

JAZZ HARMONY

Objectives of harmonic analysis

- to understand how a chord progression *functions*
 - how chords interact
- to recognise important *harmonic building blocks*
 - leads to simplification/reduction of a chord progression
 - aids the process of improvisation (including scale choice)

Diatonic Harmony: Major Key

Study and listen to the diatonic chords formed from the major scale

- **I Δ** intuitively sounds to be the 'home' chord
 - Is called the **tonic**
- the **V7** chord reinforces the tonic and establishes a 'tonal system'
 - **V7** has the greatest tendency to 'want to go somewhere'
 - called the **dominant**
 - V7 \rightarrow I Δ creates a perfect cadence

The strength of V7 \rightarrow I Δ progression is due to two factors

- P5 downwards **root motion** (and melodic movement) is strongest
 - Importance of P5 in the harmonic series
- **internal voice** movements
 - 'leading note rises' in classical speak
 - but in jazz can remain static to become I Δ hence **3 \rightarrow 7**
 - **7 \rightarrow 3**

Diagram illustrating the G7-C-G7-C Δ progression. The top staff shows the treble clef and the bottom staff shows the bass clef. The chords are labeled above the staves: G7, C, G7, and C Δ . The notes are represented by circles on the staff lines.

Now extend the progression by preceding with another diatonic chord

- add IIm7 because it is a P5 above V7
- again, consider the internal voice movements
 - third (of IIm7) remains to become the seventh of V7 **3 \rightarrow 7**
 - seventh (of IIm7) falls down to become third of V7 **7 \rightarrow 3**
 - try delaying this part of the voice movement to gauge its strength

Dm7
G7
C Δ
C6

IIIm7
V7
I Δ
I6

The complete unit is referred to as a **'two five one'**

- **IIIm7 V7 I Δ**
- It is a very important *harmonic building block* in jazz ('75% of all chords')
- sometimes referred to as a *cadence* or *double cadence*
- it contains two occurrences of 'harmonic pull'
 - harmonic pull created by 3s and 7s
 - 3 and 7 are considered the essential notes in a chord
 - 5 adds colour but does not change the pull
- usually there are two bars of I Δ for balance (i.e. to make a 4 bar unit)
 - often the 2nd bar of I Δ is replaced by another chord (e.g. VIIm7)
 - note that in the above example the second bar of I Δ becomes C6
- IIIm7 to V7 will often occur without resolution to I Δ (a trait of bebop)
- V7 to I Δ will often occur without the preceding IIIm7 chord

