

Harmony in classical music

A brief introduction and overview



In harmonies in classical music, chords are designated by Roman numerals based on their position in the scale/key – upper case for major chords and lower case for minor chords. [See **Ex.1.**]

In major and minor keys:

I, IV and **V** are called **primary triads**

ii, iii, vi and **vii** are called **secondary triads**.

In **major** keys:

I, IV and **V** are **MAJOR** chords [4+3 semitones]

ii, iii and **vi** are **MINOR** chords [3+4 semitones]

vii is a **DIMINISHED** chord [3+3 semitones].

In **minor** keys (as per key signature):

i, iv and **v** are **MINOR** chords

III, VI and **VII** are **MAJOR** chords

ii is a **DIMINISHED** chord.

However, in minor keys, **V** is more often used as a major chord – exclusively so at a cadence. **IV** is also frequently used in major form when required; **ii** is encountered in minor form less often. This is because of the two different forms of the minor scale – harmonic and melodic [see **Exs.1** and **2**].

Functional harmony



Classical music, until the late nineteenth century, was based on “**functional harmony**”, meaning that all chords tended to have a tonic, dominant or subdominant function. Most simply stated, the basic function of a dominant(-type) chord is to lead to a tonic(-type) chord, while the function of a subdominant(-type) chord is to precede a dominant(-type) chord [or alternatively move to a tonic(-type) chord]. A tonic chord can lead to either type. It is less often that, in the so called “common practice style”, a dominant(-type) chord in **root** position leads to a subdominant(-type) chord in **root** position. [Chord **inversions** can affect this “rule” – e.g. (V5/3) - IV6/3 - V6/3 (or V6/5) – I is a common progression.]

In functional harmony, **ii, iii, vi** and **vii** are regarded as substitute chords for **I, IV** and **V**:

vi is a substitute for **I** – for example, it is often used after **V** instead of **I** to make an interrupted cadence. **vi** frequently follows **I**, too – for instance, in the **I-vi-IV-V(-I)** progression, which is very common in pop music.

ii is a substitute for **IV**. These chords frequently occur next to each other, most often in the order **IV-ii**, as in bar 7 in the extract from Schubert's *Impromptu No.3* given later.

vii is a substitute for **V**, functioning as a weakened form of **V7** (minus the root). **vii** is rarely used in root position. Instead, it is mostly used in first inversion – i.e. with the 3rd of the chord in the bass. It is frequently found replacing **V** in a perfect cadence, especially in the Baroque era, though not in the final cadence of a composition. However, it does not replace **V** in an imperfect cadence.

iii is an ambiguous chord. Depending on the situation, it can substitute either for **I** or **V**. Adding a 7th onto a chord does not alter its function in any way.

The above functions are the same in both major and minor keys, except that **III** in a minor key does not have a dominant function, since this does not include the key's leading note – e.g. in A minor, **III** would be a C major chord (C-E-G); instead, it commonly moves to **VI** (bass movement by a 4th/5th) or is used as a means to suggest (or tonicise – see below) another key. It can also be used as a pre-dominant chord, as in the introduction of *Something* by The Beatles; here the chord progression is F → Eb → G7 (in 2nd inversion) → C, which harmonises an ascending chromatic melody of A-Bb-B natural-C. [The Eb major chord in C major here is a chromatic chord, an example of “mixture” (or “modal mixture”, Eb being a chord “borrowed” from the parallel minor key (Cm). The most common example of mixture in the Baroque/Classical era is the use of iv in major keys – e.g. Fm in C major (→ **V** or **i**). Mixture became more frequent (and more important) in the late Classical and Romantic eras.]

A chromatic chord encountered rather more often in minor keys is the major chord on the flattened supertonic – e.g. **Bb-D-F** rather than B-D-F in A minor – so, replacing a diminished triad with a major triad. The chord, usually designated as **bII**, is known as the **Neapolitan 6th** – “Neapolitan” because of its association with eighteenth-century Neapolitan opera composers, “6th” because of its habitual use in first inversion (bII6/3), where the 6th is the chromatic note



(which mostly tended to be the in the melody). In spite of its chromaticism, the chord functions in an identical manner to the chord it replaces – i.e. as a subdominant(-type) chord, and “resolves” onto **V(7)** (or **i6/4-V(7)**). [Its use in root position would involve an awkward tritone leap in the bass in its resolution to a root position **V** chord.] The chord is used in both major and minor keys and became very popular in the late Classical and Romantic eras – e.g. in the music of Schubert. [See **Ex.16 (v, vi and vii)** for examples.]

Cadences

Perfect cadence – **V-I** [or **vii-I**].

Plagal cadence – **IV-I** [or **ii-I** where **ii** is normally in first inversion].

