

HARMONIC ANALYSIS

*for Scale Selection
and Chord Substitution*

by Curt Sheller

with
HARMONIZED
SCALE CHARTS

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Foreword

The understanding of a chord's function within a chord progression is the first step in the process of scale selection for improvisation and creating melodies as well as applying the principles of chord and scale substitution.

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Introduction

This book focuses on the following topics:

- analysis of chord function within chord progressions
- scale selection based on chord function
- chord and scale substitution principles

This book focuses on chord progressions based on *Tonic-Dominant* harmony found in the Jazz and Popular songs widely considered to be part of the "standard" jazz repertoire.

The principles in this book are based on extensive research and application. A special thanks to Chuck Anderson for many of the concepts put forth in this book.

Additional information and sample worksheets can be found on the web at:

 www.curtsheller.com/books/RMA1.html 

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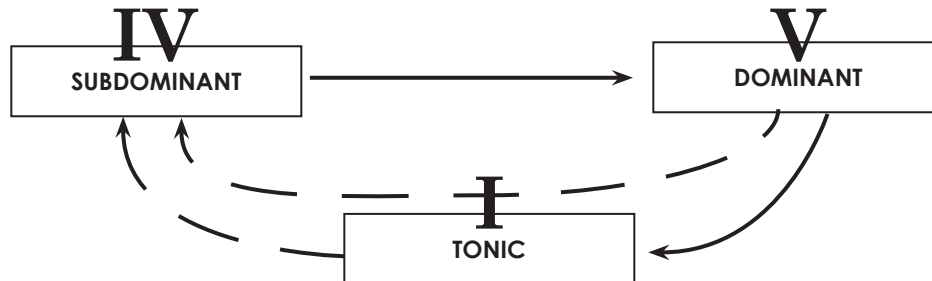
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Basic Concepts

Harmonic Analysis (HA) is the process used to determine the harmonic function of chords within a chord progression. A chord progression is defined as a sequence of chords, each chord has a root and is of a particular chord type. The relationship of a chord's root to a scale determines its function within that scale's tonality. Once a chord's function is identified scale selections along with chord and scale substitutions can be made. We call this process *Root Movement Analysis (RMA)*

Root Movement Analysis

Root Movement Analysis is the process of determining the root movement of chords within a chord progression. The chord types that are used as well as identifying tonal centers. This root movement can be determined and categorized using one of six harmonic principles and the harmonized chord charts contained in this book. These principles are covered in the next chapters.

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The Harmonized Chord Scale

The most common intervals used for building chords are major and minor thirds. This can be accomplished by stacking every other note of a scale or mode. This stacking of notes creates chords using a combination of major and minor thirds.

A minimum of three notes is needed to create a chord. These three note chords are called triads. Four notes make up 4-part chords, five notes make up a 5-part chord, all the way up to chords that include all the notes of the scale. These chords create a Harmonized Chord Scale that is used for a Root Movement Analysis. *For the purposes of harmonic analysis this book uses triads and 4-part chords only.* Here are the triads and 4-part chords that form a harmonized C major scale.

Example: C Major Harmonized Scale

<i>Triads</i>	C	Dm	Em	F	G	Am	B°
<i>4-Part Chords</i>	Cmaj7	Dm7	Em7	Fmaj7	G7	Am7	Bm7b5

By applying roman numerals to the chords of a harmonized scale a comparison of chord progressions can be made.

<i>Triads</i>	C	Dm	Em	F	G	Am	B°
<i>4-Part Chords</i>	Cmaj7	Dm7	Em7	Fmaj7	G7	Am7	Bm7b5
	I	II	III	IV	V	VI	VII

This book uses uppercase roman numerals only to identify a chord's function within it's harmonized chord scale.

These names are commonly used to indicate a chord's position and function within its corresponding major scale.