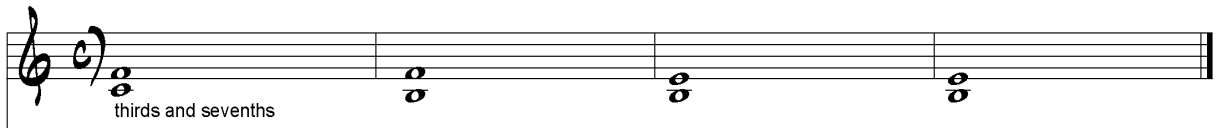
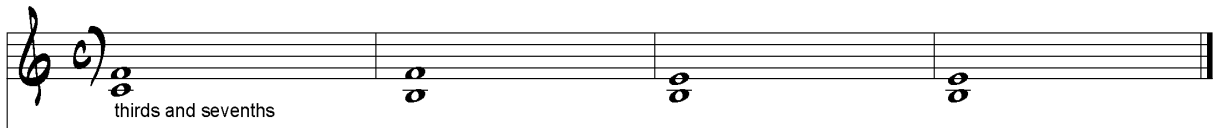
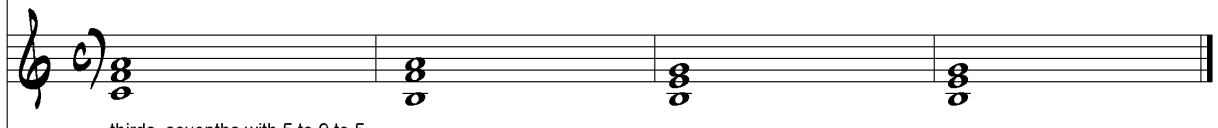
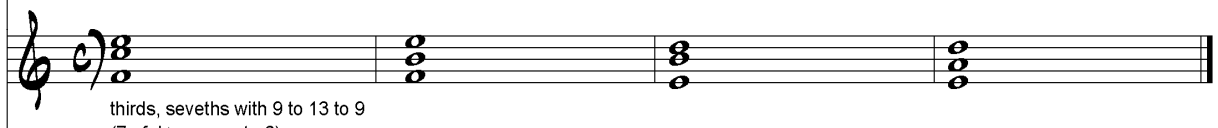
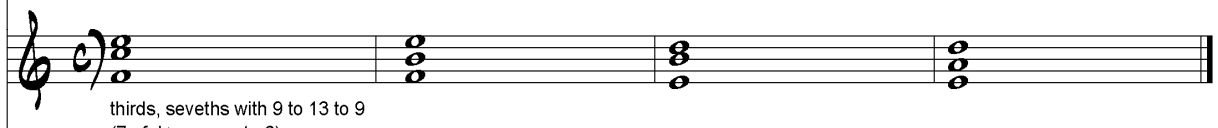
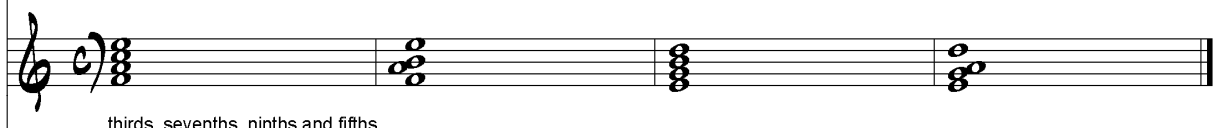

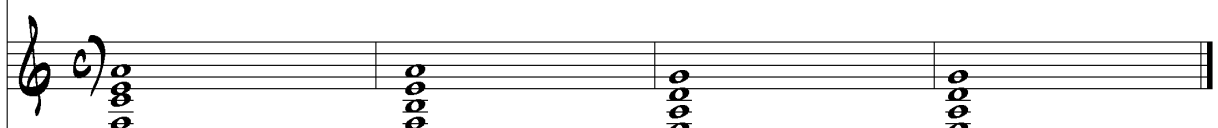
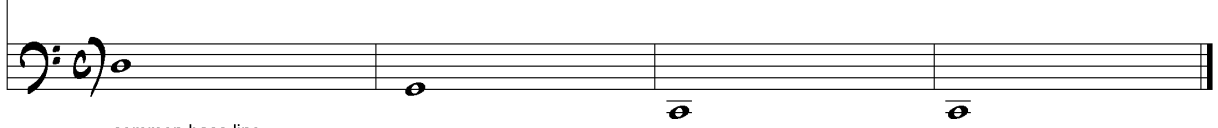
The voicings (layout of the notes) shown above could effectively be used as left hand rootless voicings by a pianist.

For three chords to form a true 'two five one' they must have roots which move downwards by P5 and chord qualities...

- Minor seventh
- Dominant seventh
- Major seventh (or sixth)

When writing chords (either as absolute chords or Roman numerals) always state the root **and chord quality!**

Voicings for Im7 V7 IΔ

Dm7	G7	CΔ
		
thirds and sevenths		
		
thirds and sevenths inverted		
		
thirds, sevenths with 5 to 9 to 5		
		
thirds, sevenths with 9 to 13 to 9 (7 of IΔ moves to 6)		
		
thirds, sevenths, ninths and fifths		
		
thirds, sevenths, ninths and fifths inverted		
		
more open voicings		
		
common bass line		

mike hall
sept 2006

Voice movements within IIm7 V7 IΔ

- when the root movement is downwards by P5 the 3rds move to 7ths and 7ths move to 3rds within successive chord voicings
 - 7 always drops a semitone to 3
 - 3 stays on the same note to become 7
- 5th and 9th have similar movements