Interrupted cadence – often **V-vi**, though actually **V**-anything other than **I**.

Imperfect cadence – [?] -**V**. A variety of chords can be used for to precede **V, I, ii, IV** and **vi** are the most frequent here – also **VofV** [see later].

[These progressions are essentially the same for both major and minor keys].

Figured bass

In Classical harmony (especially in the Baroque era), chords were indicated from a given bass line by figures (2-9) under the notes. These figures referred to the intervals above the bass note. The full figures were not always used – see below. Accidentals (sharps, flats or naturals) are added when necessary to indicate chromatic notes or changes of key etc. Non-harmonic notes are not shown in the figures, unless they are essential to the music. The figures used are as follows:

5 - root position – no figures implied a root position chord, sometimes **5** is found.
3

6 - first inversion – usually shortened to **6**.
3

6 - second inversion – no shortened form.
4

7 - root position of a 7th chord – usually shortened to **7**.
5
3

6 - first inversion of a 7th chord – usually shortened to **6/5**.
5
3

6 - second inversion of a 7th chord – usually shortened to **4/3**.
4
3

6 - third inversion of a 7th chord – usually shortened to **4/2** or **2**.
4
2

Sometimes a + is used instead of a # (e.g. 4+ rather than 4#). A diminished 7th is sometimes shown as **7**. An accidental appearing by itself under a bass note always refers to the **3rd** of the chord.

Using such figures is the most common way of naming chords in Classical harmony. See **Ex.3. Ex.4** shows the use of **I** and **V7** in various inversions in a piano piece by Schubert.

In Classical harmony, dissonances (7^{ths} etc.) need to be “prepared” (be part of the previous chord) and “resolve” (fall or, less often, rise by step to a note of the following chord). The exception is the 7th in **V7**, which does need not be prepared – it must resolve, however. Suspensions (see below) are typically shown as 4-3 (compare sus4 chords in pop music), 7-6 or 9-8. See **Ex.5**.



Non-harmonic notes – musical decoration

The most common forms of musical decoration are:

passing note – a note that moves by step between two chord notes; they can occur either off the beat [most often - unaccented] or on the beat [accented]. They can be either diatonic [most often] or chromatic. [Ex.6]

auxiliary note – sometimes called a neighbour note, these are decorations of a single pitch by the note above or below [upper/lower auxiliary]. Accented, unaccented, diatonic and chromatic all exist. Chromatic forms are common. [Ex.7]

appoggiatura – a note that is approached by a leap and which then falls or rises by step to a note of the chord. They are mostly accented, but unaccented versions are also found; diatonic and chromatic forms both exist. [Ex.8]

changing-note group – a decoration of a single note by the note above and below, which follow each other – either diatonic or chromatic or a mixture of both. [Ex.9]

suspension – a note held over from one chord into the next, which resolves by step onto a note of the chord. [Ex.10]

Ex.11 shows two versions of the same chord progression, the second a decorated version of the first.

Categorise each non-harmonic note in the extracts in Ex.12

Cadential and passing 6/4 chords

What appears to be a **16/4** chord is often found before **V** at a cadence – e.g. **16/4 – V – I** [perfect cadence] or **ii6/3 – 16/4 – V** [imperfect cadence]. Although still called **16/4** chords, these chords do not actually function as tonic chords. Rather, they consist of two non-harmonic notes (the 6 and the 4) as either suspensions, passing notes or appoggiaturas over a dominant chord – see **Ex.13(i)**. Note that they typically resolve downwards by step – 6-5, 4-3.

Similarly, a passing 6/4 chord (usually **16/4** or **V6/4**) is best regarded not as a functional harmony, but as a combination of passing or auxiliary notes between two inversions of the same chord – see **Ex.13(ii)**. As with the cadential 6/4, however, textbooks (and examiners) tend to treat them as chords in their own right.

The diminished 7th chord

Diminished 7th chords are constructed by adding a note a minor 3rd (3 semitones) above the 5th of **vii**, giving the resultant chord a 3+3+3 construction. Diminished 7^{ths} are a more dramatic and intense form of **V7**, and so are dominant-function chords, which are, therefore, typically followed by **I**. [**VI** is not a viable option here because of voice-leading difficulties.] As in a **V7** chord, the 7th needs no preparation. Although the 7th is a note of the minor scale – e.g. B-D-F-**Ab** in C – the chord is used in both major and minor keys, moving either to a major or minor tonic chord. [Ex.14]

