XI. Chord-Scales Via Modal Theory (Part 1)

A. Terminology And Definitions

• Scale: A graduated series of musical tones ascending or descending in order of pitch according to a specified scheme of their intervals. A scale normally covers a single octave before it repeats, and usually moves in steps consisting of Major or Minor 2nds (sometimes an Augmented 2nd). But scales are also used as raw material, a pitch collection, from which we create melodies and chords. So, the notes of a scale are *used* in many different permutations, not just in ascending or descending steps, and across several octaves.
Scale degrees will be listed here preceded by the letter "S". Scale degrees will be enumerated and labelled according to their intervallic distance from the 1st note (often called the "tonic", see below) of the scale.

• Tonal Centre: A tone or chord that a composer manipulates so that it is felt to be a central place of rest.
[Note: The word “tonality”, with a small “t” refers to any music that has a tonal centre of some kind.]

• Diatonic Scale: The 7-note scale that is derived from the first 7 pitch-classes of a cycle of 5ths. (Eg. F C G D A E B becomes C D E F G A B, or F G A B C D E, etc.) It consists of 5 whole-tones and 2 semitones, with the semitones spaced as far apart as possible. These criteria serve to include the major scale, the natural minor scale, as well as all of the Ecclesiastical modes. In this sense, the diatonic scale has no single tonal centre (see below) or 1st note. It has, rather, the potential for any one of 7 possible tonal centres. Common parlance also includes melodic minor and harmonic minor as being "diatonic scales" as well. (Much to my regret.) This has to do with the prevalence of the major/minor key system (see below) in today's music.

• Key: A type of tonal centre involving a central tone, as well as a major or minor triad associated with that tone. When the central tone is associated with a major chord, the music is in a major key. When the central tone is associated with a minor chord, the music is in a minor key. In traditional classical music, there are many rules that must be adhered to if a key is to be brought into being without ambiguity or impurities. In modern music involving keys, things are quite a bit more lax.
Note: It's pretty hard to get a chord that has an altered 5th to feel like a home chord, so there are no dim or aug "keys".

• Tonic: The first tone of a major or minor scale. The central tone of a key.

• The Major Scale: The major scale is the scale most closely associated with the major key system. Its intervallic formula is identical to that of the Ionian mode. Both are diatonic scales. The difference between the major scale and the Ionian mode is in how the notes are actually used. The tones of the major scale are used by a composer in such a way that the major key feeling is brought into being. This involves certain stylistic practices (eg. use of leading tones, cadences, traditional resolution of tritone intervals, etc.) that might not be present in music composed more loosely (or strictly) in Ionian mode. And just because a melody or chord progression is comprised of notes from, say, the C major scale, does not mean that the music is “in the key of C major” necessarily. To create the feeling of the key of C major, the notes of the C major scale have to be manipulated in particular ways that bring out the tone C, along with a Cmaj chord, as the tonal centre.
A short note about minor keys:
The major key feeling is predicated on a single scale, the major scale, and on the way that scale is manipulated.
Minor keys are more complex, and traditionally involve 3 scales; the natural minor scale (1 2 ♭3 4 5 ♭6 ♭7), the harmonic minor scale (1 2 ♭3 4 5 ♭6 7), and the melodic minor scale (1 2 ♭3 4 5 6 7). [Notice that the natural minor scale is truly a diatonic scale, in that it has 5 whole-tones and 2 semitones with the semitones as far apart as possible. Notice also that harmonic minor and melodic minor, although usually referred to as "diatonic scales" as well, do not really fit that description.] Or, you could think of minor key Tonality as involving one single composite minor scale, with variable scale degrees 6 and 7 (1 2 ♭3 4 5 ♭6-or-6 ♭7-or-7), which is really more in-line with how composers have actually written in minor keys.

• Tonality (with a capital "T"): The major/minor key system.

Note: The Medieval systems of modal composition predate Tonality. Tonality is only around 500 years old. So, talking about things like "modes of the major scale", however useful it may be, is actually pretty wrong-headed.

• Diatonic To: This term, confusingly, is used with the common meaning; "pitch content derived from the notes of" when referring to a scale (any scale, not just a diatonic scale) or a key.
Eg. Fmaj7 is "diatonic to" the key of C major, as well as to the key of F major. Eg. D+ is "diatonic to" the D whole-tone scale. Etc.

