IB Music Experimenting

jcn514

March 30th, 2023

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1 Experimenting as a Creator

1.1 Reinventing 2000s EDM as Orchestral (AOI 4)

To experiment with my ability to *add* musical texture in an arrangement, I chose to reinvent in the local context a 2000s electronic song I've known and loved for a long time. First published on the site Newgrounds by user Dimrain47, "The Falling Mysts" is a trance-style EDM song, which I've always appreciated for its melodic focus overtop a simple but skillfully fitting harmony. I've been eager for a while to arrange this song for a small chamber orchestra, and I decided upon an instrumentation of a string quartet joined by Flute, B♭ Clarinet, and Bass Clarinet. Despite having similar registers, I chose a Bass Clarinet over a Bassoon due to its more mellow attack, which I thought would better compliment the other wind instruments in octaves while blending nicely into the strings for harmony. In past arrangements, I've taken notable creative liberties in 'reharmonizing' the harmony and changing the melody, so I intended to maintain the core of the song, opting instead to familiarize myself with more subtleties like strings techniques, playability(!), voicing, and voice leading. As such, I employed pizzicato, violin harmonics, *sul ponticello*, double stops and more in my string writing to convey more texture and variety in the sound. Also, in comparison to more classical settings, I enjoy EDM's emphasis on the natural minor scale over the leading tones in a harmonic or melodic minor scale. This can be seen in the heavy use of the $\flat VII$ and v chords, which culminate in the main chord progression of i–$\flat VII$–$\flat VI$–v–i. The walk-down and the v–i cadence gave me many notable musical moments to employ parallel movements and tactful voice leadings, and, towards the end, I used very open, regal string voicings with these chords to imply very clear harmonic function and create a solemn tone. Overall, I am incredibly proud of the result.

The sheet music is the first attachment in the appendix.

1.2 Etude in Jazz Style 5/8 for Drums and Piano (AOI 4)

My second experiment was with 54 Cymru Beats, a song in the global context by Aphex Twin consisting of a diverse set of electric samples in an odd-time signature drum beat. As a pianist, I found this stimulus highly interesting as I delved into the intricacies of percussion tracks and samples, referencing genres like Jazz Fusion to contextualize my research. In particular, I was captivated by the 5/4 and 5/8 time signature, so I sought to reproduce a similar effect in an etude for drums and piano. I decided to include some jazz harmony in my experiment to add more driving momentum to the drum part in the song. I found it difficult, initially, to compose in 5/8, because I was fruitlessly trying to obtain a sort of "rhythmic symmetry" which I found nearly impossible. Once I gave into the lopsided breakdown of *one–two–one–two–three*, I had freedom to incorporate syncopation and parallel movement in the piano, creating a fascinating sound that can be hard to pinpoint as a listener. Similar to Aphex Twin's use of samples to confuse the rhythm, I decided to directly change time signatures in key moments to

4/8 or even 4/4 to create, momentarily, a false expectation of rhythmic symmetry. I found this experiment also useful in teaching me the basics of using drum fills to drive rhythmic interest, which opened my eyes to how drum sections can grow and adapt to the song over time. I'm proud of the end result, and I believe it captures the essence of the disorientating 5/8 time signature well.

The sheet music is the second attachment in the appendix.