**Voice movements:
major key**

IIm7	V7	IΔ
3	7	3
7	3	7 (6)
5	9	5
9	(5) 13	9

Minor key

- where the target chord is in a minor tonality we need to prepare the listener's ear during the cadence by:
 - flattening the 5 of the IIm7 chord (hence the II chord in a minor tonality is IIm7b5 or Ø (half diminished))
AND
 - (adding then) flattening the 9 on the V7 chord
- these notes come from the harmonic minor scale
- they increase the 'urgency' of the cadence (perceived need to resolve)
- hence **IIØ V7b9 ImΔ** (or Im6)
- e.g., DØ G7b9 CmΔ

**Voice movements:
minor key**

Ø	V7b9	ImΔ
3	7	3
7	3	7 (6)
b5	b9	5
9	b13 (#5)	9

DØ G7b9 Cm6

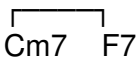
Exercise 1

Complete the following table of **two five one** progressions

IIm7 Ø	V7 V7b9	IΔ ImΔ
Cm7		BbΔ
F#m7		
Abm7		
		DbΔ
F#Ø	B7	
		Bm6
	F7b9	

Exercise 2

Identify all the IIm7 V7 IΔ, IIm7 V7 and V7 IΔ groupings

- label IIm7 V7 with a bracket 
- label root movements where a dominant 7th chord moves down by a P5 with an arrow e.g.,



Blues for Alice

FΔ	EØ A7b9	Dm7 G7	Cm7 F7
BbΔ	Bbm7 Eb7	Am7 D7	Abm7 Db7
Gm7	C7	FΔ7 D7	Gm7 C7

Increasing the ‘urgency’ of ‘dominant to tonic’ resolution

In a minor ‘two five one’ we flattened the fifth of the IIm7 chord and added a b9 to the V7 chord (when compared to a major 251).

- this...
 - prepares the ear for the oncoming minor tonality
 - increases the urgency of the resolution

The same approach (for the V7 chord at least) is used to increase the pull of the resolution into a major tonality.

The progression becomes Dm7 G7b9 CΔ

Dm7 G7 \flat 9 C $\overset{9}{6}$ or C Δ

It has become popular (more modern sounding) to do this using a V7 chord with a #9 (rather than a b9) and a #5

Hence a common sequence is Dm7 G7#5#9 C Δ 7

As this symbol is rather cumbersome it is often reduced to **alt** e.g., G7alt

Dm7 G7alt C $\overset{9}{6}$

**Voice movements:
major key with altered V**

IIIm7	V7alt	I Δ
3	7	3
7	3	7 (6)
5	#9	5
9	#5	9

Extending the cycle of fifths root movement through diatonic harmony

- continuing the P5 root motion would give:

(F#?)	B \emptyset	Em7	Am7	Dm7	G7	C Δ 7	F Δ 7	(Bb?)
(#VI?)	VII \emptyset	IIIIm7	VIIm7	IIIm7	V7	I Δ 7	IV Δ 7	(bVII?)
- all or parts of this are often used to form chord progressions

Exercise 3

Identify the key centres within the chord progressions below

- label these chords with Roman Numerals

All the things you are

Key:

Fm7	Bbm7	Eb7	AbΔ	
DbΔ	Dm7 G7	CΔ7	CΔ7	

Autumn Leaves

Key:

Cm7	F7	BbΔ	EbΔ	
AØ	D7b9	Gm	Gm	

Turnarounds

The IIm7 V7 IΔ starts 'away' from home and proceeds to move towards home... to resolve.

Take the 4 bar unit IIm7 V7 IΔ IΔ, cut it in half and swap the halves around...

IΔ IΔ IIm7 V7

This is a basic turnaround... the second essential *harmonic building block*

In **function** the turnaround starts 'at home' and finishes 'pointing back at home' (by way of a dominant chord). It is a way of harmonically 'treading water'... of going nowhere but creating some harmonic interest where there might otherwise be a static chord e.g., at the end of an eight bar section of melody.

