used with resolution to C *major*.

(See ♭II^Δ/IV in section [Lowering the 2nd and the 6th degrees of the Major parent scales](#).)

² Both the Neapolitan scales start with a Phrygian tetrachord (½ – 1 – 1).

Neapolitan **minor** ends with a *Harmonic* tetrachord (½ – 1½ – ½) => *minor*.

Neapolitan **major** ends with a *Major* tetrachord (1 – 1 – ½) => *major*.

³ Omitting the fifth.

⁴ Omitting the fourth (reason why the chord symbol is noted without sus4).

⁵ © 1943, 1945 Hanover Music, Cahn Music & Dorsey Bros. Music

⁶ See [Analysis with Secondary II-V Cadences](#).

⁷ See [Analysis with Modal Interchanges](#).

With hook and dotted arrow to Am7 (bars 24 and 25) we analyzed it as a secondary sub-cadence SubIIIm7/VI [Dor] (with a question mark as to the primary function) and SubV7/VI [Lyd^{b7}]. Nice and correct solution, but that only works towards Am7.¹

Now it becomes:

Fm7	B ^b 7	C ^Δ	or	Am7
SDm IVm7	SDm ^b VII7	I ^Δ		VIm7
[Dor]	[Lyd ^{b7}]	[Ion]		[Aeol]
C Aeol	C Mixo ^{b13}	C Maj		C Maj

This analysis also confirms the chord scales of the secondary sub-cadence of VI. Both [Mixo] and [Lyd^{b7}] are correct options for ^bVII7. One with, and the other without, avoid.

Chromatically Altered Sub-Dominants

SDm chords provide a *darkening* of the original parent scale. There are Subdominant chords that provide a *brightening* too, they're called **Chromatically Altered Sub-Dominants** (chrSD).

Raising the 4th degree of the parent scale

Raising the 4th degree causes a melodic resolution in semitone from F# to G (#4 => 5), *within the chords*. The technique can be applied to *any subdominant (including SDm)*, and even to dominant chords that then become subdominant.

Chromatic SD chords mostly resolve to the Tonic chord C (I) in triad, and the resolution to the 5th degree (G) happens most often in the bass (=> C/G).

The musical staff illustrates the harmonic progression with the following chords and their resolutions:

- IV^Δ (C Maj) leads to #IVm7^{b5} (C Lyd).
- #IVm7^{b5} leads to I/5 (C Maj).
- I/5 leads to C/G (C Maj).
- IIm7 (C Maj) leads to II7/3 (C Lyd).
- II7/3 leads to I/5 (C Maj).
- I/5 leads to C/G (C Maj).

Below the staff, the chords are labeled with their names and modal functions:

IV ^Δ [Lyd] C Maj	#IVm7 ^{b5} [Locr] C Lyd	I/5 [Ion] C Maj	IIm7 [Dor] C Maj	II7/3 [Mixo] C Lyd	I/5 [Ion] C Maj
-----------------------------------	--	-----------------------	------------------------	--------------------------	-----------------------

Should D7 resolve to a G chord, then it wouldn't be a chrSD, but the secondary dominant V7/V.

But chrSD chords also sometimes go back to the unaltered Subdominant, with a semitone resolution from F# to F (#4 to 4). We'll see an example of that in a moment.

¹ See [Analysis with Sub Cadences](#).

Original chords		Chromatic altered subdominants (chrSD)	Chord scale	Parent scale
Parent scale	Chord			
Major	IIm7	II7	[Mixo]	Lyd
	IV ^Δ	#IVm7 ^{b5}	[Locr]	
	V7sus4	V ^Δ sus4	[Ion]	
	V7	V ^Δ	[Ion]	
	VIIIm7 ^{b5}	VIIIm7	[Phr]	
Mixolydian	IIm7	II7	[Mixo ^{b13}]	Lyd^{b7}
	IV ^Δ	#IVm7 ^{b5}	[S.Locr]	
	Vm7	Vm ^Δ	[Mel]	
	♭VII ^Δ	♭VII+ ^Δ	[Lyd ^{r5}]	
Dorian	IIm7	II7	[Sp.Phr]	Dor^{#4}
	IV7	#IV [○]	[U.Locr]	
	Vm7	Vm ^Δ	[Harm]	
	♭VII ^Δ	♭VII+ ^Δ	[Ion ^{#5}]	

All subdominants can be chromatically altered, including subdominants from the darker Aeolian and Phrygian (and Locrian) modes.

But, the resulting chords, parent scales, and chord scales are almost impossible to follow, and even harder to notate (without enharmonic translation). In the examples below, we'll come across an Aeolian chord that becomes such a "strange" chrSD.

Examples of chromatically altered subdominants

'I Should Care' (Cahn/Stordahl/Weston)¹ in C Major.

Bars 27, 28 and 29: | Am Am/G | **D7/F#** Fm6 | C/E ... |

We analyzed Am7/G with hook to **D7/F#** from the beginning as a secondary cadence IIm7/V [Dor] and V7/V [Mixo], even though there was no G chord anywhere in the proximity.²

Now it becomes: (MI = modal interchange)

Am	Am/G	D7/F#	Fm6	C/E ...
VIm [Mel]	MI VIm7 [Dor]	chrSD II7 [Mixo]	SDm IVm6 [Lyd ^{b3}]	I [Ion]
Am Mel	C Lyd	C Lyd	C Maj ^{b6}	C Maj

Here is an example of a chrSD that returns to the unaltered Subdominant (*SDm* in this case).

While this analysis confirms the chord scales we had already found, it is contextually more correct.

¹ © 1943, 1945 Hanover Music, Cahn Music & Dorsey Bros. Music

² See [Analysis with Secondary II-V Cadences](#).

‘Lament’ (J.J. Johnson)¹ in F Major.

Bars 18, 19 and 20:	Am	Dm7	Bm7 ^{b5}	B♭m7	E♭7	
---------------------	----	-----	-------------------	------	-----	--

We analyzed² Bm7^{b5} as a modal interchange chord Lydian-#IVm7^{b5} [Locr] that approaches the following B♭m7. The analysis doesn’t change per se, but this is also clearly a chrSD that returns to the unaltered Subdominant (SDm in this case).

Am	Dm7	Bm7 ^{b5}	B♭m7	E♭7
IIIIm7	VIm7	chrSD #IVm7 ^{b5}	SDm IVm7	SDm bVII7
[Phr]	[Aeol]	[Locr]	[Dor]	[Mixo]
F Maj		F Lyd	F Aeol	

‘Blues in C’ with diminished chords³

Bars 5, 6 and 7:	F7	F♯°	C/G ...
------------------	----	-----	---------

We analyzed F♯° as upward diminished to C/G with a [Dim 1-½] chord scale.

It is in fact the Blues chord F7 (IV7) chromatically altered to F♯° to resolve to C/G, in triad, and with melodic semitone resolution in the bass.

See the chart on previous page: the Dorian-IV7 chord becoming #IV° [U.Locr].