1.3 Creating Music Software for Pure Sine Waves (AOI 4)

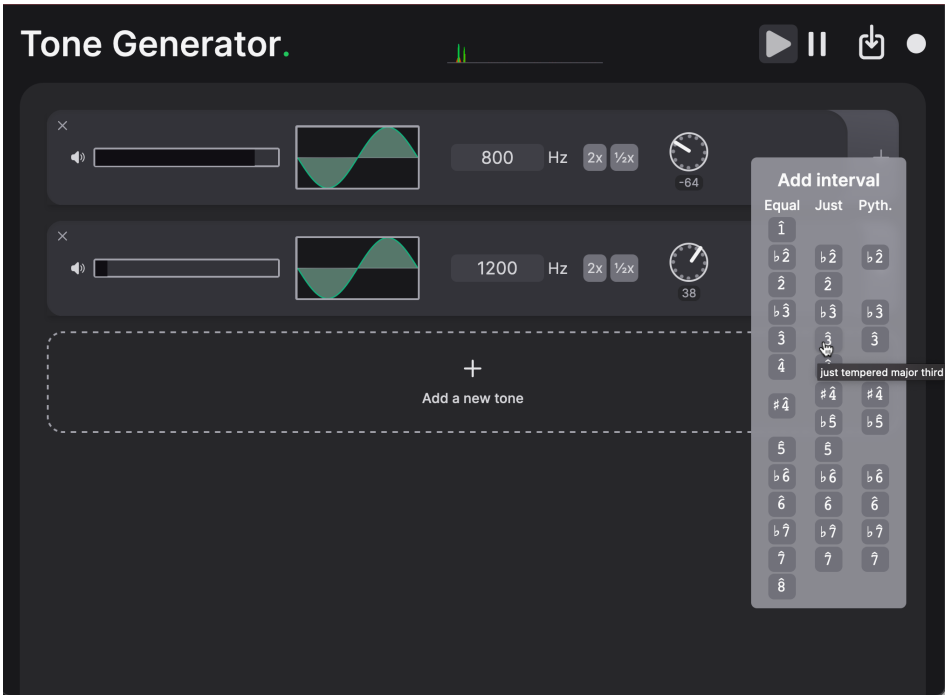


Figure 1: The Web Interface of my Tone Generator Showing the Just- and Pythagorean-Tuned Interval Capabilities

As I further explored the more experimental sounds in the electronic music genre, I encountered a number of pieces using minimalist sampling techniques and "pure" sine frequencies to create very resonant sounds. In particular, Ryoji Ikeda's data.matrix leverages pure sine waves as well as rapidly panned noise synths to create a fast-paced, almost artificial sound. I wanted to mimic this, however the existing music creation software makes it difficult to compose with pure sine waves, so I wrote my own web-application to do so. Using the Web Audio API,[1] I made it possible to play and record/save certain soundscapes with pure tones, as well as an interface to ease in stacking intervals or harmonics in different tuning ratios (just intonation vs. pythagorean vs. equal temperament). The result is an intriguing blend of both these artificial sounds (sine waves and noise synths) and a small amount of VST piano and reverb to tie the piece together. I chose to do so

[1] *Web audio API*. URL: `https://developer.mozilla.org/en-US/docs/Web/API/Web_Audio_API`.

because pure sine wave tones lack any harmonic overtones (like integer multiples of the fundamentals in a string) and, as such, sound quite indistinguishable and muddy if in a lower register. In comparison, pure sines at higher frequencies sound shrill, which is not ideal. Despite this, I found it fascinating to explore just intonation and how it can contribute to the resonant quality of a harmony—especially with the sensitivity of pure sine waves to slight desynchronizations, or "beating" effects. For instance, a just intonated major third has a ratio of 5:4, making for a more pleasing sound, than the highly irrational equal temperament ratio of $(\sqrt[12]{2})^4$. In the lower registers, these perfect integer ratios created a very blended harmony, even with complex chord extensions in the chord progression, like minor ninths, half-diminished sevenths, and altered dominants.

2 Experimenting as a Performer

2.1 "Futile Devices" And My Foray into Harp (AOI 1)

In AOI 1, I chose to experiment with the song "Futile Devices" by Sufjan Stevens in the global context. This song is notable for its appearance in Call Me By Your Name, a 2017 movie exploring LGBTQ issues, serving as a form of political expression.[2] With this, I chose to experiment with the Harp, an instrument with which I had absolutely no prior experience. I arranged, transposed and improvised on the main ostinato of the song, learning about the intricacies of the Harp to make this process more simple. I first familiarized myself with basic technique and the arrangement of the Harp's pedals. From its tuning in C with all pedals in the middle position, I tuned it to C dorian by flattening the 3rd and 7th scale degrees. This was to make my life easier, transposing the harmony from $F\sharp$ dorian/$C\sharp m$ to C dorian/Gm so I could use the red and black strings to better orient myself (1 and 4 respectively). I began by playing the main arpeggio, outlining a $Cm7$/G, then transitioning to the $F7sus4$ and $F7$, using both hands to get it to tempo. In variation form, I progressively added more layers to the melody, eventually incorporating it in octaves in both hands. The last portion was the most challenging, where I played the second ostinato, outlining more chord extensions, in the RH, while maintaining both the first ostinato and the harmony in the LH. Overall, I was proud of my progress in about a week in-class and without any instruction.

