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Harmonic Alchemy: Mining For Precious Chords

by Guy Pople

Introduction

Every piece of music starts in a key. Understanding how a key can be made to reveal its chordal treasure is invaluable knowledge from the perspective of composition, improvisation and harmonic analysis.

Preparing The Ground

Let's start by way of choosing a key and fleshing out some essential data into handy tables. We are going to begin our excavations in the relative keys of G Major and E Minor. These scales are spelled as follows:

G Major = G A B C D E F#
E Minor = E F# G A B C D

Here are their inversions or modes:

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

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

Here are the modes with their E Harmonic Minor (E F# G A B C D#) adjustment:

E Harmonic Minor
E Aeolian (sharpen its 7th)
F# Locrian (sharpen its 6th)
G Ionian (sharpen its 5th)
A Dorian (sharpen its 4th)
B Phrygian (sharpen its 3rd)
C Lydian (sharpen its 2nd)
D Mixolydian (sharpen its 1st)

Here are the modes with their E Melodic Minor (E F# G A B C# D#) adjustments:

E Melodic Minor

E Aeolian (sharpen its 6th and 7th)

F# Locrian (sharpen its 5th and 6th)

G Ionian (sharpen its 4th and 5th)

A Dorian (sharpen its 3rd and 4th)

B Phrygian (sharpen its 2nd and 3rd)

C Lydian (sharpen its 1st and 2nd)

D Mixolydian (sharpen its 7th and 1st)

Extracting Triads

Now let's sharpen that spade and break some earth by extracting a triad from each mode in order to produce the key's chord scales.

G Major	TRIADS	Minor	TRIADS
G Ionian	G B D	E Aeolian	E G B
A Dorian	A C E	F# Locrian	F# A C
B Phrygian	B D F#	G Ionian	G B D
C Lydian	C E G	A Dorian	A C E
D Mixolydian	D F# A	B Phrygian	B D F#
E Aeolian	E G B	C Lydian	C E G
F# Locrian	F# A C	D Mixolydian	D F# A

The triad chord scale of each is as follows:

- * G, Am, Bm, C, D, Em, F#mb5
- * Em, F#mb5, G, Am, Bm, C, D

E Harmonic Minor	TRIADS
E Aeolian (sharpen its 7th)	E G B
F# Locrian (sharpen its 6th)	F# A C
G Ionian (sharpen its 5th)	G B D#
A Dorian (sharpen its 4th)	A C E
B Phrygian (sharpen its 3rd)	B D# F#
C Lydian (sharpen its 2nd)	C E G
D Mixolydian (sharpen its 1st)	D# F# A

The resultant chord scale is as follows:

- * Em, F#m, Gmaj#5, Am, B, C, D#mb5

Notice how the Harmonic Minor adjustment causes the

- * G to become a G augmented
- * Bm to become a B major
- * D to become a D# diminished

E Melodic Minor	TRIADS
E Aeolian (sharpen its 6th and 7th)	E G B
F# Locrian (sharpen its 5th and 6th)	F# A C#
G Ionian (sharpen its 4th and 5th)	G B D#
A Dorian (sharpen its 3rd and 4th)	A C# E
B Phrygian (sharpen its 2nd and 3rd)	B D# F#
C Lydian (sharpen its 1st and 2nd)	C# E G
D Mixolydian (sharpen its 7th and 1st)	D# F# A

The resultant chord scale is as follows:

* Em, F#m, Gmaj#5, A, B, C#mb5, D#mb5

Notice how the Melodic Minor adjustments cause the

- * F#mb5 to become F#m
- * Am to become A major
- * C to become C# diminished

If we combine all the triads together we end up with the following chords, all associated with the original keys:

* G, Gaug, Am, A, Bm, B, C, C#dim, D, D#dim, Em, F#mb5, F#m

Mining For 7ths

By extending each triad with its diatonic seventh we get the following chords:

