

The 'harmonic' and 'melodic' minor scales.

Before we tackle these, a little background information would help understanding them, where they come from and why they exist at all.

From the 17th to 19th centuries, music was very structured and bound by pretty strict rules, guidelines and methods. One of these was the use of something called a 'cadence'. Think of a cadence as a punctuation mark in music. There are four types of cadence:

- perfect cadence
- imperfect cadence
- interrupted cadence
- plagal cadence [also known as an ecclesiastic or church cadence]

Right now I'll not go into how, why and where these are used as it is a large topic in it's own right [and only useful to folks formally studying music or writing in Baroque, Classical or Romantic style]. For this topic however, we are interested in the 'perfect' cadence [a chord progression of chord V to I]. Think of a perfect cadence as a 'full stop' at the end of a section of music [also at the end of the entire piece].

Not only does a V to I chord change produce a perfect cadence, but V must be major triad [better still, a dominant 7 chord].

If you cast your mind back to the chords generated by a major scale you'd notice that chord V7 is a dominant 7. So in the key of G major chord V7 is D7, and so a perfect cadence would be D7 to G.

So let's look at this with respect to a minor key.

The chords generated by the key of Em are Em, F#m5, G, Am, Bm, C, D.

It seems that we have a problem because chord V is a minor triad [in this case Bm].

The chord progression V to I in the key of Em is Bm to Em, and it just doesn't sound very 'final'.

Not good for something that wants to behave like a 'full stop' in a musical sense.

The solution is to modify chord V from being minor to major [or from a minor 7 to a dominant 7] when executing a perfect cadence in a minor key.

So in the key of Em, the chord progression during a perfect cadence which would have been Bm to Em, is modified to become B to Em [or better still B7 to Em].

And this sounds nice and final like a good musical full-stop should.

Now we have a new problem, the scale don't fit with the modified V chord.

Having solved the problem of making the perfect cadence in a minor key sound 'final', we have created a new one.

Example in the key of Em:

The scale of Em is: E, F#, G, A, B, C, D

The modified chord V7 during a perfect cadence is now B7.

The notes that make the chord of B7 are: B, D#, F#, A

The new problem as we can see is centred around the note D.

In the Em scale we have the note D

In the modified V7 chord we have the note D#

Clearly, when the two notes D and D# sound together this will sound seriously nasty!

Ouch!!

The solution therefore is to modify the scale to fit the modified chord.

Pointer: this modification only occurs for the duration of the of the cadence – when the minor chord V is modified – and not for the whole piece of music.

In order to make chord V major, the 3rd must be changed from minor to major.

The 3rd of chord V is note VII in the minor scale.

Back to our example in the key of Em:

The scale of Em is: E, F#, G, A, B, C, D

The major chord V7 is B7: B, D#, F#, A

Altering note VII of the Em scale to match the chord means the D in the scale becomes D#.

This of course gives birth to a new scale that contains the notes: E, F#, G, A, B, C, D#

The spelling of this new scale is:

Tonic

major 2nd

minor 3rd

perfect 4th

perfect 5th

minor 6th

major 7th < here is the modified note: The major 3rd of V7, now the major 7th of the modified minor scale.

This modified scale has a name and is called the 'harmonic minor' scale.

it sounds very cool too

This is the scale that you'll often hear the "neo-classical shredders" like Yngwie Malmsteen tearing up and down as fast as they can over chord V of a minor key that has been modified into a major triad.

So, let's get back to the 1700's in the key of Em at a perfect cadence.

If you work out the intervals - not with respect to the tonic, but between each note - you'll notice that the interval between the 6th and 7th degrees of the harmonic minor scale is pretty large.

It's 1 ½ semi-tones.

In this case the interval is an 'augmented major 2nd' - C to D# [not a minor 3rd - C to Eb] which happens to 'sound' just like a minor 3rd. This is all well and good for us musicians but there was a problem. Choirs hated singing this interval especially with respect to melodies in the ascending direction. It really is pretty tricky to visualise and then sing this interval.

Also, this large interval is particularly angular and awkward sounding when it comes to creating nice melody lines and becomes even more cumbersome when using 'ornamentation' [things like 'trills' and 'turns'] – which was all the rage in the 1700's.

The solution was to reduce the size of this interval by raising the minor 6th of the scale to a major 6th [during the perfect cadence over chord V7] and only in the ascending direction.

Now we have yet another newly modified scale spelt:

Tonic

major 2nd

minor 3rd

perfect 4th

perfect 5th

major 6th < our new modified note

major 7th

this scale is called the 'melodic minor ascending' scale, and sounds very cool too.

So using E as the tonic we get: E, F#, G, A, B, C#, D# [and is used over the chord of B7 [V7] in the key of Em] during a perfect cadence.

In the descending direction, the 'melodic minor descending' scale is the same as the natural [relative] minor.

These two scales and the perfect cadence are the tips of huge and incredibly useful / interesting icebergs.

In other more advanced tutorials we can unlock some of the potential of these two scales in an applied sense.

But for now, knowing that these modified scales exist, knowing how and why they exist, and knowing that they are born out of the minor scale, is good enough if for no other reason than to de-mystify them.

Tip: In the early stages of playing and learning the neck, concentrate more on the regular major and minor scales. As you become a more advanced player I'm sure that you'll begin to get into using these scales in anger.