• Chord-Tone (abbr: CT): One of the component tones of a chord. Usually 1, 3 (or 4, in a sus4 chord), 5, or 7 (or 6, in a 6th chord). Usually labeled as an interval which is smaller than an octave (i.e. less than 8).

• Non-Chord-Tone (abbr: NCT): A note that is not normally a component of the chord being considered.

• Tension (noun) (abrr: T) [aka “Chordal Extension”]: Any NCT sounded for a long duration or accented on a chord. Tensions are usually labeled with a compound interval (Eg. 9, 11, or 13) within a chord-symbol. On any given chord-type, some tensions sound good, while others do not. Eg. An A♭ played for a long duration against a Cmaj chord creates the sound of C(add♭13). But this is not a very pleasing, or useful sound, most of the time. Yet A♭ sounds fine when added to a Cm7♭5 chord, as Cm7♭5(♭13).

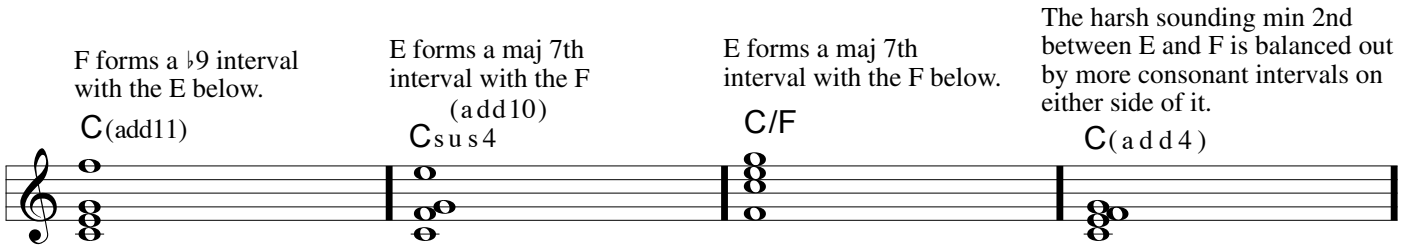
• Available Tension (abbr: AT): Any T that, when sounded for a long duration or accented, blends in vertically with the chord. When sounded for a long duration, an AT will tend to become part of the chord itself, in an agreeable way. For instance, sounding the note D for a long duration on a C major chord, will result in the chord C(add9) being heard by the listener. The D blends into the chord and becomes a part of it. An AT can often be treated, essentially, as if it is a CT itself in many ways.
Tensions are usually visualized as, and enumerated as, being added above the main body of the chord. This is why we almost always use compound intervals (with numbers higher than 8) to label them. But they can actually be voiced in the lower regions of a voicing too, depending on the skill/experience of the player. Sometimes you may also see a chord-symbol that labels a tension with a non-compound interval. Eg. C(add2).

• Avoid-Note (abbr: AN): Any NCT that clashes with a chord when held for a long duration or accented. When viewed from within a chord-scale (see below) - avoid-notes are almost always found a half-step above a CT.
Main exception: S♭2 (aka T♭9) on Dom7 chords is perfectly acceptable. S♭2 is a half-step above the root, but T♭9 on dom7 chords is common.

Also: T♭13 (aka S♭6) on dom7 chords is fairly routine. S♭6 is a half-step above the chord’s 5th. But, on dom7 chords, T♭13 is common although it does clash a bit with the chord's P5th. More often than not, the P5th will omitted from the voicing of a dom7♭13 chord. Therefore, the sound of a dom7♯5 chord is often preferred when encountering a Dom7♭13 chord-symbol. (S♭6 is enharmonically equivalent to ♯5.)

