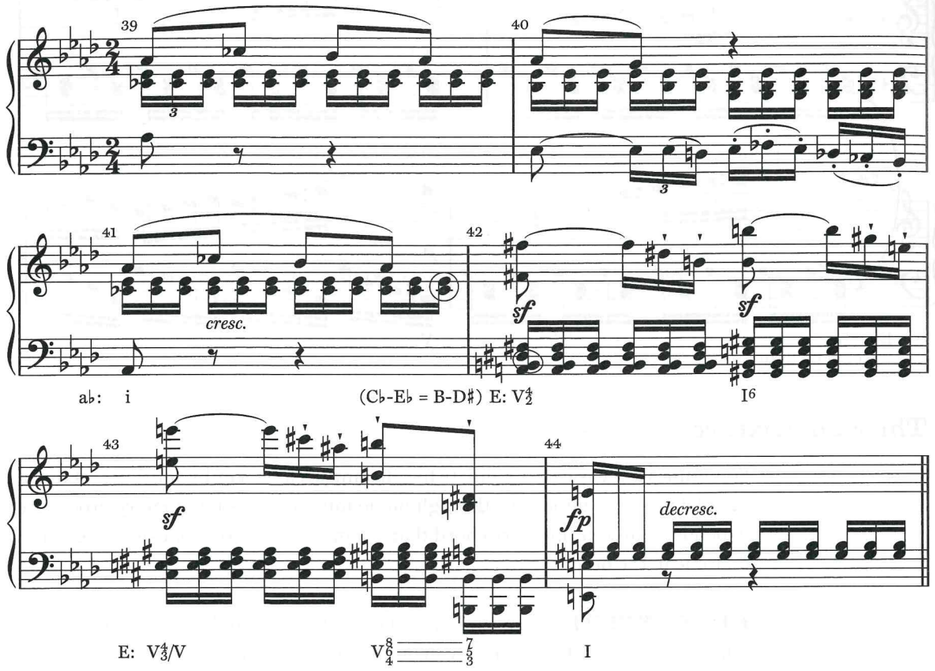
on beat 2 and leading to a cadence in measures 43-44 in E major. The move first to the parallel minor (A♭ minor) through mixture allowed for the common-dyad (enharmonically respelled: C♭-E♭ = B-D♯) modulation. One of the remaining pitches of the V^4_2 is approached through chromatic inflection (A♭-A♮ in the bass), while the other is approached by whole step (A♭-G♭, with G♭ spelled as F♯) through a dramatic minor-seventh leap in the upper voice.

Example 31.4: Beethoven, *Pathétique* Sonata, mvt. 2, mm. 39-44



Enharmonic Modulation with Augmented-Sixth Chords

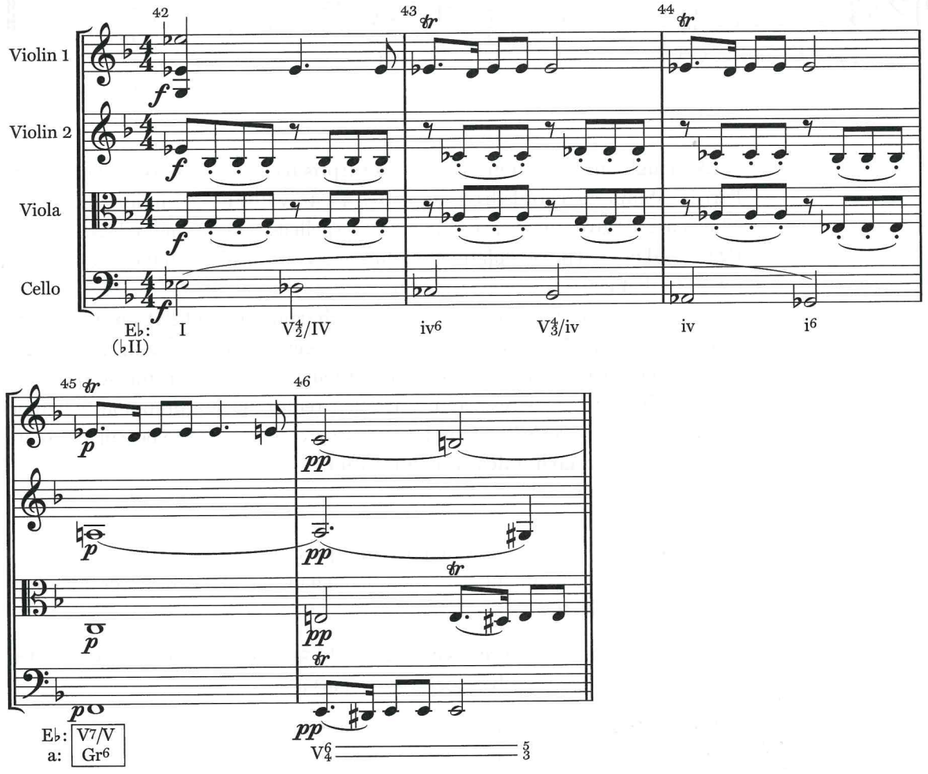
As is evident in the previous example, how a composer spells a chord has implications for how we expect it to resolve. There are several types of chords used in chromatic modulations where the entire chord is held in common, but the chord is enharmonically respelled to reflect a different expected resolution. For example, the Gr^6 is especially valuable in modulations: it sounds exactly like a dominant seventh chord, which can be resolved two or more ways depending on how it is spelled.