The over-diminished chord

When one chromatically alters the subdominant chord Fm7 (IVm7) in C minor (Aeolian), one gets this:

A musical staff in C minor (two flats) showing five chords. The first chord is Fm7 (IVm7). The second chord is F♯° (labeled #IV°°). The third chord is Cm/G (labeled Im/5). The fourth chord is G7 (labeled V7). The fifth chord is Cm (labeled Im). The staff has a treble clef and a key signature of two flats. The bass line consists of single notes: a half note for Fm7, a quarter note for F♯°, a half note for Cm/G, a quarter note for G7, and a half note for Cm.

This sounds great! (Very classical.)

But the second chord is now an F♯ chord with **diminished third**, diminished fifth, and diminished seventh. The parent scale is Aeol^{#4}, and the chord scale [U.Locr^{b3}].

In classical music theory, this is called the **over-diminished** chord. But how should we notate it? (In the example above, it's notated with the totally non-existent symbol F♯°°.)

¹ © 1954 (Renewed 1982) Screen Gems-EMI Music Inc.

² See [Analysis with Modal Interchanges](#).

³ See [Blues with Diminished Chords](#).

The only solution, in jazz notation, is to translate the chord enharmonically.

A musical staff in G clef and common time. It shows five chords: Fm7, A♭7/G♭, Cm/G, G7, and Cm. Below each chord is its Roman numeral equivalent: IVm7, bVI7/b7, Im/5, V7, and Im. The staff has a basso continuo line below it.

With other, even darker subdominants, the difficulty becomes even greater.

ANALYSIS WITH (RANDOM) MODAL CHANGES

'Fall'¹ is a song in C major that I composed as an experiment. The objective was to use as many modal interchange chords as possible. It also contains a few minor subdominants (SDm) and only one chromatically altered subdominant (ChrSDm). The introduction and ending also prepare us for the final section of this book, [Modal Non-Functional Harmony](#).

Notes on the Analysis

(See next pages.)

Bars 1 and 2: These two bars (which repeat) allude to bars 45 and 46, but here the chords are notated in [Modal Voicings](#). We'll see, in next section, how this can be analyzed as a *non-functional vertical modal structure*.

- **D♭/G, V7 [Alt]** does not contain the tritone when played in this voicing.
It is *non-functional*.
- **E♭/F** is **SDm** Mixo^{b6}-bVII7 [Lyd^{b7}].

Bar 11: **Em9**, with F♯ (T9) in the melody, is modal interchange (**MI**) Lydian-IIIIm7 [Aeol].

The following **Em7**, with F in the melody, is the “regular” Ionian-IIIIm7 [Phr].
(Although F is only a fleeting passage tone.)

Bar 12: **Fm7 B♭7**: both *Aeolian SDm* chords, as this preserves the same parent scale for the whole measure. But [Lyd^{b7}] is also an option for bVII7.

Bars 13 to 16:

- **E♭m7, MI** Locrian-bIIIIm7 [Dor] confirms the secondary function towards D♭.
- **A♭7, V7/bII** [Mixo] (or [Lyd^{b7}]).
- **D♭^A**, with G (T♯11) in de melody, is **MI** Phrygian-bII^A [Lyd].
(Although G may only be a chromatic approach to the following A♭.)

This analysis remains, stubbornly, focused on modal interchanges (which was the premise of the song), whereas a “regular” modulation to D♭ major (II-V-I) would definitely be simpler!

¹ © 2013 Raphaël Van Goubergen, SABAM – Recorded by [Masala](#), available on [YouTube](#).

Fall

Raphaël Van Goubergen

1 D/C E♭/F C/B♭ D♭/G → D/C E♭/F C/B♭ D♭/G → D/C

I^Δ IVm7 ♫VII7 V7 I^Δ IVm7 ♫VII7 V7 I^Δ
 [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^Δ 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^Δ Dm7 Em⁹ Em7 Fm7 B♭7

I^Δ IIIm7 IIIIm9 IIIIm7 IVm7 ♫VII7
 [Ion] [Dor] [Aeol] [Phr] [Dor] [Mixo]
 C Maj — — C Lyd — C Maj — C Aeol —

13 Ebm7 A♭7 D♭^Δ

♭IIIIm7 V7/♭II ♫II^Δ
 [Dor] [Mixo] [Lyd]
 C Locr — — D♭ Maj — C Phr —

17 Dm7 G⁷♭9 C^Δ F♯m7♭5

IIIm7 V7 ♯IVm7♭5
 [Dor] [Sp.Phr] [Locr]
 C Maj — C Harm — C Maj — C Lyd —

21 C/G Dm7/G G⁷♭9 C^Δ Gm7 C⁷♭9

I^Δ V7sus4 V7 I^Δ Vm7 V7/IV
 [Ion] [Mixo] [Sp.Phr] [Ion] [Dor] [Sp.Phr]
 C Maj — V7sus4 — C Harm — C Maj — C Mixo — F Aeol —

Fall - 2

25 F^Δ F#m7b5 B7b9 Em7 E♭7
 IV^Δ [Ion] #IVm7b5 V7/III IIIIm7 SubV7/II
 C Mixo C Lyd E Aeol C Lyd NPS

29 Dm7 G7b9 C^Δ B♭m7 E♭7
 IIIm7 [Dor] V7 I^Δ bVIIIm7 V7/VI
 C Maj C Harm C Maj [Dor] C Phr Ab Maj

33 A♭^Δ Am7b5 D7b9 Gm7 G♭^Δ
 bVI^Δ [Ion] VIm7b5 V7/V Vm7 bV^Δ
 C Phr C Dor G Harm C Dor [Lyd]

37 Fm7 Em7b5 E♭m7 A♭9 Dm7 G7♯9
 IVm7 [Dor] IIIIm7b5 SubV7/V IIIm7 V7
 C Aeol C Mixo C Loer NPS C Maj [Sp.Ph]

41 C^Δ Dm7 Em9 Em7 F^Δ B♭7
 I^Δ [Ion] IIIm7 IIIIm9 IIIIm7 IV^Δ bVII7
 C Maj C Lyd C Maj [Phr] [Lyd] C Mixo b6

45 C^Δ Fm7 B♭7 G7♯9 1. Cm6/9
 I^Δ IVm7 bVII7 V7 Im6/9
 [Lyd] [Dor] [Lyd b7] [Alt] [Dor]
 C Lyd C Aeol C Mixo b6 NPS C Dor

repeat and fade

49 2. E♭6/C D7/C D♭^Δ/C C E♭6/C D7/C D♭^Δ/C C
 Im7 I^Δ Im7 I^Δ Im7 I^Δ Im7 I^Δ
 [Dor] [Lyd] [Phr] [Lyd] [Dor] [Lyd] [Phr] [Lyd]
 C Dor C Lyd C Phr C Lyd C Dor C Lyd C Phr C Lyd

Bar 18 (and 22, 30, 40): G7^{b9} Harm-V7 [Sp.Phr] (or [Alt]) is **MI** in a major context.

Bars 20 and 21: **F#m7^{b5}, chrSD** Lydian-#IVm7^{b5} [Locr] resolving to C/G (I/5).

Bars 24 and 25: Again, the analysis keeps thinking unflinchingly in modal interchanges. An ordinary modulation to F major (with modal change on the dominant) might be simpler.

Bars 26 and 27: Or, modulation to E minor.

Bars 32 and 33: Or, modulation to A♭ Major.

Bars 34 and 35: Or, modulation to G minor.