Avoid-notes create harsh sounding ♭2 or ♭9 intervals with one of the chord-tones. The ♭9 interval is usually used with considerable caution in Tonal harmony.
Consider This:
Sounding the note F, somewhere above the E in a voicing of a C major chord, will create either a ♭2 or a ♭9 with the E. In most melodic writing styles, the ♭9 interval requires some sort of resolution into a more consonant interval. The usual “tendency” of the note F on a C major chord, is to resolve down by 1/2 step into the nearby chord-tone, E.
However, if the F is sounded below the E, a less harsh sounding major 7th interval is created. The resulting chord might be called C(add11) or C(add4). [C F G E - bottom to top - is one possible voicing.] But its character, and function within a Tonal progression, would be quite different from that of a regular C major chord. [Acoustically, it’s actually more of an F chord - Fmaj9(no3rd)/C - as are the other “C(addF)” voicings discussed below.] Another possible chord-symbol for this type of voicing is Csus4(add10), or Csus4(add3). Notice the uncommon use of the non-compound intervals, “add4” and “add3”, in these chord-symbols. Unusual chords, often require unusual chord-symbols. But many folks would call all of the above chords C(add11).
Note: On a major triad, the P11th is an avoid-note, because it creates a ♭9 with the chord's 3rd. (see below)

But, on a Sus4 chord, adding a major 10th (same pitch-class as a major 3rd) *above* the 4th creates no ♭2's or ♭9's with the 4th, and is therefore an Available Tension! The resulting chord is often written as Csus4(add10). Some people prefer to refer to T10 as T17!
Another variation of this sound is voiced with the E and the F right next to each other, in a cluster (Eg. C E F C G). This chord might also be labeled C(add4), or Csus4(add3), etc. This voicing works because the min 2nd created by the E and the F is not exposed in the upper voices. The harsh sounding min 2nd interval is softened by the intervals above it. If voiced C G E F, it would be much less satisfactory.



In some ways, the idea of an "Available Tension" is subjective. If you find the note F, when sounded above the E in a C major chord, to be "pleasing", then to you, that F is probably an "Available Tension". The chord you would be creating could be called C(add11) [voiced C E G F perhaps]. Most people avoid this sound, however. So, on most chords that contain a major 3rd, the Perfect 11th is usually considered an avoid-note. "Avoid-Notes" are really not to be avoided per se. They just have to be treated a little bit more carefully than most CTs or ATs, and they should usually resolve into a nearby chord-tone. An avoid-note can work very well as a passing tone between the two chord-tones on either side of it. Avoid-notes are often the notes that give a particular scale, or key, its characteristic sound. If you leave them out entirely, it is impossible to get the flavor of that scale, or key, across.

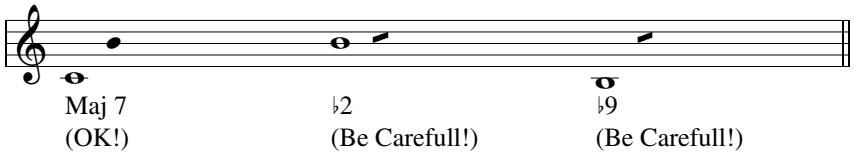
• Chord-Scale-Relationship (abbr: "Chord-Scale"): A scale, as seen in its vertical relation to a chord. Chord-scales are used as raw pitch material - a pitch collection - from which to derive melodies and/or chord voicings on a particular chord-type within particular harmonic situations. Chord-scale formulas are often calculated as intervallic relationships above the root of the chord. Eg. 1 2 ♭3 4 5 6 ♭7 is the formula for one of the chord-scales that can be applied to a min7 chord. I.e. We often treat the root of the chord as being the 1st note of the chord-scale. In a 7-note chord-scale, usually, all the chord-tones of a chord will be present, plus 3 NCTs which may or may not function as ATs on the chord.

• Chord-Sound: For a given chord-type; if you add up all of the Chord-Tones with all of the Available Tensions, you have a pitch collection that is sometimes referred to as "chord-sound" (i.e. all the tones that fit vertically on any particular chord-type, with no avoid-notes).

• Conditional Avoid-Note (CAN) (my term): A note that is usually stable (i.e. a CT, or an AT), but where certain circumstances might have it placed a half-step above (or a min 9th above) another stable note, thereby creating an undesirable ♭2 or ♭9 interval.

Example:

On a Cmaj7 chord, sounding the note C (the root!) above the chord-tone B, will create a ♭2 or a ♭9 with the B. So, if C is the melody note on what would usually be a Cmaj7 chord, the chord is often changed to either C6 or C6/9 or C(add9), in order to avoid this clash (aka a "rub"). C itself is therefore what I call a Conditional Avoid-Note on a Cmaj7 chord. (Even though it is the chord's root!)



