

## Beethoven's Piano Sonata No.29, Op.106, "Hammerklavier" mvt I: *The Battle Between Bb and B Natural*

The first movement of Beethoven's Op. 106, completed in 1818, is an expansion of classical sonata form. It navigates key relationships that were uncommon in the earlier sonata, namely the chromatic mediant. It is also an evolution from the older, more classical sonata in that it is not dependent on themes for its scaffolding, but instead on tonal areas, of which themes become units, repurposed in multiple tonal areas. The movement utilizes a fugue in the development that is notably anachronistic in the midst of a late Beethoven piano sonata. While fugues were not necessarily progressive at this time, including them in an arguably romantic piano sonata was certainly a bold choice, one that pushed the boundaries of the piano sonata of the day.

The movement can be understood as a conflict between the pitches Bb and B natural. In the exposition this is heard first as a distinction between tonal areas, namely Bb major and G major, but in the recapitulation the battle between these two pitches becomes more overt.

### The Exposition

Beethoven starts the movement with a fortissimo fanfare in Bb major, written in a wide range afforded by the new fortepiano, the hammerklavier, which is this piece's namesake. This range spans Bb1 to G6 in measures 2 and 3:

The image shows a musical score for the first movement of Beethoven's Piano Sonata No. 29, Op. 106, 'Hammerklavier', measures 2 and 3. The score is in B-flat major and 3/4 time. It features a fortissimo (ff) fanfare in the right hand and a bass line in the left hand. The tempo is marked 'Allegro.' and 'a tempo.' with a star symbol indicating a change in tempo. The bass line starts with a pickup note in measure 2.

This first thematic element, loud and bombastic, contrasts sharply with the delicate second thematic element, which begins with a pickup to measure 5:

— vii/V vii/ii vi/vi — half cadence ritard.

In measure 5, a  $vii^{o7}/V$  is applied on the second beat taking us to an F major chord on beat three. Similarly, a  $vii^{o7}/ii$  is implied on the fourth beat of the measure. This chord requires a B natural, the presence of which is the first foreshadowing of the aforementioned battle between Bb and B natural that is arguably the central conflict of the entire movement. Beat two of measure 6 continues the pattern of applied half diminished seventh chords with one leading to G minor (vi) on beat three.

On beat three of measure 8 a ritardando lands us on a half cadence. This theme is repeated in a higher register from measures 9-11 before succumbing to a bass descension in measures 12-15 that introduces Gb major (bVI) and Bb minor (i) to the harmonic palette.

*crescendo poco a poco*  
bVI i bVI

The second thematic element is concluded with a perfect authentic cadence landing on the downbeat of measure 17. This is also the start of the third thematic element:

PAC

The rhythm of two half notes followed by four quarters in this thematic element will be used as written and also syncopated at future points in the movement. Destabilizing chromaticism takes hold in measure 25, but a descending Bb major scale from measures 27-30 and a prolonged dominant from measures 31-34 reassert the key. A perfect authentic cadence is achieved at measure 35 coinciding with the start of the first thematic element again. However, this time the second half of the fanfare is reharmonized in a D major chord:



The prolongation of this D7 chord through measure 44 affirms its status as a dominant of the second tonal area. However, the listener assumes the new key will be G minor as this is the relative minor of Bb major. Although Beethoven gives us no definitive tonic until measure 51, the presence of B natural in measures 45-50 informs us that something is amiss; G minor will not be the second tonal area. The subverted expectation of G minor to G major is a fitting setting of the conflict between Bb and B natural, which will come to prominence in the recapitulation.

