Quartal harmony

Parallel movement, Dorian mode

Three-note forms. The numbers by the scale degree describe the subsequent movement of the bass note in semitones.

	C	D	E	F	G	A	B
	G	A	B	C	D	E	F
Root	D	E	F	G	A	B	C
Degree	I (+2)	II (+1)	III (+2)	IV (+2)	V (+2)	VI (+1)	VII (+2)
Int.	4,4	4,4	*T,4*	4,4	4,4	4,4	*4,T*

Here, there are five fourth pairs and two shapes containing tritones at III and VII. Both of these have some dominant functionality, but III more so; at III, the additional note provides an implied 13 chord, or an implied #9. At VII, the additional note only (partly) functions in the primary dominant, and is heavily dissonant against its tritone partner.

Four-note diatonic fourths, stacked from root (in bold)

F	G	A	B	C	D	E
C	D	E	F	G	A	B
G	A	B	C	D	E	F
D	**E**	**F**	**G**	**A**	**B**	**C**

Four-note diatonic fourths for all keys expressed in intervals from scale degrees

I	II	III	IV	V	VI	VII
4,4,4	4,4,4	T,4,4	4,4,T	4,4,4	4,4,4	4,T,4

So the chords from the I, II, V and VI in Dorian are pure stacks of fourths. In terms of other modes these stacks occur as follows:

Ionian	*(II)*	III	VI	VII	*(II is very dissonant in major tonality)*
Phrygian:	I	IV	V	VII	
Lydian:	III	IV	VI	VII	

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Four-note diatonic chords, 4,4,3, stacked from root

E	F	G	A	B	C	D
C	D	E	F	G	A	B
G	A	B	C	D	E	F
D	**E**	**F**	**G**	**A**	**B**	**C**
C/D	Dm/E	Em/F	F/G	G/A	Am/B	Bo/C

Dorian: four-note diatonic chords, two fourths and a third, for all keys

I	II	III	IV	V	VI	VII
4,4,3	4,4,b3	T,4,b3	4,4,3	4,4,3	4,4,b3	4,T,b3

Here the least dissonant structures occur at I, IV and V. ($x^{9}sus^{no5}$)

III can also be thought of as a dominant voicing for IV^{13} (in this case G^{13}).

VII could be described as "ma9 sus no5"

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Melodic minor quartal forms

First, "pure fourths" (by scale degree, not absolute intervals) in A melodic minor.

C	D	E	F#	G#	A	B
G#	A	B	C	D	E	F#
D	E	F#	G#	A	B	C
A	**B**	**C**	**D**	**E**	**F#**	**G#**
I	II	III	IV	V	VI	VII

The most common usages for the melodic minor scale in jazz are to provide context for two chord shapes: the 9 #11 chord, based on the IV, and the altered dominant, based on the VII. Below I provide the intervallic analysis for each of these mode of the melodic minor scale, where the scale degrees are taken from the root note of the generated dominant chord.

R refers in each case to the apparent root, defined by the scale degree. Again, alterations are in semitones.

9 #11	T,3,T	4,4,T	4,4,4	3,T,4	4,T,3	4,4,4	T,4,4
	*	r7^{sus} add3	pure	r7 #9	**	pure	(r+2)13
	I (+2)	**II** (+2)	**III** (+2)	**IV** (+1)	**V** (+2)	**VI** (+1)	**VII** (+2)
alt.	3,T,4	4,T,3	4,4,4	T,4,4	T,3,T	4,4,T	4,4,4
	r7 #9	**	pure	(r+2)13	*	r7^{sus} add3	pure
	I (+1)	**II** (+2)	**III** (+1)	**IV** (+2)	**V** (+2)	**VI** (+2)	**VII** (+2)

* This chord is ambiguous, because it contains two tritones, each of which can be active. The root can be thought of as r, or the tritone substitution of r, to give two 7 b5 chords. This considers the upper degrees of the chord as the active tritone. Alternatively, the active tritone can contain the note r, where the implied root would be either (r+2) or T(r+2). From the A melodic minor scale, the options for this structure are

1:	D7 b5	Ab7 b5
2:	E9 #5	Bb9 #5

** It is hard to see what this structure should be called. The tritone can't really be used as an implied dominant, and none of the notes it contains can be considered a functional root.

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