

# Chord Progressions and Cadences

## Part I - I, IV, and V


In the discussion that follows I'm going to use our "roman numeral" terminology, and I'm also going to talk a lot about "scale degrees" - the specific notes in the scale. Whenever you see a number with a caret over it, like  $\hat{1}$   $\hat{2}$   $\hat{3}$ , that refers to a scale degree. I'll also use solfège syllables, the "do re mi" language.



C major:  $\hat{1}$   $\hat{2}$   $\hat{3}$   $\hat{4}$   $\hat{5}$   $\hat{6}$   $\hat{7}$   $\hat{1}$   
do re mi fa sol la ti do

### The I Chord (or "Tonic")

The tonic chord is the heart of the key. The upper tones,  $\hat{3}$  and  $\hat{5}$ , give the feeling of being very stable and important, but somehow still suspended "up in the air." That's because they are being heard in relation to a more important note,  $\hat{1}$ .  $\hat{1}$ , in contrast, sounds completely anchored. It is the end-all, be-all note, relating to nothing but itself.



$\hat{5}$  upper tones  
 $\hat{3}$   
 $\hat{1}$  the tonic note

C: I

A typical, simple tune will start by emphasizing the upper tones of the tonic chord, and eventually it will work its way downward toward  $\hat{1}$ . Consider this familiar children's song.

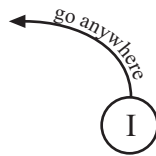


The more we get to - ge - ther to - ge - ther to ge - ther, oh the  
more we get to - ge - ther the hap - pi - er we'll be!

You could boil down this tune to a simple line that starts on  $\hat{5}$  and eventually works its way down to  $\hat{1}$ . Notice how each phrase also begins and ends with the I chord.

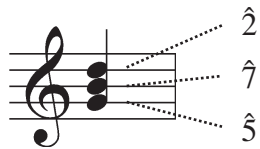


When you are on the I chord you are harmonically “home.” If you were to stay there for an entire piece it would be quite boring - we want to introduce a little tension by moving away from I and working our way back. I is free to move to any harmony it wants, so I’ll begin our little progressions flow-chart with an arrow that says “go anywhere.”

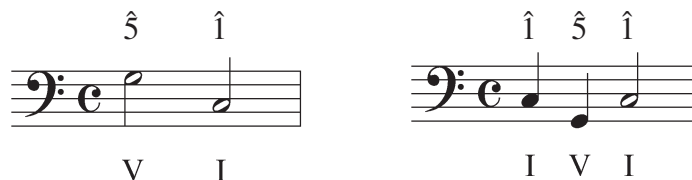


### The V Chord (aka the “Dominant”)

The V chord is the most important contrasting “pole” to I. It sounds very stable and yet you can usually hear how it “wants” to go back to the tonic. (This relationship is called its “tendency.”) The reason for V’s tendency toward I is the way its tones connect to the tonic tones. It gives us scale-degrees  $\hat{5}$ ,  $\hat{7}$ , and  $\hat{2}$ .



If the  $\hat{5}$  is in the bass line, it will typically jump to  $\hat{1}$ . This  $\hat{1}$ - $\hat{5}$ - $\hat{1}$  motion is already a part of the tonic chord, so it sounds right at home in the key. It is easy to hear or sing.



Scale-degree  $\hat{7}$  is also known as the “leading tone” because of its close relationship to  $\hat{1}$ . This connection is extra-strong because it is only a half-step.

C: V I

Scale-degree  $\hat{2}$  has a more mild tendency towards  $\hat{1}$ . You can hear how it just hangs out in the slot above the tonic.

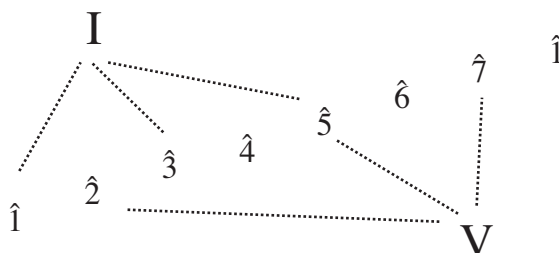
**V7 - an extra “tendency tone”**

The  $V^7$  chord is particularly effective in pointing towards I because it is relatively dissonant, and thus unstable, and the seventh of the chord (scale-degree  $\hat{4}$ ) is closely related to  $\hat{3}$ . Thus, not only do you have a “ti-do” connection but also a “fa-mi.”