The fourth thematic element, the flowing eighth notes that cascade from measure 47 to 62, land warmly in the tonic of G major in measure 51. The listener now understands the second tonal area is undoubtedly G major, which shares a chromatic submediant relationship with Bb major:



A form of the second thematic element enters in measure 63 and leads to a half cadence in measure 66:



It undergoes a sequential transformation in measure 70-74 using a wide variety of nondiatonic harmony. Notice the ascending fourths in the top line of measures 70-73; B, E, A, D, G, C#(augmented fourth), F#, B:



Ironically, the nondiatonic harmony this sequence creates does directly lead to a new tonal area. Instead it pilots back to G major again in measure 75. Perhaps, in the middle of what was originally planned as a transition, Beethoven realized he had more thematic material to present in G major, so he rerouted back. In any case, measure 75 begins the fifth thematic element.

The cascading eighth notes that defined the fourth thematic element are carried into this one now in just the right hand, but what is most salient is the left, which at first presents dominant to tonic chords in a rhythmic ratio of 3 to 1. This firmly confirms the tonal area:



In measure 79, however, the left hand plays a figure in octaves which stresses the interval of a fourth that was prominent in the right hand starting at measure 70. This is reasserted and continued in measures 85-89 where B goes to E (m. 85), E goes to A (m. 87), A to Db (m. 89):



to Bb instead of B natural. He repeats Bb from measures 122-125 as if to say, “Yes, it really is that simple to modulate between chromatic mediants.”:



His second ending simply replaces the aforementioned mentioned ascension from G to Bb with a stepwise ascension from G to A to B natural and then from B to C to D in measure 129. At this point the listener is unsure what to make of this D in octaves. No chord quality accompanies this landing. A listener could fairly assume the development might start in D major, however, this is not the case.

### The Development

The D that ended the exposition serves as a dominant to G major to start the development. The thematic material to start the section is the syncopated third element just used at the end of the exposition. The syncopated half note starting on beat two provides rhythmic propulsion that pushes this transition section towards its goal of the fugue in measure 144:



Through the use of F natural, the G major quality morphs into a dominant of C minor (m. 133). This C minor (iv in G, but vi in Eb) serves as a pivot chord to Eb major. This key is asserted with a fermata at measure 137 and reasserted twice with the fanfare-like dotted rhythmic character of the first thematic element:

At measure 144 the most important element of the development begins; a fugue in Eb major:

The first thematic element (the fanfare) is presented first in the right hand on Eb and then promptly in the left hand on Ab. The texture gradually increases from two voices to three in measure 153 where the fugal element begins on Bb and then on Eb a measure later. At measure 162 the texture increases to four voices and the element is started on both Bb and Eb at the same time. At measure 163 the top voice now starts the fugue on Eb while the tenor voice starts it on C. At measure 173 the listener finds himself in C minor. The keys of Eb major and C minor elegantly display the Bb/B natural conflict in their dominants, the dominant of Eb being Bb and the dominant of C requiring a B natural. This is shown in measures 183 and 184 where the dotted rhythm of the first thematic element appears stressing B natural as the leading tone to C. In measure 191 this dotted rhythm uses Bb as the dominant of Eb:

In measures 199-202 diminished chords destabilize the Eb harmony established in the fugue. The result is a prolonged D major chord from measure 203 to 206. This D major is not used as a

dominant, however, like it has been used in the past. This time the D major chord shifts by common tone (F#) to B major at measure 207 and it is here where the sixth thematic element is rekeyed.

Four measures of constant eighth notes in the right hand, the signature of the fourth thematic element, begin at measure 215. At measure 219 the fugal element returns, now on C#. In measure 220 it starts on A#, then on C# again in measure 221, on E in measures 222-224 and on A# again in measures 225-226. All this implies A# diminished as if we are returning to B major. Note that A# is enharmonically equivalent to Bb.

From measure 229 to 232 Beethoven employs 6-5 motion to transition to Bb major. G to E is adjusted to become G# to E, then adjusted again to become A# to E. Next, the E is raised to F. The A# is then reinterpreted as Bb, the home key and the logical place to start the recapitulation:

### The Recapitulation

The recapitulation starts with the familiar first thematic element. The second element begins with a pickup to measure 237 and continues to the half cadence at measure 240. The next section deviates harmonically from how it was presented in the exposition, namely by the introduction of Gb in measure 245:

At measure 255 the third thematic element is presented in the new key of Gb major, a chromatic submediant to Bb major. At 261 Cb minor is introduced, which is iv in the key of Gb major. The I to iv relationship was exploited earlier in the beautiful sixth element (mm. 100-103):



Cb minor is certainly the minor iv of Gb major, but importantly, it is also enharmonically equivalent to B minor, thus it continues to highlight the conflict between Bb and B natural.