Look back at Example 31.3. If you weren't looking at the spelling of the chord in measure 22 but only listening to the passage, you might expect the chord to resolve as V7/IV in C, as though spelled C-E-(G)-B♭ (a dominant seventh chord in C). But Beethoven's spelling, C-E-A♯ (an augmented-sixth chord), and the voice-leading of the chord's resolution move this passage toward the new tonal area of E major.

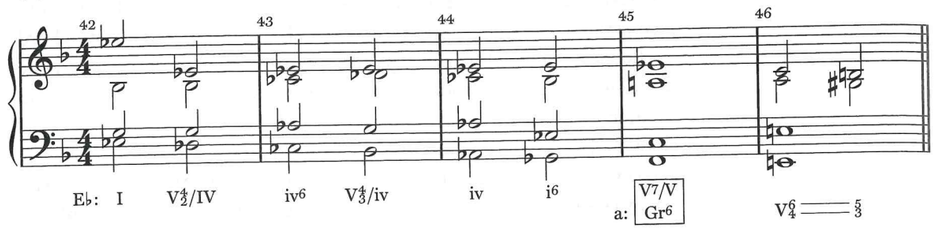
Now look at Example 31.5a, an excerpt from Mozart's String Quartet in D Minor. The key in measure 42 is E♭ major, the Neapolitan of D minor. This passage is heavily colored by mixture chords, including the minor subdominant and tonic, as shown in the reduction in part (b). We would expect the V7/V in E♭ major (m. 45) to resolve to a B♭ dominant harmony, yet it resolves instead to a cadential V^6_4-$^5_3$ in A minor.

Example 31.5: Mozart, String Quartet in D Minor, mvt. 1

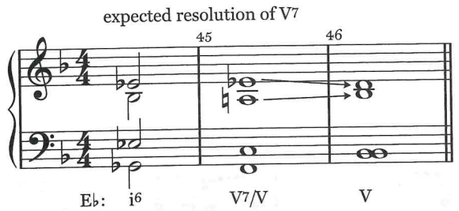
(a) Mm. 42-46



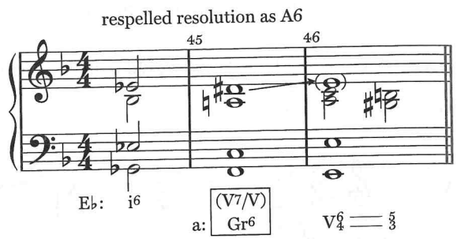
(b) Reduction of mm. 42-46



(c) Resolution of mm. 44-46 as V7



(d) Resolution of mm. 44-46 as Gr6



Although this resolution sounds a bit surprising, it makes sense in retrospect. Part (c) shows the chords from measures 44-46 with the resolution we expect, while part (d) gives the measure 45 chord respelled as an augmented sixth—with D♯ instead of E♭. The modulation to A minor is confirmed when the passage continues in that key through measure 53.