2.2 Improvising on Coltrane's "Alabama" Vamp (AOI 1)

In AOI 1, I choose to experiment with John Coltrane's "Alabama," in the local context. In the piece, Coltrane uses his mastery of modal thinking in jazz to convey the deplorable treatment of people of color in the US during the 1900s. It's said that he attempted to mimic the cadences of Martin Luther King Junior's

[2] Z.S. van Harten. *Call me queer: Queer theory and the soundtrack of call me by your name.* 2018. URL: `https://studenttheses.uu.nl/handle/20.500.12932/37421`.

speeches with his improvisational melody.[3] I planned to experiment with his highly motivic "vamp" harmony with some improvisation in the melody. In Coltrane's improvisation, he sits on this C minor harmony, with a melodic emphasis on a ♭7–1 resolution, or a v–i resolution, establishing a highly natural minor sound (in comparison to the implied harmonic minor of many classical pieces). To try to reinvent this style in a novel way, I experimented with a Fm–F dorian harmony in an improvisational way, focusing on the sound of a iv–i resolution. I wanted to experiment with Coltrane's ideas of a modal vamp while reinventing it in my own style, so I opted for a dorian modal emphasis instead of the natural minor he uses. Overall, I am proud of the experiment, since I believe it expanded my improvisational vocabulary and my harmonic understanding of using vamps to drive interest.

2.3 Reharmonizing a National Anthem (AOI 1)

In AOI 1, I chose to experiment with the Russian Anthem, in the global context. I planned to experiment with the harmony of the piece—specifically by reharmonizing elements of it and varying the key. I planned to do this because it employs a simple harmony with virtually no chord extensions or modulations. By experimenting with it, I will convert it towards a more jazz-influenced style, with a more complicated harmony, including a number of distant modulations scattered throughout. In this way, I plan to transform the melody into a different context, enriching its simplicity with new harmony. The techniques I employed included secondary dominants, swapping out chords with similar chord function and using chromatic movement to inform harmony. I also attempted to incorporate a number of key changes, which added to the perceived complexity of the piece. Overall, it was a success in expanding my harmonic understanding.

[3] WBGO — By. *"they did not die in vain": On "Alabama," John Coltrane carefully wrought anguish into Grace*. 2020. URL: https://www.wbgo.org/music/2020-11-18/they-did-not-die-in-vain-on-alabama-john-coltrane-carefully-wrought-anguish-into-grace.

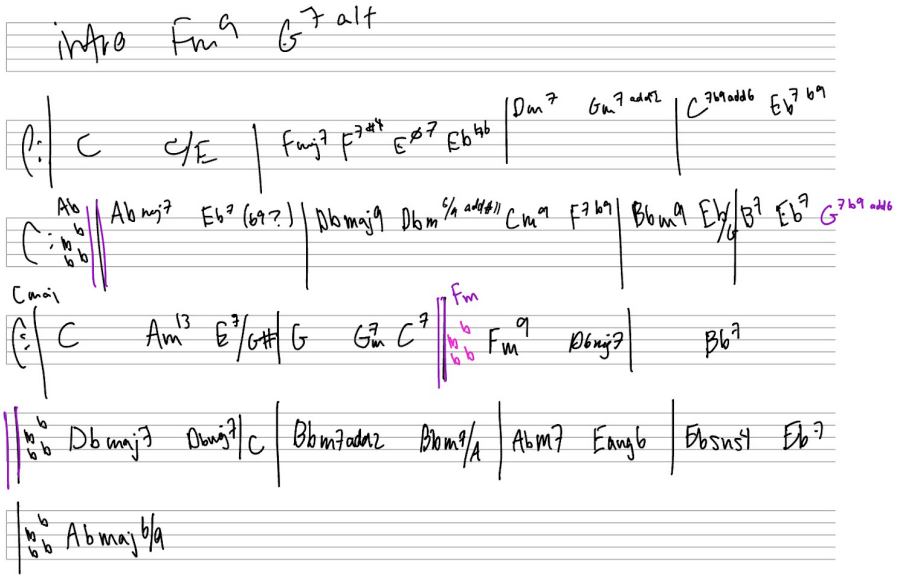


Figure 2: My Handwritten Lead Sheet for the Russian Anthem Reharm

3 Track List

Track	Start	End
"The Falling Mysts" EDM for Chamber Orchestra	0:00	2:15
5/8 Time Signature Etude for Piano and Drums	2:19	3:47
Pure Sine Waves and Just Intonation	3:51	4:40