Bars 37 and 38: *non-functional vertical modal structure.*

Bar 44: B♭7, SDm Mixo^{b6}-♭VII7 with [Lyd^{b7}] chord scale (unlike in bar 12).

Because this time, the previous chord is F^Δ (with residual tone E) instead of Fm7 (with E♭).

Bar 45 and 46: See bars 1 and 2: same chords, different voicing => same analysis.

This time with a *functional* dominant G7^{#9} (with tritone).

Bar 47: Final chord Cm^{6/9}, Dorian-Im [Dor] chord ... or Melodic-Im [Mel].

Bars 49 and 50 (and 51 and 52): *non-functional vertical modal structure with a pedal bass.*¹

The modal colors switch from Dorian, to Lydian, to Phrygian and back to a Lydian final chord. An Ionian ending chord could be used, but the Lydian color better contributes to the "floating" atmosphere for this "repeat and fade outro."

¹ See [Pedal Bass and Ostinato](#).

MODAL NON-FUNCTIONAL HARMONY

This last chapter is only an introduction to **Modal Non-functional Harmony**. The topic deserves a book of its own. The main purpose is to point out that functional harmony doesn't cover the full spectrum of music as we hear it every day. Non-functional music is much more common than one might think. A quick overview of (Western) music history helps to understand this.

What is Modal Music?

In the early Middle Ages, music was *monophonic*: a single melody, with no accompanying chords (no harmony). It was written in one of the six (natural) church modes: Lydian, Ionian, Mixolydian, Dorian, Aeolian or Phrygian (Locrian was not in use as a church mode). The music was *modal*.

From the late Middle Ages, *polyphonic* music was developed, in counterpoint: several independent (horizontal) melodies set one above the other. This led to a possible *vertical reading* of the music. The different notes that sounded together became *chords*. Harmony had been discovered.

At universities, one developed *major/minor functional harmony*: music with functional chords (subdominant, dominant and tonic), and cadences, with only one purpose: to establish, and assert, the central tone (or chord), the *tonic*. This is why it is often simply called *tonal* music, as opposed to modal music.

Meanwhile, popular uneducated musicians continued to play modal music (monophonic, without chords). And itinerant Roma gypsies also introduced new (especially Indian, Persian and Arabic) modes to Europe.

From the 19th century onwards, there was a fusion of modal and tonal music. People tried to harmonize (old) popular melodies with (modern) chords. But, (too) functional chords tend to disrupt modal music. To establish, and maintain, the typical color of the (of a) mode, a new view of harmony was needed. One had to strip the chords of their function. And so, the concept of *modal, non-functional*, harmony was born.

Establishing the Color of a Mode

The color of a mode (the modality) depends on (1) its central tone ¹ and (2) the specific construction of its scale. There are several tools that contribute to *establishing*, and *maintaining*, that modality. Each separately highlights only one aspect of the mode; together they reinforce each other. To illustrate how each of these aspects works, I will start from a simple tune in C Dorian in "medieval" style, which I will gradually build up to a "contemporary" harmonized version. But first, some general advice:

1. Start diatonic (without tonal or modal changes)!
Stick to the tonic and mode you've chosen (C Dorian in the example below).
2. Use triads first, to better hear how they contribute to the modality (or not).
Then find new voicings to enrich the color.

¹ So, it's *tonal* music too!

CHARACTERISTIC TONE

Each mode has (at least) one characteristic tone, in opposition, or in reference, to other modes.¹ The characteristic tone will depend on the musical context.

For example: When comparing major to minor, the major third (3) is the characteristic tone of major, as opposed to the minor third ($\flat 3$) in minor.

When comparing the natural modes, one finds other characteristic tones.

Major modes	Lydian	1	2	3	#4	5	6	7
	Ionian (= major reference)	1	2	3	4	5	6	7
	Mixolydian	1	2	3	4	5	6	$\flat 7$

If Ionian is the reference in major, then **#4** is the characteristic tone of **Lydian**, and **$\flat 7$** is the characteristic tone of **Mixolydian**. Conversely: the characteristic tone of Ionian is *4 compared to Lydian*, and *7 compared to Mixolydian*.

Regardless of comparisons, the following characteristic tones are assumed:

- Lydian: **#4**
- Ionian: **4** (i.e., compared to Lydian)
- Mixolydian: **$\flat 7$**

minor modes	Dorian	1	2	$\flat 3$	4	5	6	$\flat 7$
	Aeolian (= minor reference)	1	2	$\flat 3$	4	5	$\flat 6$	$\flat 7$
	Phrygian	1	$\flat 2$	$\flat 3$	4	5	$\flat 6$	$\flat 7$
	Locrian	1	$\flat 2$	$\flat 3$	4	$\flat 5$	$\flat 6$	$\flat 7$

If Aeolian is the reference in minor, then **6** is the characteristic tone of **Dorian**, and **$\flat 2$** is the characteristic tone of **Phrygian**. Conversely: the characteristic tone of Aeolian is *$\flat 6$ compared to Dorian*, and *2 compared to Phrygian*.

Regardless of comparisons:

- Dorian: **6**
- Aeolian: **$\flat 6$** (i.e., compared to Dorian)
- Phrygian: **$\flat 2$**
- Locrian: **$\flat 5$**

Locrian is the only mode with **$\flat 5$** . That's its characteristic tone. But that is also an unstable dominant degree. Therefore, the Locrian mode is virtually never used as the starting point for a composition.²

Now we have one characteristic tone for each natural mode. That tone becomes an indispensable tone in the melody. Chords containing this tone also become characteristic chords. Bear in mind that, depending on the context, other comparisons than the ones above may be relevant, resulting in other characteristic tones.

¹ See [Characteristics of the Chord Scales](#).

² And therefore, Locrian was not a church mode.

PEDAL BASS AND OSTINATO

The tonic is needed as a fixed reference. The oldest and most appropriate way to establish the tonic is the **pedal bass**. This is a typical modal technique, an early, medieval, form of "polyphony".¹ The tonic is held as a continuous bass tone,² and so one always hears perfectly how the melody tones relate to – how far they stand from – the tonic.³

Here is a simple melody, in C Dorian, with a pedal bass.

The 6th degree (A) is the characteristic tone (Ch.T.) of the mode.

The musical example shows a single melodic line in G major (three flats). The bass line is a constant note (pedal bass). The melody consists of eighth and sixteenth notes. The characteristic tone (Ch.T.) is marked above the notes in the melody line.

The key signature includes 3 flats, as for C minor natural (or Aeolian, the minor reference), highlighting the Dorian characteristic tone.

The pedal bass can become more rhythmic, like this.

The musical example shows a single melodic line in G major (three flats). The bass line is now a rhythmic pattern of eighth notes (ostinato). The melody consists of eighth and sixteenth notes. The characteristic tone (Ch.T.) is marked above the notes.

Or, one replaces the static bass with an ostinato⁴ (a bass riff, or bass vamp).

The musical example shows a single melodic line in G major (three flats). The bass line is now a rhythmic pattern of eighth-note chords (ostinato). The melody consists of eighth and sixteenth notes. The characteristic tone (Ch.T.) is marked above the notes.

Ostinatos can occur in any register of music. It doesn't have to be played in the bass only. The melody itself is often some kind of ostinato as well. And other accompanying instruments can also play their own ostinato. This creates a simple form of polyphonic counterpoint with several layers of ostinatos.