In this type of modulation, called an **enharmonic modulation**, the entire contents of a chord are held in common between the first key and the second, with the chord respelled (or resolved as though respelled) in the second key. Because the harmonies resolve in ways that require reinterpretation (whether the resolutions are respelled or not), such progressions can also be called modulation through **enharmonic reinterpretation**.

KEY CONCEPT Use enharmonic reinterpretation between Gr6 chords and dominant sevenths to modulate to a new key a half step higher or lower than the original (Example 31.6).

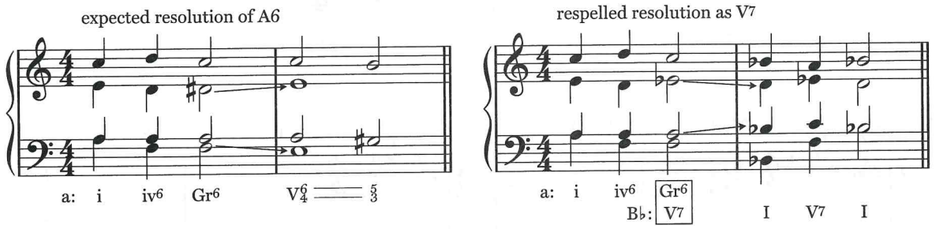
- Up by half step: reinterpret a Gr6 as a V7; the ♯$\hat{4}$ is respelled as the seventh of a V7, and the V7 then resolves to the tonic (part a).
- Down by half step: reinterpret a V7 as a Gr6; the seventh of the V7 is respelled as ♯$\hat{4}$ of a Gr6, and the Gr6 resolves to V in the new key (part b).

- Additional keys may be reached by interpreting the V7 as a secondary dominant, rather than a diatonic chord in one of the keys (as in Example 31.5, for keys a tritone apart).

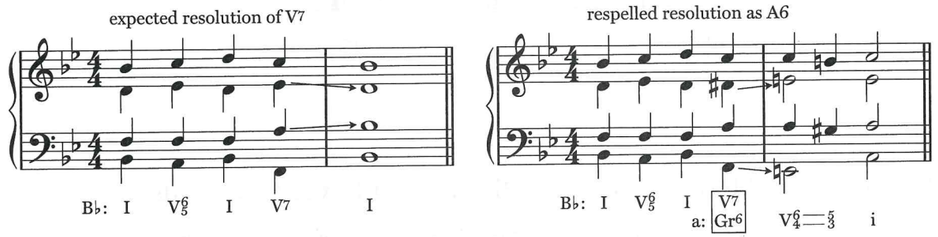
When you write enharmonic modulations, pay careful attention to accidentals in the new key. Play these examples to hear how the harmonic "deception" sets up the new tonic.

EXAMPLE 31.6: Enharmonic modulation with V7 and Gr6

(a) Enharmonic modulation up by half step



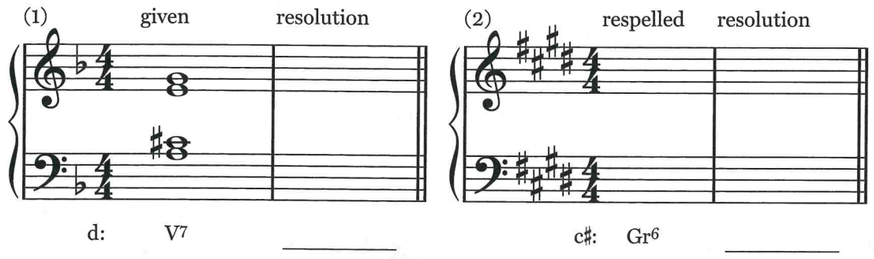
(b) Enharmonic modulation down by half step