I	Tonic
II	Supertonic
III	Mediant
IV	Subdominant
V	Dominant
VI	Submediant
VII	Leading Tone

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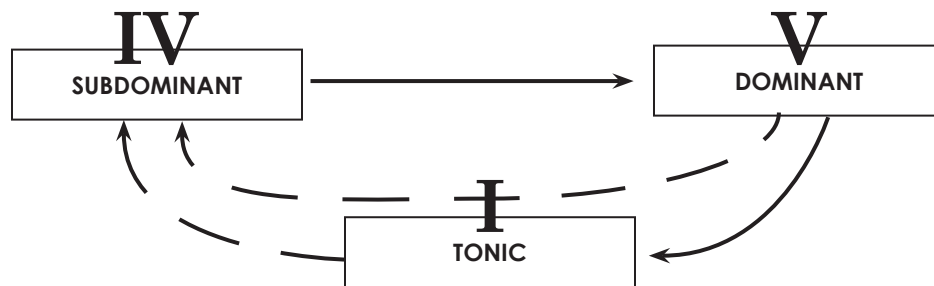


Tonic-Dominant Harmony

This book focuses on *Tonic-Dominant* harmony predominant in western music and a staple of a jazz musician's repertoire. Tonic-Dominant harmony stresses the use of *key centers* which are defined by the use of a **tonic (I)** chord. These tonic chords are usually preceded and supported by a **dominant (V)** chord. A dominant chord is sometimes preceded by the **subdominant (IV)** chord which tends to resolve towards the **dominant** chord which either resolves to the **tonic** chord or goes back to the **subdominant** delaying final resolution to the tonic chord.

A **tonic (I)** chord is a *passive* chord having a feeling of rest. A **dominant (V)** chord is an *active* chord having a feeling of restlessness and tends to be drawn to its tonic I chord.

An *active* chord is an triad that contains the fourth of its scale. A *passive* chord is any triad that contains the third of the scale.



Most progressions are "*tonal*" with at least one key center being established. Songs can and do modulate through multiple key centers. Many of the songs that are considered part of the standard jazz repertoire modulate through several key centers. Most folk and rock songs establish a main key center and do not modulate to other key centers.

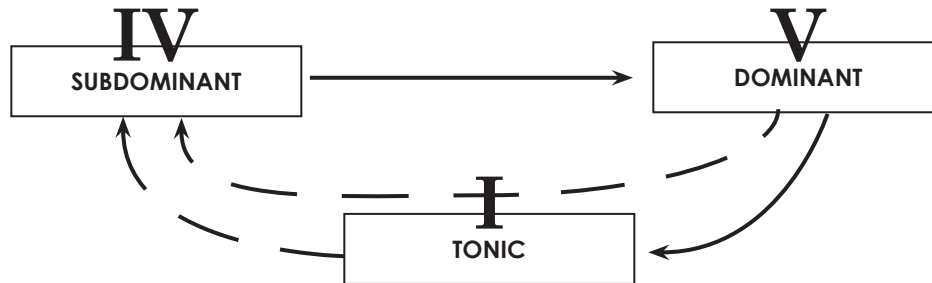
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The Six Harmonic Principles Overview

Here is an overview of the six harmonic principles outlined in this book.

Full Diatonic

A **Full Diatonic (FD)** chord is defined as a chord that has its root and species (chord type) in its harmonized chord chart. (*Harmonized chord charts are located in the back of this book*)

Partial Diatonic

A **Partial Diatonic (PD)** chord is defined as a chord that has its root in chord chart but its species is NOT in its harmonized chord chart.

Internal Modulation

An **Internal Modulation (IM)** is when a change of tonal center has occurred.

Unresolved

Unresolved (UR) is when a chord is in its harmonized chord chart but does not resolve to the I chord.