Table 1: Experimenting as a Creator

Track	Start	End
Arranging for and Learning the Harp	4:44	6:14
Coltrane's "Alabama" and Modal Improvisation	6:18	8:16
Reharmonizing a National Anthem	8:20	9:38

Table 2: Experimenting as a Performer

4 References

By, WBGO —. *"they did not die in vain": On "Alabama," John Coltrane carefully wrought anguish into Grace*. 2020. URL: https://www.wbgo.org/music/2020-11-18/they-did-not-die-in-vain-on-alabama-john-coltrane-carefully-wrought-anguish-into-grace.

Harten, Z.S. van. *Call me queer: Queer theory and the soundtrack of call me by your name*. 2018. URL: https://studenttheses.uu.nl/handle/20.500.12932/37421.

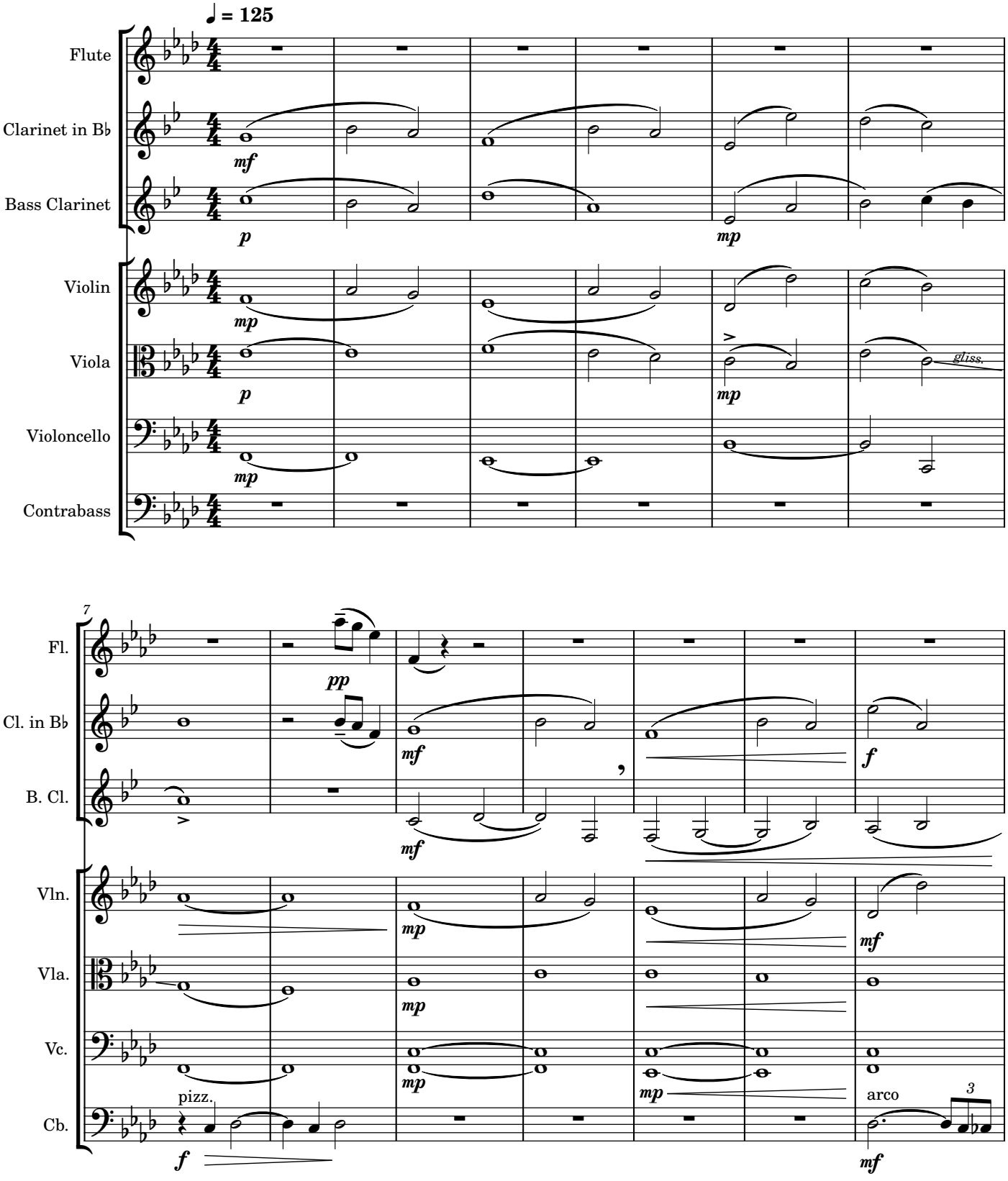
Web audio API. URL: https://developer.mozilla.org/en-US/docs/Web/API/Web_Audio_API.