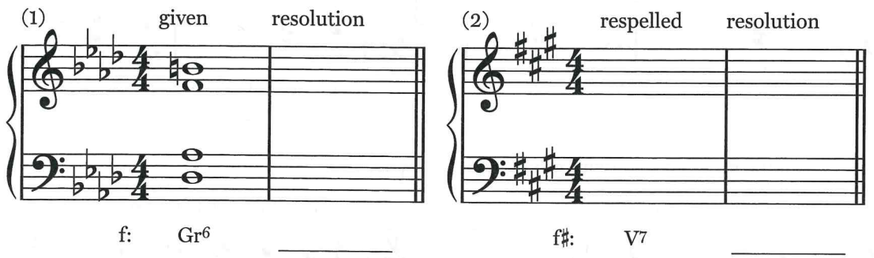
Try it #1

Write the requested V7 or Gr^6 chord in each progression, and resolve it normally. Then respell the chord as requested in the given key, and resolve it normally. Use primarily whole notes. Avoid parallel fifths in resolving the Gr^6 by writing a V$^6_{\frac{4}{3}}$ in half notes.

A.



B.



Enharmonic Modulation with Diminished Seventh Chords

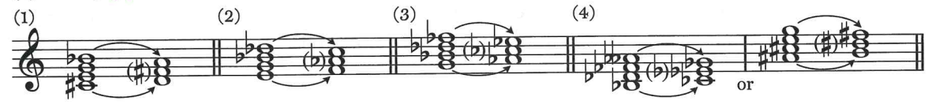
The vii$^{\circ 7}$ chord is an even more flexible means of enharmonic modulation: it may potentially resolve in four different ways (to either a major or minor "temporary tonic"), depending on how it is spelled. Because it is constructed of all minor thirds, any of its four pitches may serve as the root. For example, a B diminished seventh, if spelled with B as the root (Example 31.7a, part 1), can resolve to either C major or C minor; if spelled with D as the root (part 2), it resolves to either E♭ major or E♭ minor, and so on. Parts (b) and (c) show the other possible vii$^{\circ 7}$ sonorities; all possible $^{\circ 7}$ chords are represented in the example. In addition, in music of the Romantic era you may see a voice-leading shift from one vii$^{\circ 7}$ up or down a half step to a second vii$^{\circ 7}$ before the chord resolves to a new key.

Example 31.7: Diminished seventh chords and their possible resolutions

(a) On B

(b) On C

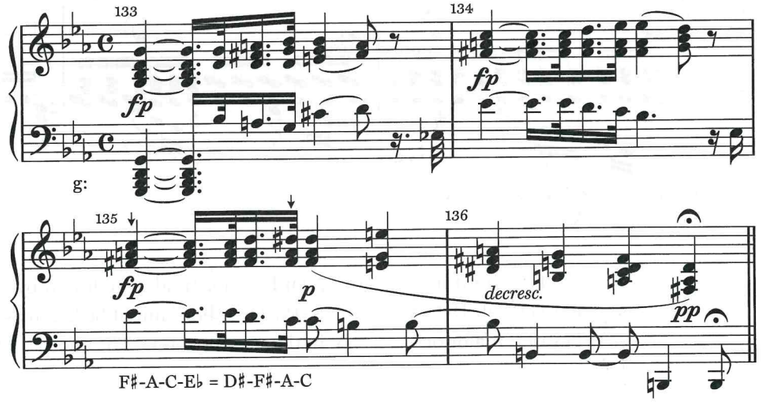
(c) On C♯



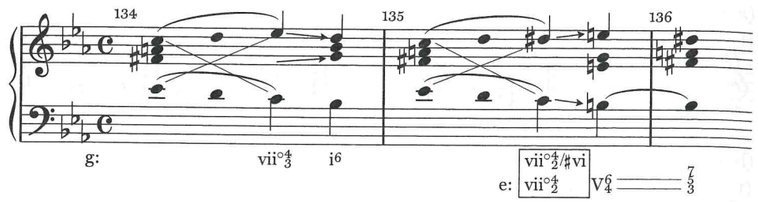
The diminished seventh chord can also serve as a secondary leading-tone chord to modulate to any major or minor key. For an example of such an enharmonic modulation, look at Example 31.8a, a passage beginning in G minor. In measure 134, an F♯-A-C-E♭ diminished seventh chord resolves to G-B♭-D after a voice exchange involving C and E♭ in the highest and lowest parts. The motive is repeated in measure 135, but the F♯-A-C-E♭ is respelled D♯-F♯-A-C on the third beat, and now resolves to a cadential $\frac{6}{4}$ in the key of E minor—the chromatic submediant of G minor. Play through the reduction in part (b) several times to hear the effect of the different resolutions of the vii$^{\circ 7}$ chord.