In measures 269-272 Db major is a dominant which resolves to the enharmonic equivalent of Gb, F#. This F# major then serves as the dominant to B minor. The fanfare theme is then presented at 275 for the first time in a minor key and also only a half step away (Bb major vs. B minor):



The fact that the minor rekeying of this prominent fanfare theme occurs in the recapitulation and not the development is unusual and demonstrative of how much Beethoven helped evolve and expand the sonata form.

At measure 285 the fourth thematic element from the exposition (and the first in G major) is presented in the home key of Bb major. This could arguably be called the “second theme” if a more conventional sonata analysis were applied to this movement.

Just like in the exposition, a form of the second thematic element begins at measure 301 and similarly achieves a half cadence 3 bars later in measure 304.

A musical score snippet for piano accompaniment. The top staff is marked *p dolce* and *a ten*. The bottom staff is marked *poco ritard.* and *half cadence*. The music is in a minor key and features a sequence of chords in the bass line.

The transition sequence at measure 308 is the same as the one at measure 70, just a minor third higher. The pitches in the top line follow the same pattern of fourths; D, G, C, F, Bb, E (augmented fourth), A, D. In measures 310-312 Bb and B natural are both used as the harmony feels unstable. However, Bb major clearly wins out in measure 313 with the use of fifth thematic element.

The sequence of fourths that begins in measure 323 takes the bass from D to G, then in measure 325 from G to C, then in 327 from C to Fb (diminished fourth). Measure 329-331 seems to be in Eb, the primary key of the development:

A musical score snippet for piano accompaniment. The top staff is marked *cresc.* and *ff*. The bottom staff has a *B. 152. \** marking. The music is in a minor key and features a sequence of chords in the bass line.

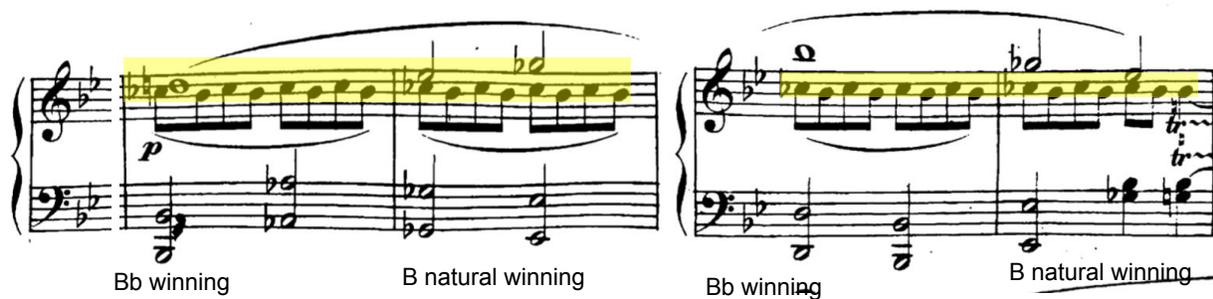
All of measures 332-337 could be said to be dominant preparation for Bb major again. The C7 that starts at 332 is V/V which resolves not to V, but to Bb in second inversion. An augmented dominant occurs in measure 337 (F+7):

A musical score snippet for piano accompaniment. The top staff is marked *10 (64)*, *cresc.*, and *p*. The bottom staff has a *F+7* marking. The music is in a minor key and features a sequence of chords in the bass line.