V<sup>7</sup> I

So the V is the perfect yin-yang partner to I. It covers all the notes “around” the I chord, and its bass is easy to hear because of the sol-do relationship with  $\hat{1}$ .

So far, with just the I and V chord (and sometimes  $V^7$ ), we’ve got enough chords to harmonize most of the scale-degrees.



We really need one more harmonic pole to cover all our bases. And that’s IV.

## IV - the other harmonic pole

V is a perfect fifth above I. It turns out IV is a perfect fifth *below* I. Thus the IV is often referred to as the “subdominant.”

V    I    IV

dominant    tonic    sub-  
dominant

IV is not as strong a contrasting pole as V. It presents scale-degrees  $\hat{4}$ ,  $\hat{6}$ , and  $\hat{1}$ .  $\hat{1}$  is still in it, so that undercuts its ability to contrast with the tonic, and, unlike V, its root is not in the tonic triad, which makes it sound less closely related. The upper tones of V point to  $\hat{1}$  (including the super-strong “leading tone”), but the tones of IV are more of an upper-neighbor to  $\hat{3}$  and  $\hat{5}$ , which is much weaker. Maybe think of IV as a temporary “lifting up” from I, instead of an opposite pole.

IV as a “lifting up” from I

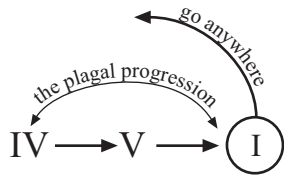
C: I IV I

We are going to call the progression I-IV-I the “plagal progression.” This term will become a lot more important when we talk about cadences.

In addition to the plagal progression, IV is also very useful as an in-between stop on the way to V. I-IV-V-I is a very common pattern in music.

I    IV    V    I

We can organize everything we've talked about to this point into our progressions flowchart:



This chart encapsulates the following information:

- From I you can go anywhere.
- V is the most closely related chord to I, so it is in next spot to the left.
- IV is a little more distantly related, so it goes further out in the chain. We often see the progression IV-V-I.
- The “plagal progression” is a slightly more unusual step out of the chain. It’s not as basic or key-defining as I-V-I.

## Part II - Phrases and Cadences

A phrase is a relatively short chunk of music that ends with a little pause. If the piece in question is a song, the phrases will be spans of melody that you might sing with one breath, and the pause will probably coincide with the end of a sentence or clause.

Consider, for example, this familiar tune:

The musical score is written in treble clef with a 3/4 time signature. It consists of three lines of music, each with a melodic line and a corresponding chord progression. The lyrics are written below the notes. The first line starts with a C chord and ends with a C chord. The second line starts with a C chord and ends with a G chord. The third line starts with a C chord and ends with a C chord. The lyrics are: "Twin - kle twin - kle lit - tle star, how I won - der what you are. Up a - bove the world so high, like a tea tray in the sky, Twin - kle twin - kle lit - tle star, how I won - der what you are."

Chord symbols above the first line: C, C/E, F, C, G7/B, C, G, C

Chord symbols above the second line: C, G7/B, C, G, C, G7/B, C, G

Chord symbols above the third line: C, C/E, F, C, G7/B, C, G, C

Here you can see that each line presents a pair of phrases. The phrases unfold with continuous quarter-notes until they pause on a half-note.

Harmonically, the most important chord in a phrase is the last one. This is the target or goal of the phrase, and it characterizes the musical statement much like commas, question marks and periods can characterize a verbal statement. We call these special harmonic events **cadences**. In explaining the different kinds of cadences, I'll start with the most important and final cadence and proceed through to the most inconclusive ones.

## Perfect Authentic Cadence (PAC)

The PAC goes V-I. As I mentioned earlier, the root of the tonic chord,  $\hat{1}$ , is the most “grounded” scale degree, and so the PAC concludes with it. The bass line will also go  $\hat{5} - \hat{1}$ . You can see that “Twinkle Twinkle” features two PACs, one in the second phrase and then its repetition at the end of the piece.

“re-do” in melody.  
(can also be “ti-do”)

how I won - der what you are.