Secondary dominant chords

Secondary dominants are an important means of expanding the harmonic vocabulary of a composition by introducing chromatic chords within a diatonic situation. **Any major or minor chord (but NOT diminished) can be preceded by its own dominant chord without weakening (or changing) the prevailing key.** For example, in an **ii-V-I** progression, both **ii** and **V** could be preceded by their own dominant chords to intensify the harmony, making the progression **Vofii-ii-VofV-V-I**. All types of dominant chords are available as secondary dominants – **vii**, **V**, **V7**, **V°7** etc. – though **V7** and **V°7** are the most commonly used. [See **Ex.15.**] Secondary dominant chords **tonicise** the chords they precede – i.e. make them momentarily act as tonic chords – and other chords (which may or may not be part of the main key) belonging to the tonicised key are often used, too. [See the example from Schubert's *Impromptu No.3* later. Also notice the use of **Vofvi-vi** replacing **V7-I** to reharmonise a previous melodic line in the extract from another Schubert piano piece in **Ex.4.**]

Tonicisations can last from a couple of beats (as in **Ex.15**) to several bars, which are likely to involve more than just **V-I/i** progressions in the tonicised key. Within the key of C major, for instance, other than **A(7)** or **C#°(7)** chords, a brief tonicisation of **ii** (D minor) might include chords of **E°**, **G minor**, **Bb**

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major etc. all diatonic chords in D minor, but foreign to C major. Look at the F major chord in bars 11 and 19 in the extract from Schubert's *Impromptu No.3* for an example of this. This chord is not a part of G major. If a tonicisation becomes more prolonged, it might begin to be considered more like an actual modulation to a new key. Unfortunately, there is no "mathematical" calculation to determine at which point a tonicisation becomes a full modulation.

Study the extracts provided in Ex.16, taken from music from the common practice period. Some of the extracts provide examples of other, less frequently encountered chords, as well as of a sequence of 7th chords and the 5-6 technique. Each is identified in the appropriate extract.

Pedal points

A pedal point (usually termed a pedal) is a sustained or repeated note (which can also be decorated by, for example, auxiliary notes), usually in the bass, above which the harmonies change. A pedal is an effective source of dissonance and can be quite fleeting or last for some considerable time.

Ex.17 shows a typical pedal point at the start of a piano sonata by Beethoven. The chords used are a common progression for an opening pedal – **I-ii (or IV-ii)-V7-I**. The ii6/3 chord (F#-A-C#) in bar 2³⁻⁴ is mildly dissonant with the E (tonic) pedal, while the B7 chord (in 2nd inversion) introduces more strident dissonance with D# (major 7th), F# (major 2nd/9th) and A (perfect 4th) all dissonant with the pedal note to varying degrees. The most common pedal points are those of the tonic and dominant. Occasionally, tonic and dominant are used simultaneously, the effect of which is similar to a drone. A pedal at the top of the texture is called an **inverted** pedal, while in an **internal** pedal the pedal note occurs in the middle of a texture. (See **Ex.22**, from a Schubert Piano Sonata, for an instance of a short internal pedal). Pedals are found in all styles/eras of tonal music and are frequently used in pop music. Elton John (e.g. the introduction of *Your Song* and the verse of *I'm Still Standing*) and Phil Collins (e.g. the chorus of *Another Day in Paradise*, the introduction of *In the Air Tonight* and the introduction / verse / instrumental of *Groovy Kind of Love*) are particularly fond of pedal points.

Pedals present us with a bit of a paradox. We are aware of the harmonic progressions above the pedal note, but the pedal also renders the harmony static. **Ex.18** shows the end of Bach's C minor Fugue No. 2 from Book 1 of *The Well-Tempered Clavier*. The piece essentially ends with a perfect cadence halfway through bar 29, but the music continues for a further 2½ bars over a tonic pedal, the whole piece ending with a Vofiv – iv - Bdim7th - i - Bdim7th - I (*Tierce de Picardie*) progression. These 2½ bars sound like a type of miniature codetta that harmonically prolong the tonic chord, making the harmonies above subordinate to the pedal note/tonic chord.

Study the simplified version of the opening 24 bars of Schubert's famous *Impromptu No.3* in Gb major printed below. The decorative piano figuration has been removed and the original key has been transposed to the less demanding key of G major. Examine the harmonic progressions and figured bass indicated on the additional (third) staff and the descriptions of the harmonic/melodic decorations in the music. Finally, answer the questions at the end of the score.