At measure 338 the haunting sixth thematic element is now presented in Bb major, but the B diminished chord in measure 342 reminds the listener that the conflict between Bb and B natural is not over:



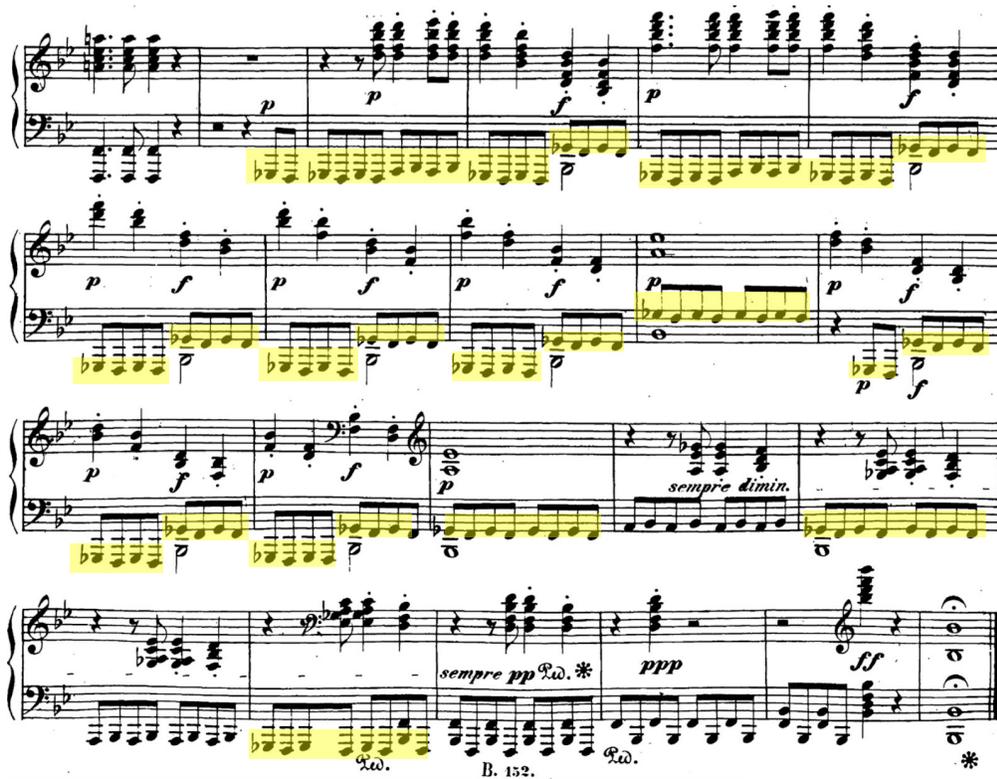
Tension builds when the syncopated version of the third thematic element returns at measure 350. Consistent and unrelenting eighth notes in octaves start in both hands at measure 356. Measure 358 contains both notes; Bb and B natural, foreshadowing of the more overt conflict to come. This conflict is most dramatic at measure 368. A trill alternating between Cb (B natural) and Bb which lasts for four measures represents the battle between the two. In the first of these measures the Bb seems to be winning as the trill accompanies a Bb major chord, but in the second measure Cb takes the upper hand as the chord changes to Cb minor. In the third bar Bb is winning and in the fourth Cb seems to dominate:



Four measures of the Bb major scale (mm. 379-382) are almost enough to imply B natural has finally been banished. However, in measure 383 the B natural returns as part of a G dominant chord on the last eighth note of the measure. This drives us to C minor in 384. Again, the last eighth note of measure 384 is a G7 which includes B natural. This conflict is still alive.