$V_6^5$  I V I

PAC

root position  
V-I in bass

## Imperfect Authentic Cadence (IAC)

The IAC also goes V-I, but it either comes to rest on an upper tone of I (either  $\hat{3}$  or  $\hat{5}$ ) or the bass fails to go  $\hat{5} - \hat{1}$ . We saw an IAC in our other children’s tune, “The More We Get Together.”

melody lands on  $\hat{3}$   
(less conclusive)

The more we get to - ge - ther to - ge - ther to ge - ther, oh the

V IAC I

The last measure here includes  $\hat{1}$ , to be sure, but it seems to land squarely on  $\hat{3}$ . This seems to be intentionally inconclusive, since we are saving the really conclusive gesture for the end of the tune:

Big “re-do” in the melody.

oh the more we get to - ge - ther the hap - pi - er we'll be!

V I

PAC

## Plagal Cadence (IV - I)

The plagal cadence also ends with I, but the IV-I motion is much less conclusive than V-I would be. IV-I is often tacked on the to end of a movement to fit the words “Amen” - thus you could think of it as the “Amen cadence.” The very frist phrase of “Twinkle, Twinkle” ends with a plagal cadence, and then continues on to a more conclusive PAC.

upper neighbor to  $\hat{5}$ , “la sol”

plag. PAC

## The Half Cadence (HC, stops on V)

The half cadence doesn’t even go “home” to I, but rather it gravitates towards the contrasting pole of V. As a result, the phrase feels “unfinished” or “up in the air” and demands a continuation that will resolve more fully. The middle section of “Twinkle, Twinkle” features a pair of half cadences. Notice how we could not possibly stop after this point - the tune would sound blatantly unfinished.

HC HC



## Deceptive Cadence

The deceptive cadence pretends that it will be a PAC, but instead of going V-I it veers off onto another, remote harmony (usually vi.) It is the opposite of conclusive - it says “you thought we were done, but we’re not!”

Deceptive cadences are rare in folk songs, so we’ll have to make one up. Imagine the last line of “Twinkle, Twinkle” went like this - it would be ridiculously pompous, but it makes sense. The deceptive cadence in place of the PAC demands a continuation, so we tack on a drawn out PAC to finish it off.

The musical score shows the final line of the song. The melody is written in treble clef, and the bass line is in bass clef. The lyrics are: "Twin-kle twin-kle lit - tle star, how I won-der what you are. what you are...". Above the staff, the chords are: C, C/E, F, C, G7/B, C, G, Amin, F, G, C. Below the staff, the Roman numerals are: I, I<sup>6</sup>, IV, I, V<sub>5</sub><sup>6</sup>, I, V, vi, IV, V, I. The cadence is labeled as "plag." (IV-I), "decep." (V-vi), and "PAC" (V-I).

So, to sum up, we’ve got five different cadence types.

### Perfect Authentic Cadence (PAC)

Goes V-I. Has  $\hat{2}-\hat{1}$  or  $\hat{7}-\hat{1}$  on top,  $\hat{5}-\hat{1}$  in the bass. The most conclusive cadence.

### Imperfect Authentic Cadence (IAC)

Also goes V-I, but it has a different melody note or bass note. Less conclusive.

### Plagal Cadence (Plag.)

IV-I. Less conclusive.

### Half Cadence (HC)

Stops on V. Explicitly inconclusive.

### Deceptive Cadence (Decep.)

Goes from V to something else (usually vi). Explicitly inconclusive.

## Part III - More About Progressions

### The Dominant “Family”

Hopefully you remember that the V is also known the “dominant” chord. It turns out that we can also expand that term and speak of a dominant family, which also includes  $\text{vii}^\circ$  and  $\text{vii}^{\circ 7}$ . The  $\text{vii}^\circ$  chord (also known as the “leading-tone triad”) shares two of the same notes as V, and it is even included in the upper tones of a  $\text{V}^7$ . It has the same tendency tones,  $\hat{7}$  and  $\hat{4}$ , that we’ve talked about previously.

C: V                      V<sup>7</sup>                      vii<sup>°</sup>

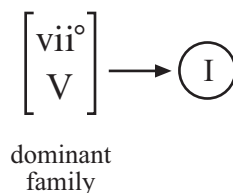
C: vii<sup>°</sup>                      I

It turns out that  $\text{vii}^{\circ 7}$  in minor keys is much more common than  $\text{vii}^{\circ 7}$  in major keys. It only takes a half-step tweak to turn  $\text{V}^7$  into  $\text{vii}^{\circ 7}$  (note how G becomes  $\text{A}^\flat$  in the example below.) The  $\text{vii}^{\circ 7}$  also introduces a new “tendency tone” that points back to the I chord - the seventh of the chord (scale-degree  $\hat{6}$ ) sinks down by half-step to  $\hat{5}$ .

c: V<sup>7</sup>                      vii<sup>°7</sup>

c: vii<sup>°7</sup>                      i

Thus, we can add  $\text{vii}^\circ$  to our flowchart in the same position as V. Both chords have the same function and can substitute for one another. Moving between the two is like “staying in place” harmonically.