Opening of Schubert's *Impromptu no.III* [original key = G flat]

[Piano figuration omitted]

Andante

I vi ii6/3 V7 V4/2 I6/3 vii7 of V V I

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6

VI substitutes for i [vi] in a V7ofvi to vi progression

appog chord

appog

acc pn
aux

Tonicisation of ii

vi V7of vi IV ii V7 I V/IV of ii V4/3 of ii ii

11

appog

acc pn

sus

cadential 6/4

appog

acc pn

Tonicisation of IV

IVof IV IV V4/3 of IV IV vii7 V4/2 I6/3 IV ii6/3 I V7

16

chrom pn

double appog

double appog

sus

pn

Tonicisations of ii and IV as above

I I6/3 V V4/3 of ii ii IVof IV IV V4/3 of IV IV

21

sus

cadential 6/4

sus

appog

chrom pn

appog

IV V4/2/vii7 V7 I6/3 ii6/3 V6/3 of V I6/4 V7 I

Note interplay between V7 and diminished 7th

- Identify and name the cadences in the extract.
- Do the harmonic progressions in each phrase contain typical functional harmony?
- Why is the G# in bar 16³ described as a chromatic passing note rather than part of a vii6/3 of ii?

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Exs.19 & 20 list the chords (not in order of appearance) found in (i) the first group and transition of the 1st movement of Beethoven's *5th Symphony in C minor*, and (ii) the first subject [bars 1-72] of the 1st movement of Mendelssohn's *Violin Concerto in E minor*. Note the similar chords employed and the use of brief pedal points in both extracts. Work out where the given chords occur (where not already indicated). Mark them on the piano scores available on the imslp website, making a note of the inversion used. [Use the appropriate Roman numeral and a figure(s) for the inversion employed – e.g. 15/3, V6/5, V6/5 of IV etc.]

Exs.19 and **20** both contain **augmented 6th** chords – an **Italian 6th** in Beethoven, a **German 6th** in Mendelssohn. [A **French 6th** also exists; in E minor this would involve changing the G in a German 6th to an F# – making a chord of C-E-F#-A#.] Augmented 6th chords are subdominant (pre-dominant) chords and are essentially chromatic alterations of diatonic **ii(7)/iv(7)** chords. The Italian 6th in Beethoven's *5th Symphony* involves a change of F-Ab-C (iv in C minor) to **F#-Ab-C**. [The augmented 6th (F# here) originated as a chromatic passing note between F and G in a simple iv6/3 → **V** (imperfect/Phrygian) cadence, but over time came to be used as a harmony note without its preceding diatonic form – see **Ex.21(i)**. Similarly, the German 6th in Mendelssohn's *Violin Concerto* functions as a chromatic version of iv7 (A-C-E-G becomes **A#-C-E-G** by a similar process). A French 6th would, therefore, be regarded as a chromatic alteration of ii7; in E minor F#-A-C-E becomes F#-**A#**-C-E. See **Exs.21(ii) and (iii)**.] Like the diminished 7th and Neapolitan 6th, though more related to minor keys, augmented 6th chords are also employed in major keys, with the same resolution to **V** (or I/i6/4-V etc.).

Ex.22 is taken from a *Piano Sonata* by Schubert and illustrates the composer's characteristic use of augmented 6th chords. Note that they both occur at cadences; note, too, the use of the short internal pedal (indicated in the example) that creates an affecting dissonance between itself (E) and the D# in the augmented 6th chord.

A German 6th sounds exactly like a dominant 7th chord, though, of course their resolutions are very different – i.e. Ab-C-Eb-F# resolves onto a (dominant) chord of G(7) in C major/minor, whereas Ab-C-Eb-Gb resolves onto a (tonic) chord of Db major/minor. This similarity is often exploited (as a type of "pivot chord"), particularly in the Romantic era, as a means of modulating to another (more remote) key. **Ex.23** illustrates this "punning" harmonic procedure. The passage consists of two similar 4-bar phrases; the first ends with a perfect cadence in the tonic C major, the second with a perfect cadence B minor. The "pivot chord" occurs in bar 6² (G-B-D-F, V4/2 in C major); on the very next beat, it is re-spelled as a German 6th in B minor (G-B-D-E#), subsequently resolving onto a i6/4-V7 progression in that key in bars 7-8. German 6^{ths} customarily resolve to I/i 6/4 rather than immediately to **V** because of the forbidden consecutive that inevitably result in such a procedure. (These 5^{ths} are occasionally found, however; they are sometimes called "Mozart 5^{ths}".)

Though functioning as chromatically altered subdominant-type chords, augmented 6^{ths} are customarily described in harmony textbooks as being constructed on the submediant (in minor keys) – e.g. in C minor with a "root" on Ab. This results (uniquely in classical harmony) in chords that are not formed by stacking a succession of 3^{rds} above the root – e.g. in C major/minor, Ab-C-Eb-**F#** (not Gb), making an augmented 2nd rather than some type of 3rd between the last two notes. The true derivation of these chord, as described in the previous paragraph, preserves the usual 3^{rds} construction, albeit skewed somewhat by the slightly curious diminished 3rd between root and third.