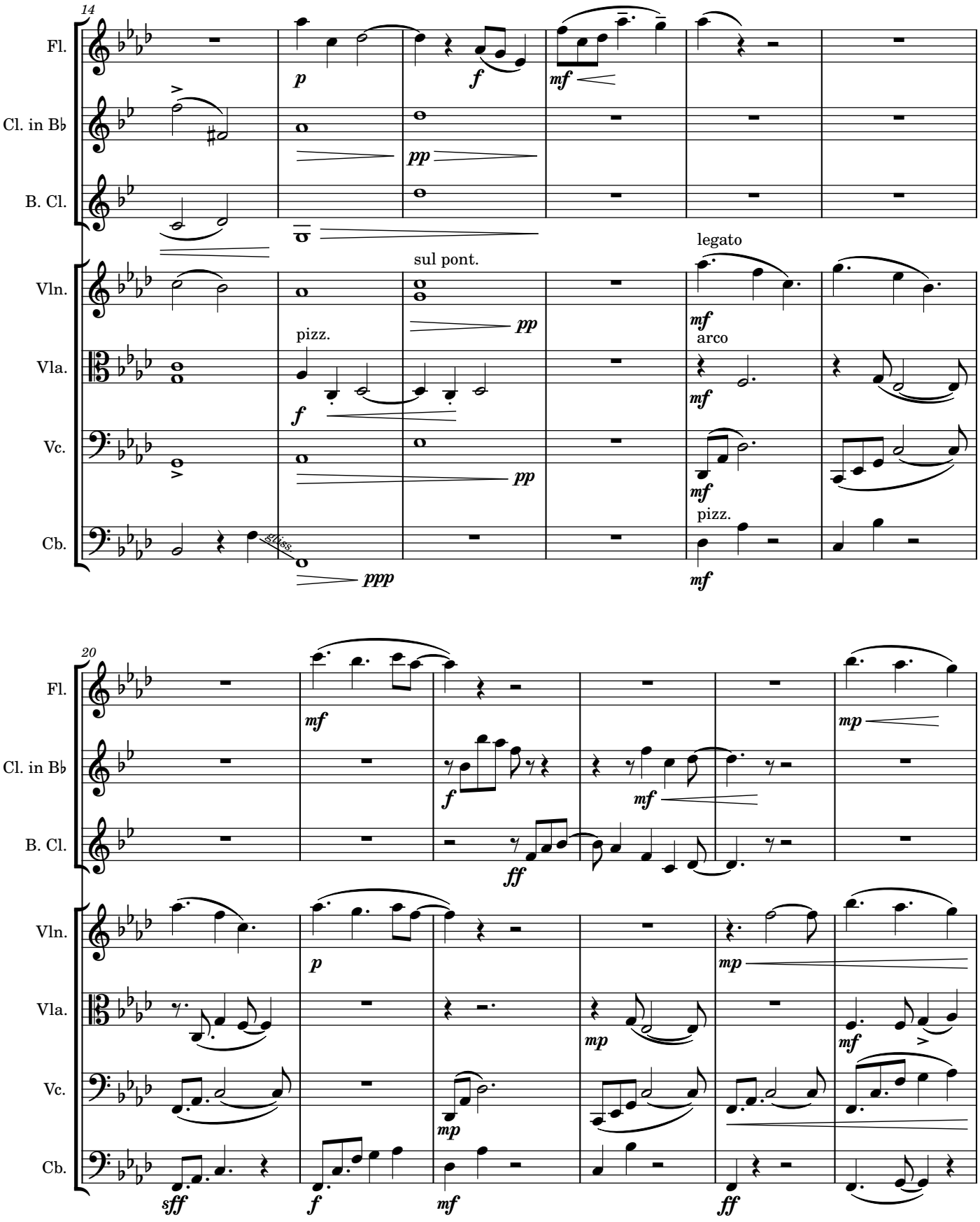
5 Appendix

Arrangement of "The Falling Mysts"