¹ Real polyphony has at least two *melodies* above each other. Here, we only have one melody against one bass tone.

² Think of the Scottish bagpipes with their drone(s).

³ Remember the "solar system" explaining the [Functions of the 12 Tones in the Tonality](#).

⁴ Ostinato (Italian) means "obstinate". The pattern repeats itself in an obstinate, stubborn, way.

MODAL PLATEAU'S

Typically, the melody will keep repeating itself (ostinato), sounding and establishing the same modal color over and over again. But after a while, a variation is needed to break the monotony.

The first line is the original melody, the second line is a variation. Both parts are in C Dorian. As long as the (whole) tune remains in the same mode (as in most pop and folk songs) one speaks of a **linear modal structure**.

One can also vary by modulation to another tonic (tonal change), or to another mode (modal change), or both.

Line 1: original melody in C Dorian. Line 2: variation with two bars in B \flat Mixolydian, and two bars in A \flat Mixolydian. Line 3 resumes the original melody. Each "episode" is called a **modal plateau**. Such a plateau should always be long enough to install the (new) mode. A song with several modal plateaus, like here, is called a **plateau modal structure**.

Plateau structures are used quite frequently in Modal Jazz. But often the modes alternate very fast, e.g., at every bar, and even at every beat. Such a structure is then called **vertical modal**. In order to establish the modality so quickly, new tools are necessary: typical **modal voicings**.

MODAL VOICINGS

“Traditional Diatonic” Modal Voicings

Each mode can be considered a parent scale of a series of diatonic chords¹ built by stacking thirds (tertiary voicings). This we already know. Yes, but this time we are not looking at whether they have the function dominant or subdominant. We are looking at whether they contain the characteristic degree (or degrees) of the mode.

- The first chord (I) is (obviously) the Tonic chord. => **T**
Even though it itself does not always contain the characteristic degree (more on this later).
- Chords with characteristic degree are characteristic chords. => **Ch**
These can help establish the modality.
- Other chords are (just) non-characteristic. => (-)
- Some chords are to be avoided. => **Av**
These tend to disrupt the modality.

Take C Dorian with its diatonic chords:

- Cm7 is Tonic.
- Dm7, F7 and Bb^Δ are characteristic chords (including the 6th degree, A).
- Am7^{⁷⁵} is either characteristic chord (including A), either to be avoided as a non-stable chord because of its diminished 5th.²
- Eb^Δ (bIII^Δ) and Gm7 (Vm7) can be used, though they're not characteristic chords.

We can use these chords to “harmonize” the little tune like this:

The tonic *chord*, Cm, is alternated with the characteristic chords Bb and F.³
But the tonic *note* is kept continuously as pedal bass.

¹ ... and chord scales (modes of the chords), although in this case, they're less relevant.
What we want is to establish the modality of the *parent* scale.

² Depending on which bass tone you'll use below it.

Am7^{⁷⁵}/C (with the *tonic of the mode* in the pedal bass) sounds as, or actually is, Cm6 or Tonic Im6.
Am7^{⁷⁵}, with A in the bass, is a non-stable chord (see further [Modal Cadences](#)).

³ 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.

This is the easiest way to establish the mode, and especially *to hear how it sounds*, how the "chords" relate to the tonic in the bass. The quotation marks at "chords", and also "harmonize" on the previous page, are significant: these are not real chords, but rather auxiliary chords¹, or better yet, they're **modal voicings**.

This technique works fine in *linear* and *plateau* structures, where each plateau is long enough to be able to establish the modality.

"Typical" Modal Voicings

In *vertical* 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 (6th degree in Dorian) using a **tertiary voicing**, you'll need all seven tones of the mode => Cm7^{9/11}/**13**. To lighten up the voicing, you can leave lower chord tones (3, 5 and/or 7) out. You'll end up with 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, triads ... or more if you like):

The resulting chords are exactly the same as the "traditional diatonic" voicings on the previous page. 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** (stack of fourths) around the characteristic tone. Traditional chord symbols, though, are insufficient to reflect the voicing; wherever possible, I suggest a (more or less) working chord symbol.

¹ See [The Auxiliary IV-Chord](#).

² Cm6 is the same as Am7^{b5}/C.

Again, these chords can also be played in other inversions, 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:

So, you can build whatever voicing you like (thirds, fourths, seconds, ...) above, around or below the characteristic tone. Ideally, the resulting voicing should include *all relevant* characteristic tones (depending on the context).

Cluster Voicings

Some musicians even use *cluster* voicings (stack of seconds only).

Important notes

Synthetic modes:

All the modes (all the scales, parent scales and chord scales) we've seen, not only natural, but synthetic modes as well, can be used as modal plateau (or voicing). You could be inspired to write a song (or voicings) in Melodic, Harmonic, Spanish Phrygian, Major^{b6}, Hungarian Gypsy (= Harm^{#4}), Oriental (= Major^{b2/b6}), etc. ... (and on any tonic you like, of course).

Multiple characteristic tones:

The characteristic tones depend on the connection, and comparison, of the modes.

		=> Direction of the music =>			
Modes	Dorian	Melodic	Harmonic	Ionian	Dorian
Characteristic tones	6	(6)	b6	6	6
	(b7)	7	(7)	(7)	b7
	(b3)	(b3)	(b3)	3	b3

The voicings should include *all relevant characteristic tones* at the connection.

No avoid tones:

In modal non-functional harmony, there are no avoid tones.

For example: Throughout the book, we've learned that the 4th degree is an avoid tone on an Ionian chord. But the 4th degree is the characteristic tone of the Ionian mode. If one wants to capture the typical Ionian color in just one grip, then the voicing will have to include that 4th degree (e.g., C^Asus4). Better yet, when coming from the Hungarian Gypsy mode (with ♫3, ♪4 and ♫6), the voicing will need to contain 3 and 4 (typical Ionian *bite*) and 6 (e.g., C6add4).

Examples Mode per Mode

Below are examples of modal voicings for each natural mode (out of context). The chord symbols are only an attempt to render the voicing, they're open to discussion. When 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 to the performer, you could write C Lydian (instead of C^A♯4), C Ionian (instead of C^A11), and so on.

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 a plateau on itself: C Mixolydian, F Mixolydian and G Mixolydian.

Thanks to the auxiliary IV-chords (IV/I, IV/IV and IV/V ¹), all tones (except the 2nd degree) of the mode are heard, so also the characteristic tones of Mixolydian (4 and ♫7). The alternation of the chords, within the main chord (C, F/C and C7, with pedal bass), is a "traditional diatonic" modal voicing. The bass riff is a modal ostinato.

¹ See [The Auxiliary IV-Chord, In Blues](#).

12-bar minor Blues

So, evidently, the minor Blues is also a plateau structure:
Im7 (C Dorian), IVm7 (F Dorian) and V7 (G Mixolydian^{b13}).

‘So What’ (Miles Davis)

‘So What’¹ is probably the most famous jazz example of a plateau structure in AABA-format. Every plateau last for 8 bars:

Part 1 in Dm Dorian, Part 2 in Dm Dorian (= repeat),

Part 3 in E♭m Dorian (= repeat, but a semitone higher), Part 4 back in Dm Dorian.