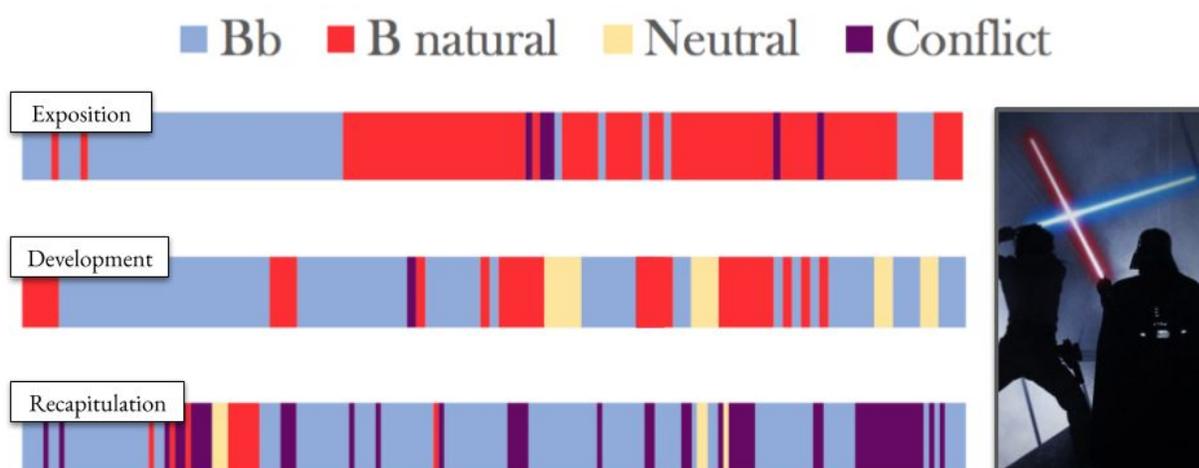
At measure 391 the conflict emerges anew between the dominants of Bb and B natural, which are F and F#. F# is spelled as Gb, just as B natural was spelled as Cb earlier. Presumably this is for readability reasons as including accidentals before each note would be a mess. Material from both the first and third thematic elements is in the right hand, while the battle of the dominant pitches continues in the left hand all the way to measure 403:



At measure 404 Bb seems to be victorious as the trill switches to A and Bb. Then Gb and F battle in the following measure (405), Bb seems to conquer again in measure 406, the two dominants battle again in measure 407, and then finally, from measure 408 until the end, Bb asserts itself the victor.

This conflict presents itself in a narrative fashion. The notes Bb and B natural are not in direct opposition when the listener first hears them. Instead, each is presented in a fitting setting. The development continues this as the two pitches are presented in a relatively distinct manner. However, the recapitulation forces the two pitches to occupy the same space, much like any hero and his villain must eventually meet to battle.

## THE BATTLE BETWEEN B FLAT AND B NATURAL



Beethoven's 29th piano sonata is not programmatic, but it is narrative. The composer expands and evolves the sonata form of his day to fully explore the epic battle between Bb and B natural.

**Exposition: mm. 1-129**

First Tonal Area (I) - Bb Major - mm. 1-36

First element (I.1): mm. 1-4

Second element (I.2): mm. 5-16

Half cadence: m. 8

Perfect authentic cadence: mm. 16-17

Third element (I.3): mm. 17-24

Transition link: mm. 25-34

First element (I.1): mm. 35-38 (Bb Major abruptly changes to D Major)

Transition link (Dominant Preparation): mm. 39-51

Second Tonal Area (II) - G Major - mm. 47-69

First element (II.1): mm. 47-62

Second element (II.2): mm. 63-74

Half cadence: m. 65

Transition sequence: mm. 70-74 (Harmonies: Em, Dm, C, Bm, A, D) (Top voice: B, E, A, D, G, C#, F#, B, E#(F), A, D)

Third element (II.3) : mm. 75-90

First sub-element: mm. 75-78 (V, V, V, I, V, V, V, I)

Second sub-element: mm. 79-80 (B, E, C#, D)

First sub-element: mm. 81-84 (V, V, V, I, V, V, V, I)

Sequence off second sub-element: mm. 85-90 [(B, E, C#, D, Eb),(E, A, F#, G, Ab),(A, Db, B, C)]

Second element (II.2): mm. 91-93 in C Major

Link: mm. 94-99 in G Major

Fourth element (II.4) (against a triple alberti bass): mm. 100-105, (against duple alberti): mm. 106-111