Dimrain47

jcn514

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Fl.
Cl. in B♭
B. Cl.
Vln.
Vla.
Vc.
Cb.
p
f
mf
pp
sul pont.
legato
pizz.
arco
ppp
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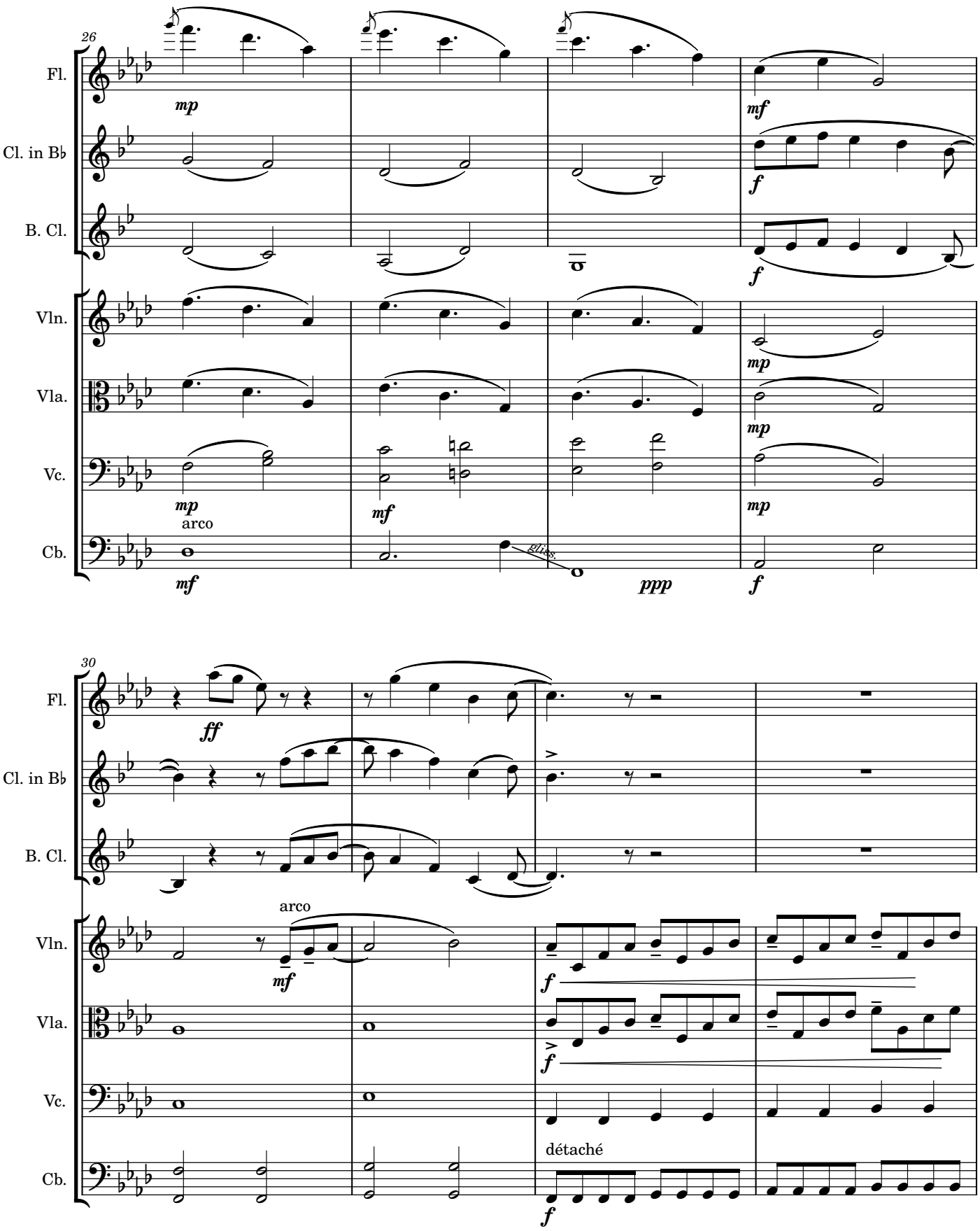
sff
ff
mp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mf