There are many variations to the basic form (see appendix) but the most common form is probably

IΔ VIIm7 IIm7 V7

or

IΔ VI7 IIm7 V7

Dominant 7th Chord Harmony: The tritone substitution

Every dominant 7th chord contains a tritone interval

- three tones
- augmented 4th
- diminished 5th

It can be viewed as the 4th and 7th degrees of the major scale **of resolution**

This interval is unstable because (relative to scale of resolution)

- 4 wants to move to 3
- 7 (leading note) wants to move to the root

Thus the tritone **indicates** a tonality

- e.g., F (4th) and B (7th) indicate C major

As the tritone is a symmetrical interval we can consider reversing the functions of these notes

So now consider F as the 7th and B as the 4th
This indicates Gb major as the scale of resolution.
Therefore the dominant chord is Db7

G7	C	Db7	Gb
these notes 'indicate' C major		the same notes also 'indicate' Gb Major	

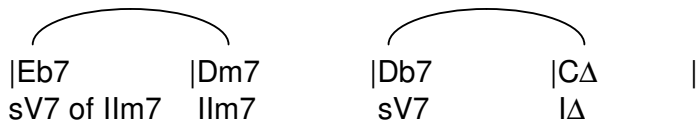
Dominant 7th chords a tritone apart are *essentially* the same

- they are referred to as **related dominants**
- can both resolve to the same chords
 - **tritone substitution**
- the resolution down a P5 is called a **real** V7 chord (cases covered so far)
- the resolution down a semitone is called a **substitute** V7 chord (or sV7)

e.g., real resolutions

A7 V7 of IIm7	Dm7 IIm7	G7 V7	CΔ IΔ	

e.g., substitute resolutions



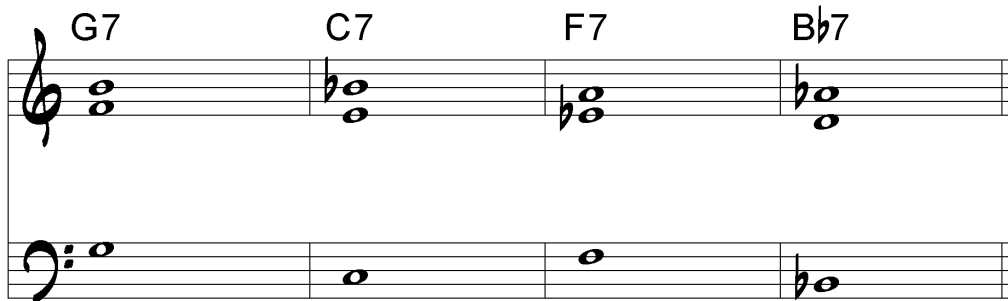
Exercise 4

Complete the table below

dominant chord: (a)	resolves to:	tritone pair 7/3 from (a) 3/7 from (b)		alternative dominant from this tritone (b)	which resolves to:
C7	FΔ	Bb	E	F#7	BΔ
Db7	GbΔ	B	F	G7	CΔ
D7		C	F#	Ab7	
	AbΔ	Db	G		
E7					
			A		

Dominants also resolve to other dominants

- dominant 7th chords frequently resolve to another dominant 7th chord a P5 below
- the 3rd of the first chord becomes the 7th of the target chord
- the 7th of the first chord becomes the 3rd of the target chord
- this cycle will continue all the way round the circle of fifths



The resolution of the dominant may be *direct* or *indirect*

Direct resolution occurs when the dominant moves immediately to the diatonic chord a P5 below

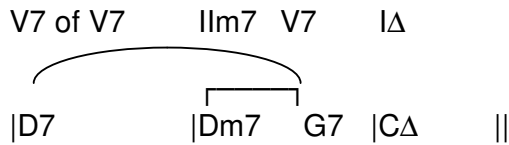
- this includes all cases considered so far

Indirect resolution occurs when the **target** chord is a dominant chord (V7) which is preceded by its related IIm7

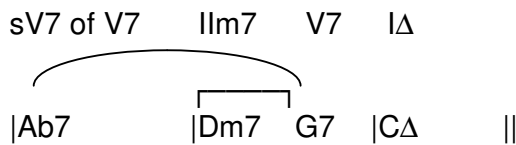
- the IIm7 chord is called the *interpolated* IIm7 (or inserted chord)