Another Example:

On the chord Dm7(9), sounding the note F (the chord's ♭3rd degree) above the note E (the chord's added T9) will result in either a ♭2 or a ♭9 with the F. This is usually avoided.

[These ideas of "dissonance", "consonance", the resolution of dissonant intervals, "tendency tones", etc.,

if not already well understood, should be studied with a good harmony teacher or from a good text, like the Delamont books. Here, we will be dealing with these concepts in a much more casual way. Avoid-notes will usually resolve into the chord-tone immediately below (sometimes above). Available Tensions will, eventually, be used more or less freely, almost as if they themselves are chord-tones. As always, use your ears!]

• Modes: Historically, the term “mode” was only applied to particular ways that the pitches of the diatonic scale were treated by Medieval era composers. The mode gets its name from the final note, called the "finalis". "Finalis", in Modal music, is kind of (but not really) synonymous with "tonic", in Tonal music.
In more modern music, certain aspects of modal thinking have had a resurgence. We often hear modern musicians talking about tonal centres that are based on maj and min chords - but that don't really follow the traditional rules of maj/min key Tonality - as being "in a mode", even though, technically, it isn't really "in a mode" in the way that Medieval musicians composed in modes. And we often hear contemporary chord-scale oriented musicians using the names of the Ecclesiastical modes for the names of their chord-scales as well.

For example:

By emphasizing the notes D E F G A B C D, and particularly the note D (especially in the bass), a feeling of a tonal centre on D, which is somewhat different from what we call "the key of D minor", and quite different from what we call "the key of C Major", can be produced.
This scale is one of 7 possible modes of using the *diatonic scale*, although you'll see many people (including me) say that it's "a mode of the *major scale*". If you want to relate it to the major scale, it's probably better to use the term "rotation of" rather than "mode of". I usually try to call it the D dorian "scale". Most folks, in jazz, are happy calling it the D dorian "mode" though.
It may seem like I'm nitpicking here. But people who have studied real modal music get quite upset when we jazzers go off talking about certain tunes as being "in a mode", and technically, they're right. I just want you to be aware of the controversy.

Although rotations of the harmonic minor and melodic minor scales have been used by jazz musicians as chord-scales, it would be illogical for a theorist to think of any passage of music, let alone an entire piece, as being in the “key” of one these scales.

Around the beginning of the 1900’s, classical composers like Stravinsky, Debussy and Shoenberg were experimenting with melodic and harmonic materials that were not so rigorously based on the major/minor key system anymore, if at all. Later on, several jazz musicians, like Miles Davis and John Coltrane, began to investigate the use of modal-like tonal centres in a jazz setting. Jazz musicians have dabbled in atonal and pan-tonal music as well but, by far, the bulk of the jazz repertoire is based, albeit loosely, on the major/minor key system.

For our purposes, the term “mode” will be still be used here to describe the various rotations of a handful of more familiar parent scales, even though I am fully aware of the problems of using the word "mode" in this way. It has become common practice in the jazz theory world to use the word like this. So, I will routinely be speaking about things like; the modes of the melodic minor scale, the modes of the symmetrical diminished scale, the modes of the symmetrical augmented scale, etc.

B. The Modes ("Rotations") Of The Major Scale

The major scale has 7 possible modes (rotations). For example:

The 1st mode: C D E F G A B C is called C Major (aka C Ionian).

The 2nd mode: D E F G A B C D is called D Dorian.

The 3rd mode: E F G A B C D E is called E Phrygian.

The 4th mode: F G A B C D E F is called F Lydian.

The 5th mode: G A B C D E F G is called G Mixolydian.

The 6th mode: A B C D E F G A is called A Aeolian (aka A Natural Minor).

The 7th mode: B C D E F G A B C is called B Locrian.

We will be looking at these modes as possible chord-scales for the diatonic triads and 7th-chords that can also be built upon the scale degrees of the C major scale.
Each scale is notated to show the vertical relation of each scale-tone to the notes in the chord being considered.