Dm⁷

(G/D)
IV/I Dm⁷
 Im⁷

So What - Miles Davis (1926 - 1991) on the Im7

The *Dorian central chord* (Dm⁷) is alternated, four times per plateau, with its auxiliary IV-chord (G/D, on pedal bass) = traditional diatonic voicing.

‘Fall’ (Raphaël Van Goubergen)

We came across three (four) fragments in ‘Fall’ with *non-functional vertical modal structures*.² Let’s start with the easiest one (with pedal bass).

Bars 49 and 50 (and 51/52):

The colors switch from Dorian, to Lydian, to Phrygian and back to Lydian.

49 2. E♭6/C D7/C D♭A/C C

Im7 I^A Im7 I^A
[Dor] [Lyd] [Phr] [Lyd]
C Dor C Lyd C Phr C Lyd

- D♭A/C is a typical modal voicing for C Phrygian.

The other three chords, E♭6/C, D7/C and C, are **open voicings**:

they allow for different interpretations (below the most common ones).

- **E♭6/C** = C – E♭ – G – B♭ (1 – b3 – 5 – b7)
This voicing fits into Dorian, as well as Aeolian, and Phrygian.
- **D7/C** = C – D – F♯ – A (1 – 2 – #4 – 6)
Fits both Lydian, and Lydian^{b7}.
- **C** = C – E – G (1 – 3 – 5)
Fits into Lydian, Ionian, and Mixolydian.

¹ See [The Auxiliary IV-Chord, In Jazz](#).

² See [Analysis with \(random\) Modal Changes](#). © 2013 Raphaël Van Goubergen (SABAM)

If one wants to leave the voicings less open, one must add characteristic tones (and omit others, such as C and G):

Chord	Preferred mode	Add	
E♭6/C	Dorian	6	(A)
	Aeolian	♭6	(A♭)
	Phrygian	♭2	(D♭)
D7/C	Lydian	7	(B)
	Lydian ^{♭7}	♭7	(B♭)
C	Lydian	#4 and 7	(F♯ and B)
	Ionian	4 and 7	(F and B)
	Mixolydian	4 and ♭7	(F and B♭)

The following excerpts have a moving bass that follows the chords. So, we are going to analyze them from the bass, like chord scales (not from the parent scale).

Bar 1 and 2 (allusion to ...)

D/C E♭/F C/B♭ D♭/G

I^A [Lyd] IVm7 [Dor] ♭VII⁷ [Lyd ♭7] V⁷ [Alt]

C Lyd C Aeol C Mixo ♭6 NPS

Bar 45 and 46

45 C^A Fm7 B♭7 G7^{#9}

I^A [Lyd] IVm7 [Dor] ♭VII⁷ [Lyd ♭7] V⁷ [Alt]

C Lyd C Aeol C Mixo ♭6 NPS

When one puts the chords of one excerpt above the others, one gets a fairly precise picture of the desired modes.

D/C	E♭/F	C/B♭	D♭/G
C ^A	Fm7	B♭7	G7 ^{#9}
C Lydian	F Dorian (or Aeolian)	B♭ Lydian ⁷	G Altered (or Dim ½-1)

Bar 37 and 38:

37 Fm7 Em7^{♭5} E♭m7 A♭9

IVm7 [Dor] IIIm7^{♭5} [Loer] ♭IIIIm7 [Dor] SubV7/V [Lyd ♭7]

C Aeol C Mixo C Loer NPS

These are **open voicings**:

Fm7	Em7 ^{♭5}	E♭m7	A♭9
F Dorian (or Aeolian) (or Phrygian)	E Locrian (or Locrian ⁹)	E♭ Dorian (or Aeolian) (or Phrygian)	A♭ Lydian ⁷ (or Mixolydian)

The last two examples illustrate pretty well the statement from the beginning of this book: "*However, if one is going to look at a chord as a stand-alone tonal system, then obviously the chord scale is also a mode.*" (See [Parent Scale and Chord Scale](#).) Indeed, jazz musicians, who focus on chord scales, kind of always play (more or less) *modal* (be it functional or not).

Improvisation Vamp

Here's a new example, a sequence of chords with no functional relationship to each other. I'm using this as an improvisational vamp on a song in Fm. The tempo is slow enough to establish the modes. So, it is a plateau structure rather than a vertical structure.

E♭m9/F	Fm7	E♭m9/F	Fm7	B ^Δ /F	Fm7	B ^Δ /F	Fm7
F Phr	F Dor	F Phr	F Dor	F Locr	F Phr	F Locr	F Dor

E♭m9	Fm7	E♭m9	Fm7	B ^Δ	E ^Δ	A ^Δ	D ^Δ
E♭ Dor	F Dor	E♭ Dor	F Dor	B Lyd	E Lyd	A Lyd	D Lyd

E♭7 ^{#9}	C7 ^{#9}	E♭7 ^{#9}	C7 ^{#9}	Fm7	...	Song continues in Fm
E♭ Alt	C Alt	E♭ Alt	C Alt	F Dor		

The 1st line, with pedal bass, keeps F for tonic, but switches between modes.

- E♭m9/F is typically Phrygian.
- Fm7 is an open voicing. I usually play Dorian, but sometimes Aeolian too.
- B^Δ/F is typically Locrian.

The 2nd line, with moving bass, keeps the same modes, but switches tonics.

- 4 bars Dorian, alternating on E♭ and F.
- 4 bars Lydian, consecutively on B, E, A and D.

The voicings gradually open up to other options, but Dorian and Lydian are easy-sounding modes (without "avoids").

The third line also keeps the Altered mode four times, with switching tonics.

It also prepares for the dominant needed to resume the song in Fm.

- E♭7^{#9} [Alt] alternates with C7^{#9} [Alt] which is dominant of Fm.

To learn more on *Modal Jazz*, I can recommend the following book:

'Modal Jazz Composition and Harmony – Volume 1' (Ron Miller).

ANALYSIS IN MODAL NON-FUNCTIONAL

Elm

Medium-Slow $\text{♩} = 110$

Richie Beirach

1. F \sharp o7/G (=VII°) Gm (=Im) 1. Gm 2. Gm

G Harmonic _____ G Melodic (or Dor, Aeol, Harm) _____

6 F \sharp o7/G Gm

G Harmonic _____ G Melodic _____

10 F \sharp o7/G Gm

G Harmonic _____ G Melodic _____

14 A \flat /C (=bII) D7/C (=V7) B \flat maj9(#5) E7(#9) E \flat maj9(#11) (=bVI)

(=bIII) (=V7/II) (=bVI)

G Phrygian _____ G Harmonic _____ [E alt] _____ G Aeolian _____

18 Am7(b5) A \flat maj9(#11) 1. Em¹¹ (=VIm) 2. G (=I)

(= II) (= bII) 3 (= VIm) 1. Em¹¹ (=VIm) 2. G (=I)

G Aeolian _____ G Phrygian _____ G Lydian _____ G Ionian _____

(E Dorian) _____

The musical score consists of four staves of music, each with a key signature of one sharp (F#). The analysis below the music provides the harmonic function and mode for each bar.