Remember it helps to identify IIm7 V7 pairings with a bracket e.g., $\overbrace{\text{Cm7 F7}}$

e.g., indirect resolution



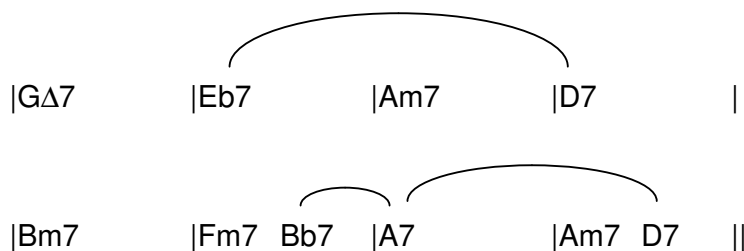
A *substitute* resolution that is *indirect* is also possible:



Exercise 5

Decide on the type of resolution shown by each arrow

- resolutions may be:
 - real and direct
 - real and indirect
 - substitute and direct
 - substitute and indirect
- label all chords with Roman numerals
- bracket all IIm7 V7 pairs



Some dominant 7th chords may move in ways other than these

- e.g., Bb7 to CΔ
- these are called *nonfunctional* dominant 7ths
- the tritone does not resolve in typical fashion

Nondiatonic Harmony

- this means bringing in chords from outside the scale (to introduce colour)
- we have already done this by use of tritone substitution

Chromatically altered diatonic chords

- chords which result from changing one note of a diatonically occurring chord (which could be major or minor)
- e.g.,
 - I7 is a chromatic alteration of IΔ (common in blues progressions)
 - #IVØ is a chromatic alteration of IVΔ7 (F#Ø is an altered FΔ) major
 - bIIΔ is a chromatic alteration of IIØ (DbΔ is an altered DØ) minor

Secondary dominant chords

- these are non-diatonic dominant 7th chords that resolve (directly or indirectly) down a P5 to any **diatonic** chord (other than IΔ or VIIØ)
- take each diatonic chord in a major key and consider the dominant chord that would resolve onto it
 - IΔ is excluded because V7 of IΔ is called a *primary* dominant
 - VIIØ is excluded because it is not a major or minor chord (unstable)

So in major key

- V7 of II m7 A7 to Dm7
- V7 of III m7 B7 to Em7
- V7 of IV Δ C7 to FΔ
- V7 of V7 D7 to G7
- V7 of VI m7 E7 to Am7

Exercise 6

Identify the secondary dominant chords:

- label them as V7 of xx
- use arrows to label root movements where a dominant 7th chord moves down by a P5

|CΔ |A7 |Dm7 |B7 |

|Em7 |C7 |FΔ7 |D7 |

|G7 |E7 |Am7 |G7 ||CΔ |

Extended dominants

- these are nondiatonic dominant 7th chords that resolve down a P5 to a secondary dominant or another extended dominant

e.g., bridge of *I got rhythm*

III7	VI7	(V7 of V7)			
E7	A7	D7	G7	CΔ	
(ext dom)	(ext dom)	(sec dom)	(pri dom)		

Notes

- in this example E7 and A7 are not secondary dominants because they do not resolve to a diatonic chord
- we need to use the symbols that mean the most to us
- E7 could be called V7 of V7 of V7 of V7!!! Does this help?

Diminished 7th Harmony

- a dim 7th chord can be inverted to form three other diminished 7th chords
- hence there are only three diminished 7th chords

C#°7 E°7 G°7 Bb°7 A7b9 or C#°7/A

- a dim 7th chord contains two tritones
 - each tritone *indicates two* dominant 7th chords
- Therefore a diminished 7th chord has four potential directions for resolution.

Diminished chords are usually used as 'joining' chords.

CΔ C#°7 Dm7 D#°7 C6

C Δ C^{o7} Dm7 G7

In the first example above the two diminished chords are acting as rootless dominant 7b9 chords...

C Δ |A7b9 |Dm7 |B7 |Em7 ||

(Note the substitution of Em7 for C6 to make this illustration)

C6 C Δ C Δ 9 Em7

The diminished chord in the second example cannot be thought of as a rootless dominant chord.

