7th chords and scale harmonization

Like traditional common practice music, jazz chords are tertian, meaning they are built using major and/or minor thirds. While traditional music has the **triad** (3-note tertian chord) as its basic harmonic unit, jazz uses the **7th chord** (4-note tertian chord) as its basic unit. 7th chords should be thought of as triads with an additional third added on top (making it a 7th above the root).

Refer to the "Seven basic 7th chords" handout to see how to assemble 7th chords.

While triads and 7th chords can be formed by formulas of differently-combined thirds, it is also useful to recognize how notes separated by thirds within major or minor scales form these chords. When chords are derived from scales in this way, the chords can be designated with a roman numeral that corresponds to the specific scale degree (1-7). This process of extracting chords from a scale is called **harmonizing a scale**. The result is the set of chords that are **diatonic** (belonging only to that key).

Harmonizing the major scale with 7th chords gives us the following set of chords:



Harmonizing the minor scale with 7th chords gives us the following set of chords:



*Note that the V7 and vii^o7 chords use the raised 7th scale degree (a B-natural in this case) that comes from the harmonic minor mode–and that there are two types of VII7/vii^o7 chord.

Note: for the sake of simplicity, we often abbreviate the **ii-7 V7 Imaj7** and **ii-7(b5) V7 i-7** *symbols to merely ii V I(i) (leaving out the 7ths and qualitative symbols, etc.). It is understood that these are usually 7th chords in spite of the lack of notation.*

Specific chord progressions: ii V I

Like traditional music, the chord progressions in many styles of jazz are tonally driven, meaning they are organized in a way to progress (lead to) a goal and stable resolution, which is almost always the tonic chord (the I or i). Many jazz progressions approach the tonic in the same way traditional progressions do: from the dominant or dominant 7th chord (the V or V⁷). Similarly, the V⁽⁷⁾ chord is typically approached by a predominant chord (the ii in the major mode; ii^o in the minor mode). This pattern of ii $\rightarrow V \rightarrow I$ is part of a *circle of fifths progression*, where the roots of the chords move up by a 4th (or down by a 5th). Also, because this is a very common progression, we can consider these three chords as a single unit or event, or even a sentence within the music.

> The ii $\rightarrow V \rightarrow I(i)$ is like a singe unit, event or "sentence" (think: noun \rightarrow verb \rightarrow adjective)

The ii \rightarrow V \rightarrow I(i) in context

In jazz contexts most chords are 7th chords, especially the predominant (ii), dominant (V) and tonic (I/i) chords so a short, typical chord progression would be:



In major keys: ii-7 \rightarrow V7 \rightarrow Imaj7



In minor keys: ii-7(b5) \rightarrow V7 \rightarrow i-7



Or put simply:



Substituting the tonic 7th chord with a 6th chord

Sometimes in a ii V I(i) situation, the I(i) 7th chord is replaced by a 6th chord (here the chordal 7th is replaced with a 6th–always a major 6th). This especially happens when the melody note over the I(i) chord is the tonic, which is often the case at the end of a tune. The 6th version of a chord sounds a little more stable than a 7th version, so an ending can sound more stable with this harmony.



Expanding the ii \rightarrow V \rightarrow I

The ii V I progression is based on the time-tested *circle of fifths progression* (also known as the *circle of 4ths*) because the roots of the chords move by descending 5ths (or ascending 4ths). Being that this is a pattern, it is often expanded upon to make longer progressions. The two chords that lead up to the ii V I(i) which fall into this circle of fifths pattern are respectively the iii and vi (in major keys). Often we see sequences of chords leading to the tonic like so:

$$iii \rightarrow vi \rightarrow ii \rightarrow V \rightarrow I$$

(again, all as 7thchords)

In the key of C major, the progression of 7th chords would appear like this in a chart:

 $Em7 \rightarrow Am7 \rightarrow Dm7 \rightarrow G7 \rightarrow Cmaj7$ (or C6)

Here are the last five measures of *Alice in Wonderland* by Fran/Hillard:



It is also possible to see just the $vi \rightarrow ii \rightarrow V \rightarrow I$ progression. All the Things You Are (by Hammerstein/Kern) begins this way in the Key of Ab major:



Fragments of the ii V I

The ii V I progression is such a pervasive musical unit in many styles of jazz and blues that often it need not be presented in its entirety to be effective. Portions of a tune where a sense of progression is desired, but NOT a resolution, might use just a sub-unit: the first two chords, ii \rightarrow V (a minor 7th chord [or m7b5) followed by a dominant 7th chord). Furthermore, this may be done in any key, not just the main/original key of the song, as songs have a tendency to stray briefly into other keys. The A section of Duke Ellington's *Satin Doll* does this:



- The D-7 \rightarrow G7 is the ii \rightarrow V in the key of C (the main/original key), but...
- The E-7 \rightarrow A7 is like the ii \rightarrow V in the key of D
- The A-7 \rightarrow D7 is like the ii \rightarrow V in the key of G
- The Ab-7 \rightarrow Db7 is like the ii \rightarrow V in the key of Gb

Note: some of these chords can also be recognized as chromatic chords, but that will be discussed later.

Identifying smaller units: ii \rightarrow V fragments: how to...

In the above example, a ii \rightarrow V fragment in G, D and also Db were identified. While it is easy to identify the ii V (and I(i) of the main key), how do we recognize ii's and V's that are not a part of that main key, but belong to other, temporarily-visited keys?

The quality of a V is <u>nearly always</u> a dominant 7th. The quality of a ii is either a <u>min7</u> or a *min7b5*. Just finding chords with these qualities in a song is not enough to designate them with specific roman numerals. But chords will be in a ii \rightarrow V relationship if a dominant 7th chord is immediately preceded by a m7 or m7b5 chord whose root is a 4th below (or 5th above). Then the two chords can be thought of as a smaller but still cohesive unit: the ii and V of a particular key whose tonic is a 5th below (or 4th above) the dominant 7th chord in question.

For example, in the key of F major, if we encountered a Gm7 \rightarrow C7 we should be able to discern quickly and easily that the Gm7 is the ii and the C7 is the V. But if somewhere else in the tune we encountered an Am7 followed by a D7, these two chords could be thought of as fitting into the ii and V of G since D7 can be heard as the V of G and Am7 is a 4th below D (and Am7 can also be heard as the ii of G). Figuring out ii \rightarrow V units takes time, but the above process is fairly fail-safe. You can also refer to your "ii V I" table and compare chords in a given row to consecutive chords in a song.

Why do we bother to identify ii \rightarrow V fragments in other keys within a song?

This combination is so very common that jazz players spend a lot of time practicing these chord combinations in all keys (in terms of straight chord playing-ability/recognition, but also for improvisational purposes). In an actual song, when these small units of chords are encountered, the player has already rehearsed them not just one at a time, but in the two-and three- chord patterns that they follow. Less processing and calculating is required on the spot, because much of it has been done ahead of time. The reaction of a player seeing the chords Am7 D7, or Ebm7 Ab7 is something like: "I know that collection of chords; I've practiced those in that order a thousand times!"