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Chromatic

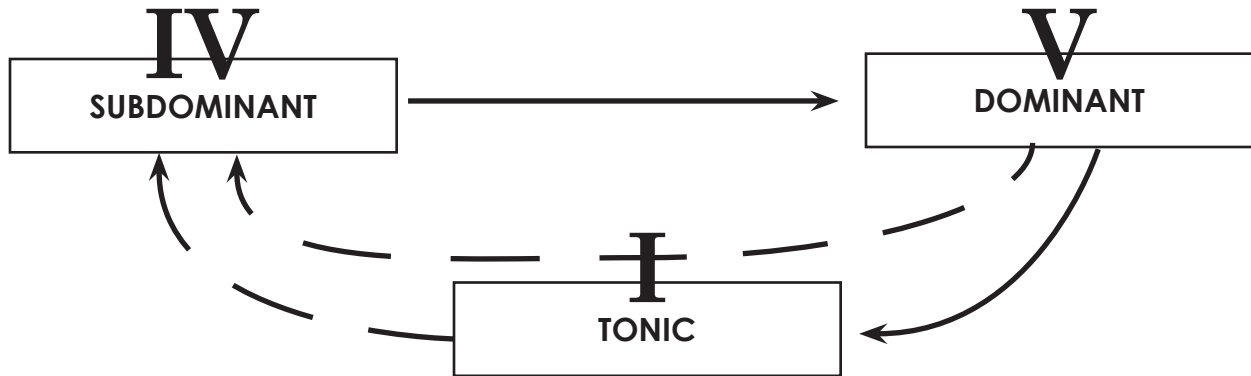
Chords ascending or descending by **Chromatic (CH)** half steps between roots. The root and species are NOT in the harmonized chord chart.

Cycle

A **Cycle (Cyl)** is when there is an equal distance between chord roots and same species for each chord, ascending or descending. A minimum of three chords is required for a Cycle.

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Full Diatonic

A **Full Diatonic** chord is defined as a chord that has its root and species (chord type) in its harmonized chord chart. A Full Diatonic progression can be based on a scale or mode.

WORKSHEET NOTATION: Label these chords with UPPERCASE roman numerals and the tonality or key center using an uppercase letter. There is no need to indicate the chord type with its roman numeral. (*See examples*)

Determining Tonality

The first thing to do for a Root Movement Analysis (RMA) is to determine the starting tonality or key center. Once the starting tonality has been discovered a harmonized chord chart can be selected to identify chord functions.

There are several clues that can be used to determine a starting tonality.

Key Signatures

A key signature is a summary of the sharps, flats and natural notes used in a section of music. Traditional key signatures represent major and their relative minor keys. A key signature can represent any scale or mode.

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Getting Started

The key signature can sometimes be used to determine the starting tonality. More often the last chord of a progression will most likely be the tonic or I chord and the main or central tonality. Even if the tonality can not be determined a harmonic analysis can be started.

Start by determining the first tonal center using the clues (key signature and or last chord or note). Now find it's harmonized chord chart. The most common tonality is Major comprising of a large majority of contemporary music.

Start assigning roman numerals to the basic chords of the progression. Ignore single beat chords, the upper partials of chords such as ninths, elevenths and thirteenth. Ignore alterations such as flat and sharp nines, sharp elevenths.

Familiarize yourself with both the basic triads and 4-part chords types in each of the harmonized chord charts.

EXAMPLE 1

Starting with a this simple, very common chord progression and the **Major** and **Minor** harmonized chord charts we'll take each chord one at time.



The first chord, a **Dm7** is in both the major and minor charts. In a major tonality it functions as a II chord in the key of C, a III chord in the key of Bb and a VI chord in the key of F. In a minor tonality it functions as a I chord in the key of D minor and as the IV chord in the key of A minor. (5 choices)

The second chord, **G7** is found in both the major and minor charts but only as a V chord in the key of C major or C minor. Store this information away for future reference. (2 choices)

The **Cmaj7** chord function as a I chord in the key of C major, the IV chord in the key G major. In a minor tonality it functions as a III chord in key of A minor or VI chord in the key of E minor. (4 choices)

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Here are the possibilities we now have using the Major and Minor Harmonized Chord charts:

	Key Center:	Chord Function		
1)	Dm:	I	IV7	#Imaj7
2)	Am:	IV	bVII7	IIIImaj7
3)	C:	II	V	I
4)	Bb:	III	VI7	IIImaj7
5)	F:	VI	II7	Vmaj7

We can rule out numbers 1 and 2 as the one of the chords in each of the progression do not show up in the major or minor harmonized scale chart.

