Functional Music Theory[1]

In a Nutshell

Useful Tables for understanding Notes, Chords, Modes, Scales, and Keys

"All the Music Theory Fit to Print!" [2]

Extremely Beneficial Information for Songwriting, Jamming, Music Comprehension and Enjoyment,

Compressed Into Difficult-to-Understand Tables

O God, Music Theory could be bounded in a nutshell and make me a king of infinite space, were it not that it gives me bad dreams.
--Hamlet in *Hamlet Act 2 Scene 2*, by William Shakespeare

Tucker Whitney - MMXXV

1 *western* music theory, 12-tone equal-temperament, etc.
2 this is factually inaccurate

Modes

Major (Ionian)

Numeral	Mode	Different Notes	Chords	Function
I	Ionian	~	Δ (9,11,13)	Tonic
ii	Dorian	b3,b7	- (9,11,13)	Supertonic
iii	Phrygian	b2,b3,b6,b7	- (b9,11,b13)	Mediant
IV	Lydian	#4	Δ (9,#11,13)	Subdominant
V	Mixolydian	b7	7 (9,11,13)	Dominant
vi	Aeolian	b3,b6,b7	- (9,11,b13)	Submediant
vii	Locrian	b2,b3,b5,b6,b7	Ø / -7b5 (b9,11,b13)	Leading Tone

Instructions:

Pick a Key, e.g. C Major. Each row of the table corresponds to that note of the Major/Ionian scale. Play the normal C-Major scale on your instrument. Now you can use the above table to see:

- **What chord to play from each note of the key:** (These are called the **diatonic** chords)
  - C Major (Maj 7th i.e. Δ)
  - d minor (-7th)
  - e minor (-7th)
  - F Major (-7th)
  - G Major (dominant 7th)
  - a minor (-7th)
  - b half-diminished (-7b5 i.e. Ø)
- **What extensions to use in those chords** (e.g. the *iii* takes a *b9*, a *natural 11th* and a *#13*)
- **What notes/scales/modes to play from each note of the scale**. E.g. play the *Dorian* scale/mode from the *ii* (i.e. from the second note of the *C-scale*, which is *D*)
- **Other info such as the relative minor key** (it's just the *vi*, i.e. *a-minor*)
- **Any chord progression you want**. For example:
  - *ii V I* = d G C (d-7, G7, CΔ)
  - *I IV V* = C F G (CΔ FΔ G7*)*
  - *I V vi IV* = C G a F (CΔ G7 a-7 FΔ*)*
  - *I vi ii V* = C a d G (CΔ a-7 d-7 G) etc.

Minor Modes

These **Minor Mode** tables can be used just like the **Major (Ionian)** table, but to play in any of the following variations of minor keys.

Natural Minor (Aeolian)

*The same as the **Major (Ionian)** but reordered from the vi's perspective, so the relative minor (vi) becomes the i.*

Numeral	Mode	Different Notes	Chords
i	Aeolian	b3,b6,b7	- (9,11,b13)
ii	Locrian	b2,b3,b5,b6,b7	Ø / -7b5 (b9,11,b13)
III	Ionian	~	Δ (9,11,13)
iv	Dorian	b3,b7	- (9,11,13)
v	Phrygian	b2,b3,b6,b7	- (b9,11,b13)
VI	Lydian	#4	Δ (9,#11,13)
VII	Mixolydian	b7	7 (9,11,13)

Harmonic Minor

*Like **Natural Minor**, but with a **natural 7** instead of a **flat 7**.*

Numeral	Mode	Different Notes	Chords
i	Aeolian ♮7	b3,b6	-Δ (9,11,b13)
ii	Locrian ♮6	b2,b3,b5,b7	Ø / -7b5 (b9,11,13)
III+	Ionian Augmented	#5	Δ#5 (9,11,13)
iv	Dorian #4	b3,#4,b7	- (9,#11,13)
V	Phrygian Dominant	b2,b6,b7	7 (b9,11,b13)
VI	Lydian #9	#2	Δ (#9,11,13)
viio	Ultra Locrian bb7	b2,b3,b4,b5,b6,bb7	7o (b9,b11,b13)

Melodic Minor

*Like Harmonic Minor, but with a **natural 6** instead of a **flat 6**.*

Numeral	Different Notes	Chords
i	b3	-Δ (9,11,13)
ii	b2,b3,b7	- (b9,11,13)
III+	#4,#5	Δ#5 (9,#11,13)
IV	#4,b7	7 (9,#11,13)
V	b6,b7	7 (9,11,b13)
vi	b3,b5,b6,b7	Ø / -7b5 (9,11,b13)
vii	b2,b3,b4,b5,b6,b7	Ø / -7b5 (b9,b11,b13)

Going The Extra Mile

There are some very powerful, non-obvious things that can be done using the above tables. Here's a non-exhaustive list:

Play in another key besides the *I* (or *i* minor*)* from any table

For example, using the Major/Ionian table, you could decide to play in the key of the *ii*. You'd be playing in *dorian* for whatever note you chose. To keep it simple, let's say you chose to play in d Dorian. All you need to do is use the same notes/scales/chords from the table, but permute (rearrange) the rows of the table in your head (or on paper). So you make the *ii* row become *i* (because it stays a minor chord/scale. Dorian is a type of minor key). Then *iii* becomes *ii*, IV becomes III, V becomes IV, etc. Try writing out the table yourself, if this sounds complicated. It's less confusing than it sounds, I promise.

Minor-Key Substitutions

Something that's done in a *lot* of songs, even/especially pop songs, is called **Parallel-Minor Substitution**. This term might sound intimidating but it's actually dead-simple. All you do is substitute a chord from one of the minor-tables corresponding to the chord you *would* play in your current key. The most popular example of this is probably substituting the *iv* for the *IV*. So if you're playing in the key of C-Major (Ionian), then instead of playing the IV (F Major (7th)), you look at the **Natural Minor** or **Harmonic Minor** table, and use the *iv* from the C-Minor key. I.e. play a *iv* (f minor (7th)) instead. Try this chord sequence: C Major, F Major, f minor, C Major and you'll instantly recognize multiple pop-songs.

That's just an example. You can do this with the *I*, the *ii*, the *iii*, every chord! Likewise, if you're playing in a Minor key already, try substituting from the Parallel Major key.

Reharmonization

This is extremely common in jazz music. What you do is, in a chord-sequence, you take any chord, and change it for a *sequence* of chords, especially a *ii-I* or a *ii-V-I*.

Tritone Substitutions

What Does It All Mean, Though?

If you've gotten here and feel completely lost, here's a more in-depth explanation of what the information and symbols contained in these tables really means, and how to interpret it. Maybe I should have put this at the front. Oh well.