Link: mm. 112-119 (I.3 at m. 17)

First ending: mm. 120-125 (fortissimo octaves: G, A, **Bb**)

Second ending: mm. 126-129 (G, A, **B, B**, C, D)

**Development: mm. 130-232**

First element transition: mm. 130-135 (uses **I.3**, syncopated early by one beat, transitions from G Major to Eb Major)

Third Tonal Area (**III**) - Eb: mm. 136-182

Announcement of Eb Major: mm. 136-143

Fugato: mm. 144-182

Theme using **I.1**:

m. 144: Eb

m. 145: Ab

m. 153: Bb

m. 154: Eb

m. 162: Eb & G

m. 163: C & Eb

m. 173: C & Eb

m. 174: F & Ab

Transition: mm. 183-206

mm. 183-186: G7

mm. 187-190: C Minor

mm. 191-194: Bb7

mm. 195-196: Eb

mm. 197-198: D

mm. 199-200: G#<sup>o7</sup>

mm. 201-202: C#<sup>o7</sup>

mm. 203-206: D

Fourth Tonal Area (**IV**) - B Major mm. 207-

**II.4** element used in B Major over triple alberti bass: mm. 207-218

Fugue content - mm. 219-229

on A#: m. 219-220

on C#: m. 221

on E: m. 222-224

on A#: m. 225-226

6-5 motion takes us from IV (E, G#) to vii<sup>o</sup> (E, A#) to I<sup>6/4</sup> of Bb (F, A#) to Home Key (Bb):

mm. 230-232

### Recapitulation: mm 233-411

Fourth Tonal Area (IV) - Bb Major: mm. 233-244

First element (I.1): mm. 233-236

Second element (I.2), but transitions to Gb Major by m. 245: mm. 237-254

Fifth Tonal Area (V) - Gb Major: mm. 245-272

Third element (I.3) - Gb Major: mm. 255-262

Transition link: mm. 263-272

Sixth Tonal Area (VI) - B Minor: mm. 273-278 - G Major (VI of B minor) is a pivot chord, acting as V/ii in Bb Major

First element (I.3) - B Minor: mm. 273-274

Transition link (Dominant Preparation): mm. 275-284

Seventh Tonal Area - Bb Major: mm. 285-411

First element (II.1): mm. 285-300

Second element (II.2): mm. 301-312

Half cadence: m. 304

Transition sequence: mm. 308-312 (Harmonies: D7, C7, Bb7, A7) (Top voice: D, G, C, F, Bb, E, A, D, Ab(G#), C, F)

Third element (II.3): mm. 313-328

First sub-element: mm. 313-316 (V, V, V, I, V, V, V, I)

Second sub-element: mm. 317-318 (D, G, E, F)

First sub-element: mm. 319-322 (V, V, V, I, V, V, V, I)

Sequence off second sub-element: mm. 323-328 [(D, G, E, F, Gb),(G, C, A, Bb, Cb),(C, Fb, D, Eb)]

Second element (II.2): mm. 329-331 on IV (Eb Major)

Link: dominant preparation in Bb Major: mm. 332-337

Fourth element (II.4) in Bb Major (with minor iv): mm. 338-349

Extended link using third element from first tonal center (I.3 at m. 17): mm. 350-367 - This link hits the major tonal centers of the piece in order (**Bb**: m. 356, **G**: m. 359, **Eb**: m. 363, **B**: m. 368)

Fourth element (II.4): mm. 368-378

Combat between Bb and B natural (enharmonic Cb) in trill: mm. 368-371

Triumph of Bb: mm. 372-378

Coda: mm. 379-411

Assert Bb in scale: mm. 379-382

First half of first element (I.1) used to harmonize Cm, D, Eb, F: mm. 383-390

Prolonged dominant pedal (but fluctuates between Gb and F, the enharmonic sols of B natural and Bb) with first element (I.1) and third element (I.3) link material: mm. 391-402

Second half of first element (I.2): mm. 404-408