We can then rule out numbers 4 and 5 as they do not have I or tonic chords. This leaves number three as the best choice. This is one of the most common progressions used in contemporary music. You will see this progression more than any other progression, especially in jazz standards.

1)	Dm:	I	IV7	#Imaj7
2)	Am:	IV	bVII7	IIIImaj7
3)	C:	II	V	I
4)	Bb:	III	VI7	IIImaj7
5)	F:	VI	II7	Vmaj7

Using uppercase roman numerals place a II under the Dm7, a V under the G7 and a I under the Cmaj7. To indicate the key place an uppercase letter before the II with a colon following the letter to indicate the tonal center.

A musical staff in treble clef with a common time signature. Above the staff, three measures are marked with chords: Dm7, G7, and CMA7. Below the staff, Roman numerals are placed under each measure: C: II under Dm7, V under G7, and I under CMA7. The staff contains diagonal lines representing the chords.

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EXAMPLE 2

A musical staff in treble clef with four measures. Above the staff, the chords are labeled: CMA7, Dm7, Em7, and FMA7. Below the staff, the Roman numerals are labeled: I, II, III, and IV. The staff contains diagonal lines representing chords.

Using the above chord progression and the **Major** harmonized chord chart. The roman numerals I II III IV would be applied.

At first thought this progression can be either in the key of C major or F major based on the first or last chord. Upon further investigation we can see that major chords function as either a I and IV chord. C major is the only key with both C and F as major chords. The Dm7 is a II chord and the Em7 a III chord.

EXAMPLE 3

A musical staff in treble clef with four measures. Above the staff, the chords are labeled: CMA7, Am7, Dm7, and G7. Below the staff, the Roman numerals are labeled: I, VI, II, and V. The staff contains diagonal lines representing chords.

Using the above chord progression and the **Major** harmonized chord chart. The roman numerals I VI II V would be applied.

Here the G7 offers the best clue and it is functioning as a V chord to the Cmaj7 I chord. Am7 is the VI chord in the key of C and we see the old standby II V chords.

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Try these *Full Diatonic Major* chord progressions in various keys using the Major Harmonized Chord charts.

AMA7 F#M7 B M7 E7
E b MA7 C M7 F M7 B b7
A M7 D7 G MA7
C MA7 A M7 D M7 G7
C M7 F7 B b MA7
F MA7 G M7 A M7 B b MA7

Try these *Full Diatonic Minor* chord progressions in various keys using the Minor Harmonized Chord charts.

D M7 b5 G7 C M7
C M7 E b MA7 A b MA7 G7
C M7 F M7 A b MA7 G7
F# M7 b5 B7 E M7
F M7 A b MA7 D b MA7 C7
B M7 b5 E7 A M7

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Songs Examples

See my book **The Advanced Guide to Chord Progressions for Guitar - Vol I** for the most common *Full Diatonic* chord progressions with their analysis.

Lots of folk and children's songs as well as many rock and popular songs contain Full Diatonic progressions or sections and are a good place to practice your RMA.

Here are a few examples of jazz songs with full diatonic progressions. Many songs contain full diatonic sections. Full Diatonic is the most common harmonic principle.

All The Things Your Are	Starts off with VI II V I IV major of the key of the song
Tune Up	Various II V I progressions modulating thru descending major key centers a whole step apart
Blue Bossa	Starts full diatonic minor and modulates to Full Diatonic major 1/2 step higher than starting key center
Fly Me To The Moon	measures 1-4 VI II V I
Sway	All of the A or first section of the song
Moondance	First section Full Diatonic Dorian
So What	Full Diatonic Dorian with half step modulation to Dorian
Autumn Leaves	measures 1-4 II V I IV major measures 1-4 II V I minor

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