G Major	TRIADS	SEVENTHS
G Ionian	G B D	G B D F#
A Dorian	A C E	A C E G
B Phrygian	B D F#	B D F# A
C Lydian	C E G	C E G B
D Mixolydian	D F# A	D F# A C
E Aeolian	E G B	E G B D
F# Locrian	F# A C	F# A C E

E Minor	TRIADS	SEVENTHS
E Aeolian	E G B	E G B D
F# Locrian	F# A C	F# A C E
G Ionian	G B D	G B D F#
A Dorian	A C E	A C E G
B Phrygian	B D F#	B D F# A
C Lydian	C E G	C E G B
D Mixolydian	D F# A	D F# A C

Here are the resultant seventh chord scales:

- * Gmaj7, Am7, Bm7, Cmaj7, Ddom7, Em7, F#m7b5
- * Em7, F#7mb5, Gmaj7, Am7, Bm7, Cmaj7, Ddom7

E Harmonic Minor	TRIADS	SEVENTHS
E Aeolian (# 7th)	E G B	E G B D#
F# Locrian (# 6th)	F# A C	F# A C E
G Ionian (# 5th)	G B D#	G B D# F#
A Dorian (# 4th)	A C E	A C E G
B Phrygian (# 3rd)	B D# F#	B D# F# A
C Lydian (# 2nd)	C E G	C E G B
D Mixolydian (# 1st)	D# F# A	D F# A C

The resultant chord scale is as follows:

- * Em(maj7), F#7mb5, Gmaj7#5, Am7, Bdom7, Cmaj7, D#dim7

Notice how the Harmonic Minor adjustment cause the

- * Em7 to become an Em(maj7)
- * Gmaj7 to become a Gmaj7#5
- * Bm7 to become a B7
- * D7 to become a D#dim7

E Melodic Minor	TRIADS	SEVENTHS
E Aeolian (# 6th ,7th)	E G B	E G B D#
F# Locrian (# 5th ,6th)	F# A C#	F# A C# E
G Ionian (# 4th ,5th)	G B D#	G B D# F#
A Dorian (# 3rd ,4th)	A C# E	A C# E G
B Phrygian (# 2nd ,3rd)	B D# F#	B D# F# A
C Lydian (# 1st ,2nd)	C# E G	C# E G B
D Mixolydian (# 7th ,1st)	D# F# A	D F# A C#

The resultant chord scale is as follows:

- * Em(maj7), F#m7, Gmaj7#5, Adom7, Bdom7, C#m7b5, D#m7b5

Notice how the Melodic Minor adjustments cause the

- * F#m7b5 to become an F#m7
- * Am7 to become an A7
- * Cmaj7 to become a C#m7b5
- * D#dim7 to become a D#m7b5

If we combine all the sevenths together we end up with the following chords, all of them common to the original keys.

- * Gmaj7, Gmaj7#5, Am7, A7, Bm7, B7, Cmaj7, C#m7b5, Ddom7, D# dim7, Em7, Em(maj7) F#m7b5

And this is in addition to the triads we mined earlier i.e.

- * G, Gauq, Am, A, Bm, B, C, C#dim, D, D#dim, Em, F#mb5

Notice how the key's chords are taking shape. By systematically adding more intervals to the triads so more chord scales emerge.

Mining Unlimited

Now it's time for me to leave you the spade and a job list:

1. Continue the system above but with the 6th, 9th, 11th and 13th intervals of each mode.
2. Try adding multiple intervals e.g. the 6th and 9th or the 7th and 11th from each mode. At this point you can try any combination but be sure to apply the formulae across all modes in order to get the relevant chord scale.
3. Try suspending the 3rd of each triad with 2nd or 4th of each mode; likewise attempt to suspend all 5ths with 6ths.
4. Although the CAGED system will help with generating shapes, I recommend you attempt to build some chords from scratch. This will yield unique variations and improve your understanding of the fretboard.

Conclusion

You should now have an inkling of just how much chordal information can be extracted from a single key. Whilst the system I have outlined produces vast amounts of data, there is much more to be found with a little research and lateral thinking.

Read the standard version of this column online at: <https://www.guitar9.com/columnist497.html>

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