Example 31.8: Beethoven, *Pathétique* Sonata, mvt. 1

(a) Mm. 133-136



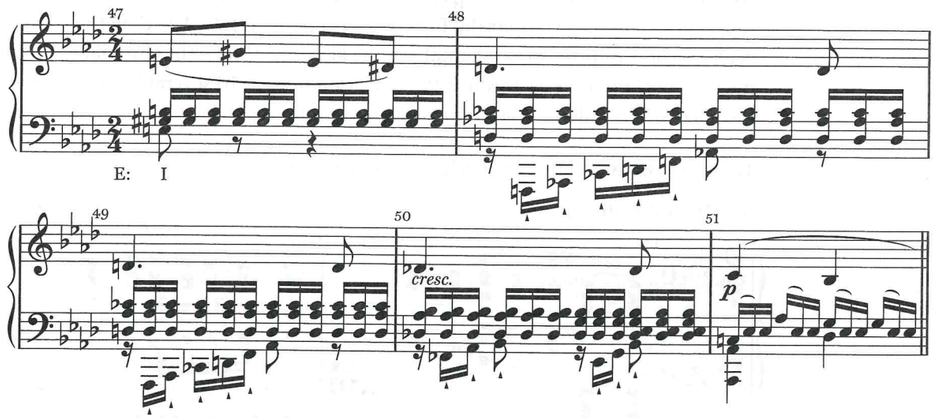
(b) Reduction of mm. 134-136



KEY CONCEPT A diminished seventh chord used as an enharmonic pivot chord can be spelled as it functions in either the first or second key. It may also appear twice, spelled once each way (Example 31.8). The enharmonically respelled chord can be used to modulate to ♭III or ♭iii, ♭V (♯IV) or ♭v (♯iv), and VI or vi.

Sometimes modulations involve a combination of techniques. Listen to the modulation in measures 49-50 of Example 31.9, the transition from E major (F♭ major) back to A♭ major.

EXAMPLE 31.9: Beethoven, *Pathétique* Sonata, mvt. 2, mm. 47-51



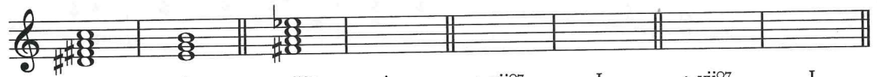
The chord in measure 47, an E major triad, is followed by a diminished seventh chord (D-F-A♭-C♭) in 48-49. This chord might be heard as vii°7/ii in the old key of E major or as vii°6/5/V in the new key of A♭. The chord that begins measure 50, a half-diminished seventh (B♭-D♭-F♭-A♭), is approached from the D-F-A♭-C♭ chord by holding the common tone, A♭, and moving the other voices down by half step. This B♭ half-diminished chord typically functions as vii⌀7 in C♭ major, but it does not resolve that way here; instead, the B♭ and D♭ are held as a common dyad, and F♭ and A♭ both move down a half step, forming an E♭-G-B♭-D♭ chord (V7 of A♭ major) on beat 2.

As should be clear, the Romantic era brought many ways to modulate, especially between distant keys. When you come across a modulation in music you are analyzing or performing, listen carefully to the passage, then examine the evidence with the techniques you have learned. With patience, you should be able to solve the puzzle.

Try it #2

Resolve the given diminished seventh chord in (1) to i or I, as shown. Then invert the chord and respell it enharmonically in (2)-(4) so that each note in turn of the original chord is the root. Resolve each chord to its tonic (i or I). In the blanks, write the key of the tonic to which each respelled chord resolves.

A. (1) given resolution (2) respelled resolution (3) respelled resolution (4) respelled resolution



B. (1) given resolution (2) respelled resolution (3) respelled resolution (4) respelled resolution

Chromatic Modulation with Sequences

Another method for creating a smooth modulation to either close or distantly related keys is by sequence. For an example, listen to the Schubert waltz shown in Example 31.10; the melody often has accented dissonances on the downbeat that resolve on beat 2.