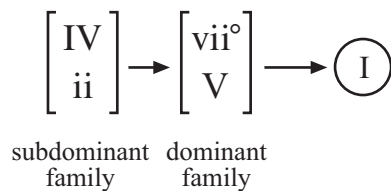
## The Subdominant Family (adding ii)

The ii chord also has a family relation with IV, sharing two pitches. Like IV, ii frequently serves as a stepping stone to V.

C: ii                      IV

C: ii    V    I

Thus, we have a second bracketed family in the flowchart.



## Extending the “Chain of Fifths”

The V chord is, of course, a fifth above I. The ii chord relates to V in the same way - it’s a fifth above V. (I’ll usually draw it a fourth below V, in order to make a compact zig-zag pattern - remember that a fourth up and a fifth down are interchangeable.)

C: ii    V    I

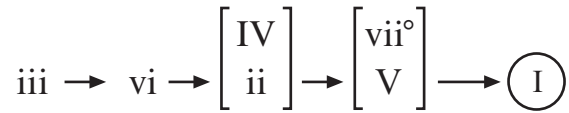
becomes...

C: ii    V    I

It turns out that this is a particularly appealing way to link up chords - we can keep going backwards in the cycle and connect vi to ii and iii to vi. We’ll call iii and vi “remote harmonies,” and they often work their way back to I through this familiar zig-zag pattern.

C: iii    vi    ii    V    I

We can thus add these remote harmonies to our flowchart (re-aligned to emphasize the fifths cycle.)



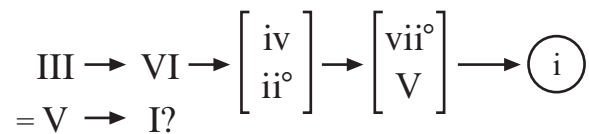
I-vi-ii-V-I is a very familiar cycle in folk songs, old pop songs, et cetera. One can also substitute another member of the subdominant family and have I-vi-IV-V-I (the “Heart and Soul” progression.)

I   vi   ii   V   I

I   vi   IV   V   I

### Remote harmonies in minor

The flowchart tends to work the same in minor keys, but the quality is quite different. The “remote” harmonies are all major, and thus there is the danger that they will sound like V-I in a new key.

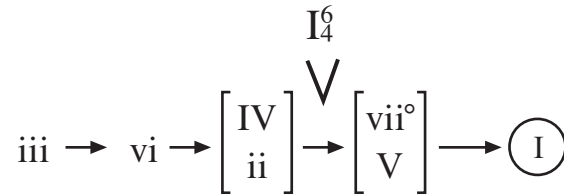


Also, minor keys include an even more remote harmony, the unraised VII chord. We write it with capital letters (since it is major, not diminished), and we’ll refer to it as the “subtonic.”

VII   III   VI   ii°   V   i

## The Cadential $\overset{6}{4}$

The cadential  $\overset{6}{4}$  is a tonic chord in second inversion that is inserted right before the final V-I of a progression. We'll add it to the flowchart like so:



This formula is a very familiar sound from classical music. Scale-degree  $\hat{5}$  is in the bass, allowing you to anticipate the final  $\hat{5}$ - $\hat{1}$  bass motion in the progression, but the upper tones of the V are delayed. This insertion creates an interesting new tension - now scale degrees  $\hat{1}$  and  $\hat{3}$ , normally the most stable tones, suddenly have a strong need to move down to  $\hat{7}$  and  $\hat{2}$ . It's like the normal hierarchy has been turned inside out.

$\hat{7}, \hat{2}$  are delayed

C: I   ii<sup>6</sup>   I<sup>6</sup>/<sub>4</sub>   V   I

↑  
 $\hat{5}$  arrives here

Because of this sense that V has already arrived and is just being delayed, some theorists prefer to mark this chord as  $\overset{6}{4}$ V (followed by a  $\overset{3}{4}$  when the harmony changes to V proper.) I think this is too confusing for beginning students, so we will not do it, but just be aware that it is out there.  $\overset{6}{4}$ V to  $\overset{3}{4}$  is true to the original spirit of figured bass (where you thought about the bass note first) but it is very unlike our contemporary way of thinking with roman numerals.