- Bar 24:** C^{maj7}/G (= IV) | F^{#o}/G (= VII^o) | G⁽²⁾ (= I) | G
G Ionian | G Major**♭**6 | G Ionian
- Bar 28:** F^{#o}/G (= VII^o) | G(add9sus4) (= I) | G
G Major**♭**6 | G Ionian
- Bar 32:** F^{maj7}/C (= ♫VII) | D⁷/C (= V7) | G/B (= I) B⁺ | E^{♭maj7}/B[♭] (= ♫VI)
G Mixolydian | G Ionian | [B alt] | G Aeolian
- Bar 36:** A^{m7(b5)} (= II^{m7b5}) | A^{♭maj9(#11)} (= ♫II) | G(add9sus4) | G⁽²⁾ G⁽²⁾ add**♭**13
G Aeolian | G Phrygian | G Ionian | G Major**♭**6

Remarks

One can see on this score how the modal voicings have been arranged for the left hand of the pianist, and how the chord symbols help to determine the mode more precisely. by now you should be able to understand the analysis without further explanation. Still, a few comments.

The parent scale line below assumes G as a permanent tonic (as a pedal bass, if you will), even though the real bass does not. This also seems to me to be the starting point of the composition (and it becomes a lot clearer this way too).

Gm (bar 3, and beyond) is an open voicing with several options. My choice goes to Melodic.

E7^{#9} (bar 16) and **B+** (bar 34) are the only functional dominants in the song (with their own chord scales), although they do not resolve to their target chord.

E7^{#9} can be viewed as SubV7 of the following chord.

Em11 (bar 20): I chose Em Dorian (or G Lydian) as a contrast to the second ending on **G Ionian** (bar 22).

Modal Cadences

The song we just analyzed is already quite complex. It's Modal Jazz. But there are also very simple modal compositions. Today's pop music is filled with them. How does Modal Pop work?

If the bass, instead of playing a constant tonic as a pedal bass, follows the diatonic voicings, you end up with **modal cadences**.¹ Let's recap our harmonized tune in C Dorian again.

The tonic chord **Cm** is still alternated with the (auxiliary) chords **Bb** and **F**. But because the bass now follows the chords, the song becomes ambiguous: What is the tonic? Is the melody still in C Dorian, or is it in Bb Major?

As long as you play triads, this ambiguity remains (which is more or less the intention).

But if you add sevenths to the chords, the tendency toward Bb major increases:

Bb^Δ sounds like I^Δ, Cm7 like IIIm7, and F7 like V7, in Bb major.

And, if you change the order of the chords to Cm7 – F7 – Bb^Δ – Cm7, then one hears a functional II-V-I cadence (SD, D, T) that affirms Bb as the tonic, and completely washes away the original idea, C Dorian.

If one wants to preserve the modality (or at least, the ambiguity), one must strip the chords of their functionality: preferably no sevenths, and certainly no tritones, because then they sound dominant.

And you should also pay attention to the order of the chords: for example, there are **typical modal cadences** (often very few chords), but also "disruptive" ones that you should avoid.

¹ See [“Traditional Diatonic” Modal Voicings](#).

Reminder:

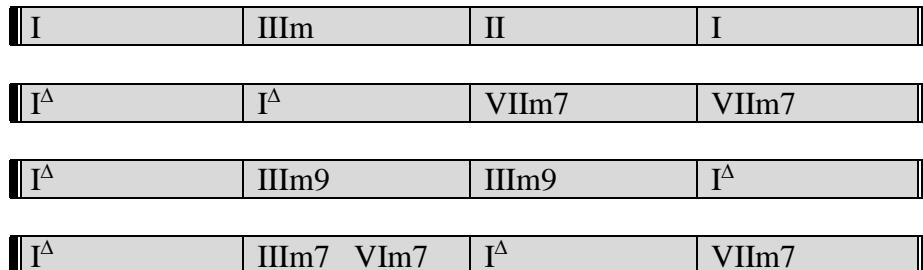
- Chords containing the characteristic tone of the mode are characteristic chords (**Ch**).
- Chords containing a tritone (7, m^{7b5}, dim) are to be avoided (**Av**).
- Non-characteristic chords are possible, but just "non-characteristic".
- The list of typical cadences below is not exhaustive. Be creative.

Lydian mode

C^Δ D7 Em7 F[#]m7^{b5} G^Δ Am7 Bm7
 I^Δ II⁷ IIIm7 IVm7^{b5} V^Δ VIIm7 VIIIm7
 T Ch Av Ch Ch

Characteristic tone: #4

Typical cadences:



Cadences to avoid:

V ^Δ – I ^Δ	tends to sound like	I ^Δ – IV ^Δ	in G Major: G ^Δ – C ^Δ
II ⁷ – V ^Δ	tends to sound like	V ⁷ – I ^Δ	in G Major: D ⁷ – G ^Δ

Examples: Pop songs in Lydian are not very common.

‘I Can’t Make You Love Me’ (Mike Reid, Allen Shamblin)¹, famous in Bonnie Raitt’s version, is a superb example of a Lydian Pop song.

‘People Help the People’ (Simon Aldred)², known in version by Birdy.

¹ © 1991 Almo Music Corp., Brio Blues Music and BMG Songs Inc.

² © 2007 Sony/ATV Music Publishing (UK) Ltd.

Ionian mode

C Δ Dm7 Em7 F Δ G7 Am7 Bm7 $b5$
 I Δ IIIm7 IIIIm7 IV Δ V7 VIIm7 VIIIm7 $b5$
 T Ch Ch Ch Ch Ch Av

Characteristic tone(s): 4 (and 7 too, compared to Mixolydian)

But, never together in the same chord, as they form a tritone.

The Vth degree chord (G) is characteristic, but **without a seventh**.

Typical cadences:

█ I █ V █ VIIm █ IV █ “4-chord song”

█ I █ VIIm █ IV █ V █

█ I Δ █ I Δ █ IV Δ █ IV Δ █

... and so much more (see also examples below).

Cadences to avoid:

Ionian is major. It will always sound like the "common major key". Thus, there are no cadences to avoid. One should avoid V7 (with seventh) and VIIIm7 $b5$ as chords.

Examples:

Most pop songs in major.

Mixolydian mode

C7 Dm7 Em7 $b5$ F Δ Gm7 Am7 B $b\Delta$
 I7 IIIm7 IIIIm7 $b5$ IV Δ Vm7 VIIm7 bVII Δ
 T Av Ch Ch Ch Ch Ch

Characteristic tone: $b7$ (compared to Ionian – and 4, compared to Lydian $b7$)

Typical cadences:

█ I7 █ Vm7 █ I7 █ Vm7 █

█ I7 █ bVII Δ █ I7 █ bVII Δ █

Cadences to avoid:

I7 – IV Δ tends to sound like V7 – I Δ in F Major: C7 – F Δ

I7 – VIIm7 tends to sound like V7 – IIIIm7 in F Major: C7 – Am7 (= SubT)

I7 – IIIm7 tends to sound like V7 – VIIm7 in F Major: C7 – Dm7 (= SubT)

(SubT: IIIIm7 and VIIm7 are substitution tonic chords of F)

Examples:

Lots of Blues (and Bluesy Pop), Rock, Soul, Funk, ...

