

## Determining modes and modal substitutions

An article by:

Dr Christopher Smith -- TTU School of Music  
christopher.smith@ttu.edu  
webpages.acs.ttu.edu/chrissemi  
www.geocities.com/coyotebanjo

Irish traditional dance melodies are primarily based on a "vocabulary" that takes its distinctive sound from the use of four "modes": collections of pitches which span the octave but have different relationships, and therefore different sounds, than the familiar major/minor scales. This article explains modes, and discusses harmonic implications, especially in the issue of chord substitutions.

Certain modes have certain cultural associations, but that is only because of our own background as listeners: major sounds "happy" to us and minor "sad" because we have a bunch of associations with specific pieces or styles of music which use those connotations. Other cultures have other associations.

However, to the Western ear, the following are some common associations with the various modes. Note that these associations are not necessarily emotional (though medieval theorists loved to argue that these things were objective, not subjective), but rather associations with idioms or geographical styles.

**Ionian** (the familiar "doh reh mi" scale):

1 2 3 4 5 6 7

Western, diatonic, classical music, American folk songs (some)

**Dorian:**

1 2 b3 4 5 6 b7

Medieval music, plainchant, American old-timey music, lots of Irish repertoire (note that Dorian is the commonest "minor mode" employed in these last two)

**Phrygian:**

1 b2 b3 4 5 b6 b7

Spanish music and flamenco

**Lydian:**

1 2 3 #4 5 6 7

Lots of Bulgarian and South European music; new classical music

**Mixolydian:**

1 2 3 4 5 6 b7

Irish and American old-timey repertoire, Scots music (especially pipe music), medieval music

**Aeolian**

1 2 b3 4 5 b6 b7

Euro-American classical music (commonest "minor mode"), some American folksongs, some English folksongs

**Locrian**

1 b2 b3 4 b5 b6 b7

Highly dissonant, not widely used in anything except new classical music.

## Understanding the mode of a given tune by ear or from notation

There are several different factors at play here, and these factors interact differently in different tunes. So you need to use deductive reasoning to figure out how things are interacting in a particular tune.

Also, we need to beware of being too literal or rigid in applying Western Classical terminology and notational tools to ITM. They can provide useful insights and organizing principles, but we need to realize that ITM is only in selective ways related to the Classical tradition; not all of these "foreign" tools and concepts work consistently.

1) Notation: even if the notation you see for a tune has a specific number of sharps or flats indicated in the key signature (say, for E Dorian, 2 sharps), that does not necessarily mean that the tune stays rigidly in E Dorian, or that the tune necessarily conforms to E Dorian in all particulars. Here are 2 scenarios in which you might see a specific key signature (say, 2 sharps) and nevertheless find that "non-diatonic" chords (eg, chords from outside that pitch set) work better.

\* Look at the melody itself. Using the example of E Dorian, and leaving aside whatever is indicated in the key signature, does the tune actually include a C# or F#? Does it, by contrast, include a C natural or F natural? The person who notated the tune has to make a choice about what key signature is required, but this can be highly subjective. Perhaps the tune actually includes only a C natural? or a C natural in one place and a C sharp in another? \* again, look at the tune. Does it in fact include ANY kind of C (eg, either C# or C natural)? Very often Irish tunes are written in what a Western theorist would call "gapped modes:" modes that contain fewer than 7 notes. Perhaps the tune doesn't use C natural OR C#; hence, the tune could be said to be in either

**E Dorian:**

**E-F#-G-A-B- (C#) -D -E**

1 2 b3 4 5 6 b7 1

or

**E Aeolian:**

**E-F#-G-A-B- (C natural) -D -E**

1 2 b3 4 5 b6 b7 1

In this case, you can make a subjective choice: take advantage of the "missing" 6th degree, and use either the chords from E Dorian or those from E Aeolian. Or mix and match them. Or use "E Dorian chords" in one repeat of the tune, and "E Aeolian chords" in another repeat. \* Even if the tune unequivocally uses C#'s in the melody, you can still make a C major triad (C-E-G) work as a substitution for the Em triad. This is because C major (C-E-G) shares 2 of 3 notes in common with Em (E-G-B). Generally speaking, any chord which shares 2 notes of 3 with another chord can be used interchangeably with that other chord. Even if you're using A major triads (A-C#-E), drawn from the E Dorian chords, at other points in the tune, the ear can accept the appearance of the C# (in the A triad) in one place, and the C natural (in the C triad) in another. The point is to choose chords which fit the particular phrases they are accompanying. So if you have the melody phrase B-e-e-d where the B and the e are the important, accented notes, you can harmonize that phrase with Em (E-G-B), but you can also get away with substituting the bVI major chord (C-E-G), because both contain the note e, and because Em and C major share 2 of 3 notes.

You can actually discover many other substitutions that function for combinations of the above reasons. In E Dorian, for example, the following substitutions can work--note, however, that just

because they CAN work does not necessarily emanate that they are especially artful or musical in all circumstances:

**E Dorian:**

<b>Em</b>	<b>F#m</b>	<b>Gmaj</b>	<b>Amaj</b>	<b>Bm</b>	<b>C#dim</b>	<b>Dmaj</b>	<b>Em</b>
E-G-B	F#-A-C#	G-B-D	A-C#-E	B-D-F#	C#-E-G	D-F#-A	E-G-B
i min	ii min	bIII	IV	v min	vi dim	bVII	i min

Available substitutions:

- i min <-> bIII (Em) (Gmaj)
- bIII <-> v min (Gmaj) (Bm)
- ii min <-> bVII (F#m) (Dmaj)
- ii min <-> IV (F#m) (Amaj)
- etc

All modes, and all chords built on those modes, will have similar available substitutions. By figuring out which chords in a given "family" share 2 of 3 notes, you can discover many new combinations of chord progressions and substitutions. These can provide new ideas and new chordal colors, as well as new basslines and harmonization possibilities.

Try figuring out all the chord qualities (I-II-III-IV-V-VI-VII) for each of the four Celtic modes (Ionian, Mixolydian, Dorian, Aeolian), and then figuring out the patterns of substitution in each mode. Realize that the relationships between chords in a particular mode will be the same, even if the tonic note/tonal center change (eg: the I-thru-VII chord qualities, and available substitutions, will be the same in E Dorian, D Dorian, A Dorian, and so on).

Be aware, however, that not all melody players appreciate this kind of chord substitution (which is a prized skill in jazz). So you'll want to be sensitive to the preferences of the melody players who you're accompanying.