Modulation

- harmonic modulation means *change of key*

A chord progression establishes a particular key (major or minor) for an appropriate length of time and can then proceed to establish a different key.

- sometimes it is easier to consider that a brief modulation has taken place than to explain a chord progression in terms of 'obscure' Roman numerals
- this is especially true while improvising
- if a particular perception of a chord progression helps you then use it!

e.g., *I'll remember April*

- bars 3 and 4 could be considered a brief modulation into A minor

key G:	Am7 Im7	D7 V7	B \emptyset III \emptyset (key Am: II \emptyset)	E7 VI7 V7)	
	Am7 Im7	D7 V7	G Δ I Δ	G Δ	

Three common modulation techniques

Pivot chord modulation

- the chord at the point of key change has a recognisable function in the old and new keys
- also called a *dual function chord*

key C major			key D major			
I Δ	IIIm7	IIIIm7	IIIm7	IV Δ	V7	I Δ
		or IIIm7 in D				
C Δ	Dm7	Em7	F#m7	G Δ	A7sus	D Δ

Prepared modulation

- when any diatonic chord of the old key moves to the V7 (or $\overline{\text{IIIm7 V7}}$) of the new key

key C				key Db		key C		
I Δ	IIIm7	V7	I Δ	V7	I Δ	IIIm7	V7	I Δ
C Δ	Dm7	G7	C Δ	Ab7	Db Δ	Dm7	G7	C Δ

Unprepared modulation

- when any diatonic chord of the old key moves directly to the I chord of the new key

key C major				key Ab major			
I Δ	V7	I Δ	V7	I Δ	V7	I Δ	
C Δ	G7sus	C Δ	G7sus	Ab Δ	Eb7sus	Ab Δ	

Exercise 7

Identify where modulations have taken place
label the chords with Roman numerals

|C Δ Am7 |Dm7 G7 |C Δ Am7 |Dm7 G7 |

|C Δ Eb7 |Ab Δ B7 |E Δ G7 |C Δ ||

Common progressions and harmonic building blocks

'two five one' based progressions

IIm7	V7	IΔ	IΔ	diatonic
IIm7	bII7	IΔ	IΔ	chromatic
IIm7 V7	bVIIm7 bII7	IΔ	IΔ	chromatic
IIm7	V7	IΔ	IV	diatonic
IIm7	V7	IΔ	VI7	chromatic
IIØ	V7b9	ImΔ	ImΔ6	chromatic
IIØ	V7alt	IΔ	IΔ	chromatic
IIm7	V7alt	IΔ	IΔ	chromatic
II7	IIm7 V7	IΔ	IΔ	chromatic
VIIm7	IIm7	V7	IΔ	diatonic

turnaround based progressions

IΔ	IΔ	IIm7	V7	diatonic
IΔ	VIIm7	IIm7	V7	diatonic
IΔ	VI7	IIm7	V7	chromatic
IΔ	VI7	IIm7	V7	chromatic
IIIIm7	VI7	IIm7	V7	chromatic
IIIIm7	VI7alt	IIm7	V7alt	chromatic
IΔ	#I°7	IIm7	#II°7	chromatic
IΔ	IΔ	IVm7	bVII7	chromatic
IΔ	bIII7	bIIΔ	bII7	chromatic

Blues progressions

Basic (soul/gospel) Blues

C7 C7 C7 C7 F7 F7 C7 C7 G7 F7 C7 C7

Modern/Mainstream Blues

C7 F7 C7 C7 F7 F7 C7 A7 Dm7 G7 C7 A7 Dm7 G7
 C7 F7 C7 C7 F7 F#° C7/G A7 Dm7 G7 C7 A7 Dm7 G7
 C7 F7 C7 C7alt F7 F7 C7 B7 Bb7 A7 Dm7 G7 C7 A7 Dm7 G7

Decending ('Parker') Blues

CΔ BØ E7 Am7 D7 Gm7 C7 F7 Fm7 Bb7
 Em7 A7 Eb7 Ab7 Dm7 G7 C7 Eb7 AbΔ Db7