Dorian mode

Cm7 Dm7 $E\flat^\Delta$ F7 Gm7 $Am7\flat^5$ $B\flat^\Delta$
 I $m7$ II $m7$ $bIII^\Delta$ IV 7 V $m7$ VI $Im7\flat^5$ $bVII^\Delta$
 T Ch Ch Av Ch

Characteristic tone: 6Typical cadences:

Im7	IV7	Im7	IV7
-----	-----	-----	-----

Im7	IIm7	Im7	IIm7
-----	------	-----	------

Im7	$bVII^\Delta$	Im7	$bVII^\Delta$
-----	---------------	-----	---------------

Cadences to avoid:IV7 – $bVII^\Delta$ tends to sound like V7 – I $^\Delta$ in B \flat Major: F7 – B \flat^Δ Examples:

Lots of minor Blues (and Bluesy Pop), Rock, Soul, Funk, Latin ...

Aeolian mode

Cm7 Dm7 \flat^5 $E\flat^\Delta$ Fm7 Gm7 $A\flat^\Delta$ Bb7
 I $m7$ II $m7\flat^5$ $bIII^\Delta$ IV $m7$ V $m7$ bVI^Δ $bVII7$
 T Av Ch Vm7 Ch Ch

Characteristic tone: $\flat 6$ Typical cadences:

Im	$\flat VII$	$\flat VI$	Im	$\flat VII$	$\flat VI$
----	-------------	------------	----	-------------	------------

Im	$\flat VI$	$\flat VII$	Im	$\flat VI$	$\flat VII$
----	------------	-------------	----	------------	-------------

Im	$\flat VI$	$\flat III$	$\flat VII$	Ambiguous! But very typical. ¹
----	------------	-------------	-------------	---

... too many cadences to list (see examples below).

Cadences to avoid: $\flat VII7$ – $\flat III^\Delta$ tends to sound like V7 – I $^\Delta$ in E \flat Major: B $\flat 7$ – E \flat^Δ $\flat VII7$ – V $m7$ tends to sound like V7 – III $m7$ in E \flat Major: B $\flat 7$ – G $m7$ (= SubT) $\flat VII7$ – Im 7 tends to sound like V7 – VI $m7$ in E \flat Major: B $\flat 7$ – C $m7$ (= SubT)

¹ Sounds like the “4-chord song”: VI m – IV – I – V (in E \flat Ionian – see above).

$\text{IVm7} - \flat\text{VII7}$ tends to sound like $\text{IIm7} - \text{V7}$ in $E\flat$ Major: $\text{Fm7} - \text{B}\flat\text{7}$
 $\flat\text{VI}^\Delta - \flat\text{III}^\Delta$ tends to sound like $\text{IV}^\Delta - \text{I}^\Delta$ in $E\flat$ Major: $\text{A}\flat^\Delta - \text{E}\flat^\Delta$

Examples: Most pop songs in minor without (Harmonic or Melodic) dominant.

Phrygian mode

Cm7 $\text{D}\flat^\Delta$ $\text{E}\flat7$ Fm7 $\text{Gm7}^{\flat 5}$ $\text{A}\flat^\Delta$ $\text{B}\flat\text{m7}$
 IIm7 $\flat\text{II}^\Delta$ $\flat\text{III7}$ IVm7 $\text{Vm7}^{\flat 5}$ $\flat\text{VI}^\Delta$ $\flat\text{VIIIm7}$
 T Ch Ch Ch Av Ch Ch

Characteristic tone: $\flat 2$

Typical cadences:

Im7	$\flat\text{II}^\Delta$	Im7	$\flat\text{II}^\Delta$
-----	-------------------------	-----	-------------------------

Im7	$\flat\text{VIIIm7}$	Im7	$\flat\text{VIIIm7}$
-----	----------------------	-----	----------------------

Im	IVm7 $\flat\text{II}^\Delta$	Im	IVm7 $\flat\text{II}^\Delta$
----	------------------------------	----	------------------------------

Cadences to avoid:

$\flat\text{III7} - \text{Im7}$	tends to sound like $\text{V7} - \text{IIIIm7}$	in $A\flat$ Major: $\text{E}\flat7 - \text{Cm7}$ (= SubT)
$\flat\text{III7} - \text{Vm7}$	tends to sound like $\text{V7} - \text{VIm7}$	in $A\flat$ Major: $\text{E}\flat7 - \text{Fm7}$ (= SubT)
$\flat\text{III7} - \flat\text{VI}^\Delta$	tends to sound like $\text{V7} - \text{I}^\Delta$	in $A\flat$ Major: $\text{E}\flat7 - \text{A}\flat^\Delta$
$\flat\text{II}^\Delta - \flat\text{VI}^\Delta$	tends to sound like $\text{IV}^\Delta - \text{I}^\Delta$	in $A\flat$ Major: $\text{D}\flat^\Delta - \text{A}\flat^\Delta$
$\flat\text{VIIIm7} - \flat\text{III7}$	tends to sound like $\text{IIm7} - \text{V7}$	in $A\flat$ Major: $\text{B}\flat\text{m7} - \text{E}\flat7$

Examples:

Spanish-Phrygian "corrida-style" music, with the characteristic chords $\flat\text{II}$ and $\flat\text{III}$, but with the also typically Spanish **I major** Tonic chord.

I	I	$\flat\text{II}$	$\flat\text{III}$	$\flat\text{II}$
---	---	------------------	-------------------	------------------

Locrian mode

The Locrian mode, with its $\text{Im7}^{\flat 5}$ tonic, is never used as starting point for a composition.

CONCLUSION

Harmony teaches us how tones relate to each other. In this book, we first learned how they can be **next to each other** (horizontally, linear in time, in scales), and also how they can be **above each other** (vertically, simultaneously, in chords).

We started from one *parent scale* that generated seven chords. We learned how the chords *function*, how they **work together** in cadences. And we also learned that each of those seven chords has its own specific color, its own *chord scale*.

Building further on the functions of the chords, we saw a whole network of possible **secondary relationships** emerge that allow us, even if only briefly, to change pitch (central tone, tonic): *tonal changes*.

Then we learned that a minor key is also functional, be it in a multimodal system. And, that major and minor keys can exchange chords with each other: *modal interchanges*.

We even learned that, by altering only one (or two) degrees of the parent scale, we can create new chord types: *minor subdominants* and *chromatic altered subdominants*.

Finally, we saw how we can work with modes to work purely with colors, without worrying about functions (or relations). Compare this step with painting:

- One draws a white frame (a facade), with blue frames in it (windows and doors), a red triangle above it (a roof), a green area in front of it (a lawn), and a brown strip through it (a path). That's "a house!"

That's *functional* painting (*figurative*, they call it).

- One mixes the same white, blue, red, green and brown colors together, without specific shapes, and that is ...

... *non-functional* painting (*abstract*).

So, music can be very simple, but also very complex. One has to be careful not to make it too complex, because less is more. But neither should it be too simple, for simple is boring. A good composer, like a good chef, must learn **to dose**.

This book is also designed as a handbook that you can consult at any time when you feel the need to brush up on specific topics. I hope it will accompany you during your musical quests and discoveries. Good luck!

Sources

AEBERSOLD Jamie	How to Play Jazz and Improvise Volume 1	Jamey Aebersold	1967
ANGER-WELLER Jo	Clés pour l'Harmonie à l'usage de l'analyse, l'improvisation, la composition	Éditions Henry Lemoine	1990
BOLING Mark E.	The Jazz Theory Workbook	Advance Music	1993
COHN Lawrence	Nothing but The Blues The music and the musicians	Abbeville Press	1993
COULEAU Jean-Pierre	Traité d'Harmonie du Jazz Volumes 1 et 2	Éditions Salabert	1987
CROOK Hal	How to Improvise An approach to practicing improvisation	Advance Music	1991
CROOK Hal	How to Comp A study in jazz accompaniment	Advance Music	1995
DIDDEN F.	Theoretische Begrippen van de Muziek	Metropolis	1979
DOBBINS Bill	Jazz Arranging & Composing A Linear Approach	Advance Music	2005
FISCHER J. Cree	Piano Tuning A Simple and Accurate Method for Amateurs	Theo. Presser.	1907
FONTAINE Fernand	Traité de la Théorie Musicale	Éditions Henry Lemoine	1952
GARDNER Jeff	Jazz Piano Creative Concepts and Techniques	Éditions Henry Lemoine	1996
LEVINE Mark	The Jazz Theory Book (Le livre de la Théorie du Jazz)	Sher Music Co Advance Music	1995 1997
MEHEGAN John	Improvising Jazz Piano	Amsco Publications	1985
MILLER Ron	Modal Jazz – Composition and Harmony (Volume 1)	Advance Music	1996
MIXON Donovan	Performance Ear Training	Advance Music	1998
MULDER Ernest W.	Harmonie (Deel I) Theorie, Analyse (Deel II) De Practische Harmonie-leer	Uitgeversmaatschappij W. De Haan N.V.	1947

RAMEAU Jean-Philippe	Traité de l'Harmonie	Jean-Baptiste-Christophe Ballard	1722
REILLY Jack	The Harmony of Bill Evans	Hal Leonard Corporation	1992
RICKER Ramon	Pentatonic Scales for Jazz Improvisation	Studio P/R Inc.	1975
RUSSELL George	Lydian Chromatic Concept of Tonal Organization	Concept Publishing Company	2001
SCHAMPAERT Jef	Kleine Harmonieleer	Metropolis	1955
SCHOENBERG Arnold	Structural Functions of Harmony	Nuria Schoenberg Nono, Ronald Schoenberg and Lawrence Schoenberg (Faber and Faber Ltd.)	1954
SCHOENBERG Arnold	Fundamentals of Musical Composition	Estate of Gertrude Schoenberg	1967
SIRON Jacques	La Partition Intérieure Jazz, Musiques Improvisées	Éditions Outre Mesure	1992
STEFFELAAR Wouter	Muzikale Stijlgeschiedenis De evolutie van stijlkenmerken in de Westerse Klassieke Muziek	W. Steffelaar (Uitgeverij Nieuwezijds)	2007
VAN DORMAEL Pierre	Four Principles to understand music	Art Public Publishing	2008
WILLEMZEE Theo	Muzieklexicon	Het Spectrum	1975

And, of course also ...

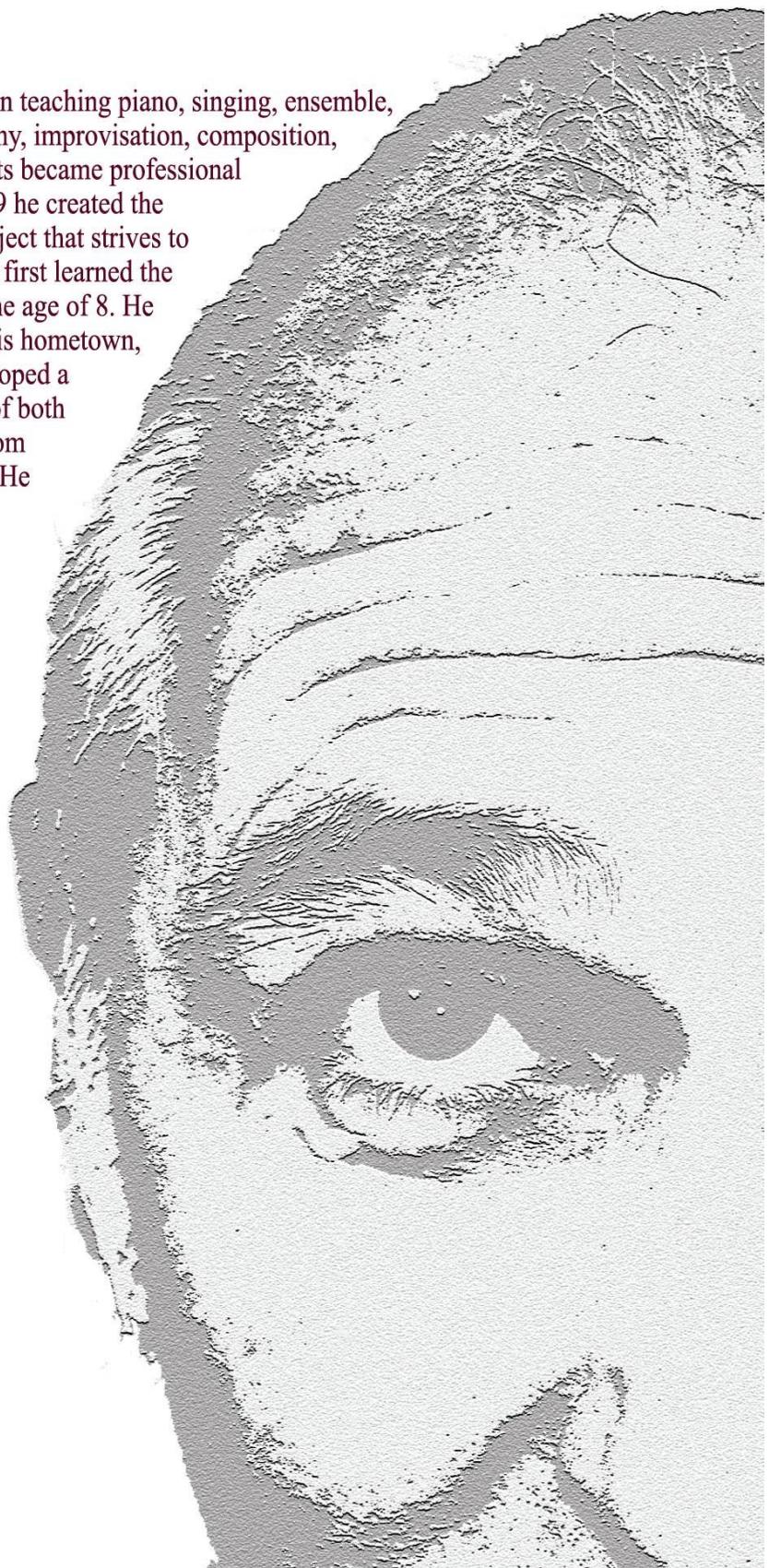
BERKLEE College of Music	The Real Book Volumes 1, 2 and 3	Berklee College of Music students (illegal) Hal Leonard	1970 2004
	The New Real Book Volumes 1, 2 and 3	Sher Music Co	1988

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.



CLASS & JAZZ
publications

ISBN 978-9-08240-430-2