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arco
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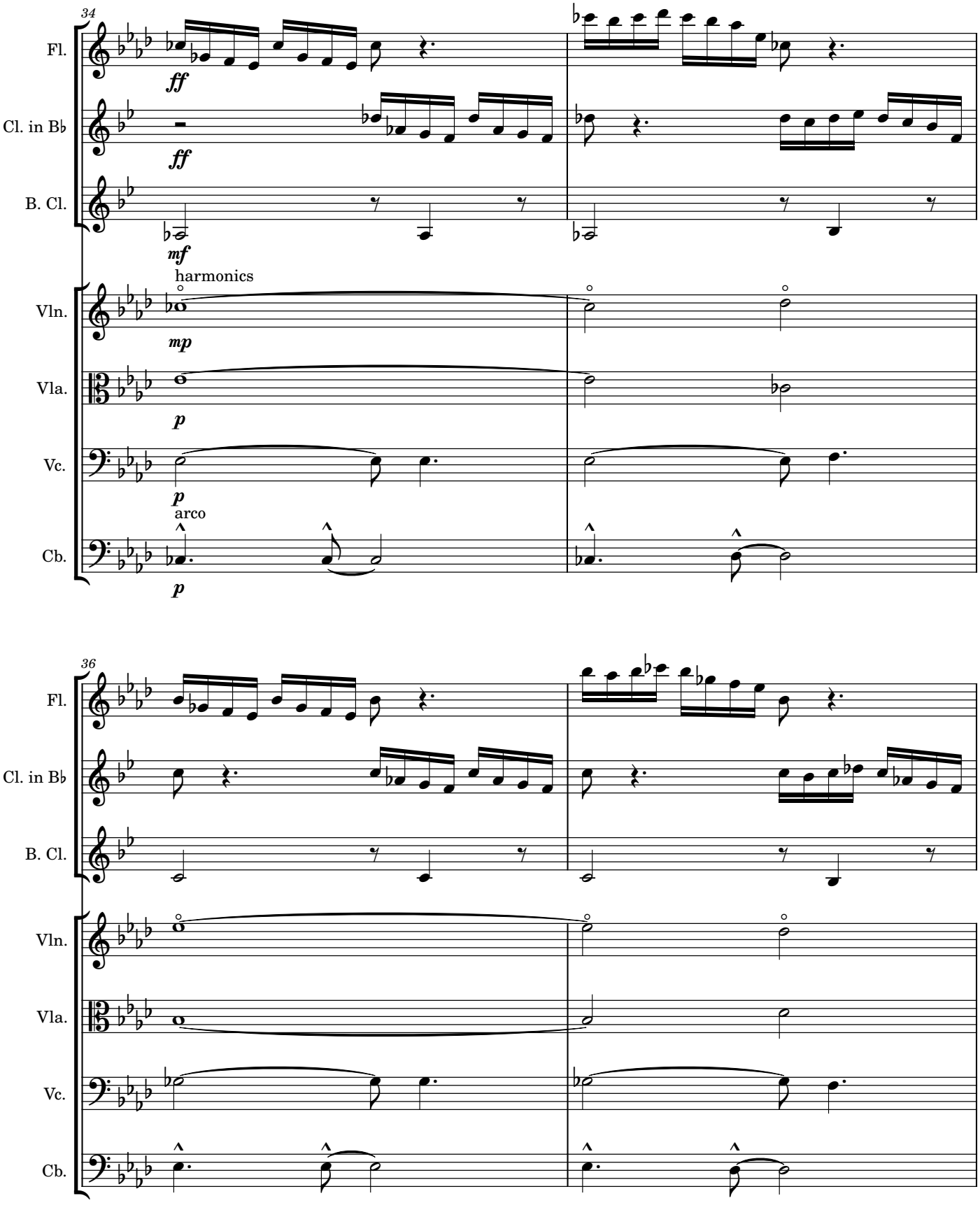
ff
détaché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Vc.
Cb.
ff
ff
mf
harmonics
mp
p
p
arco
p
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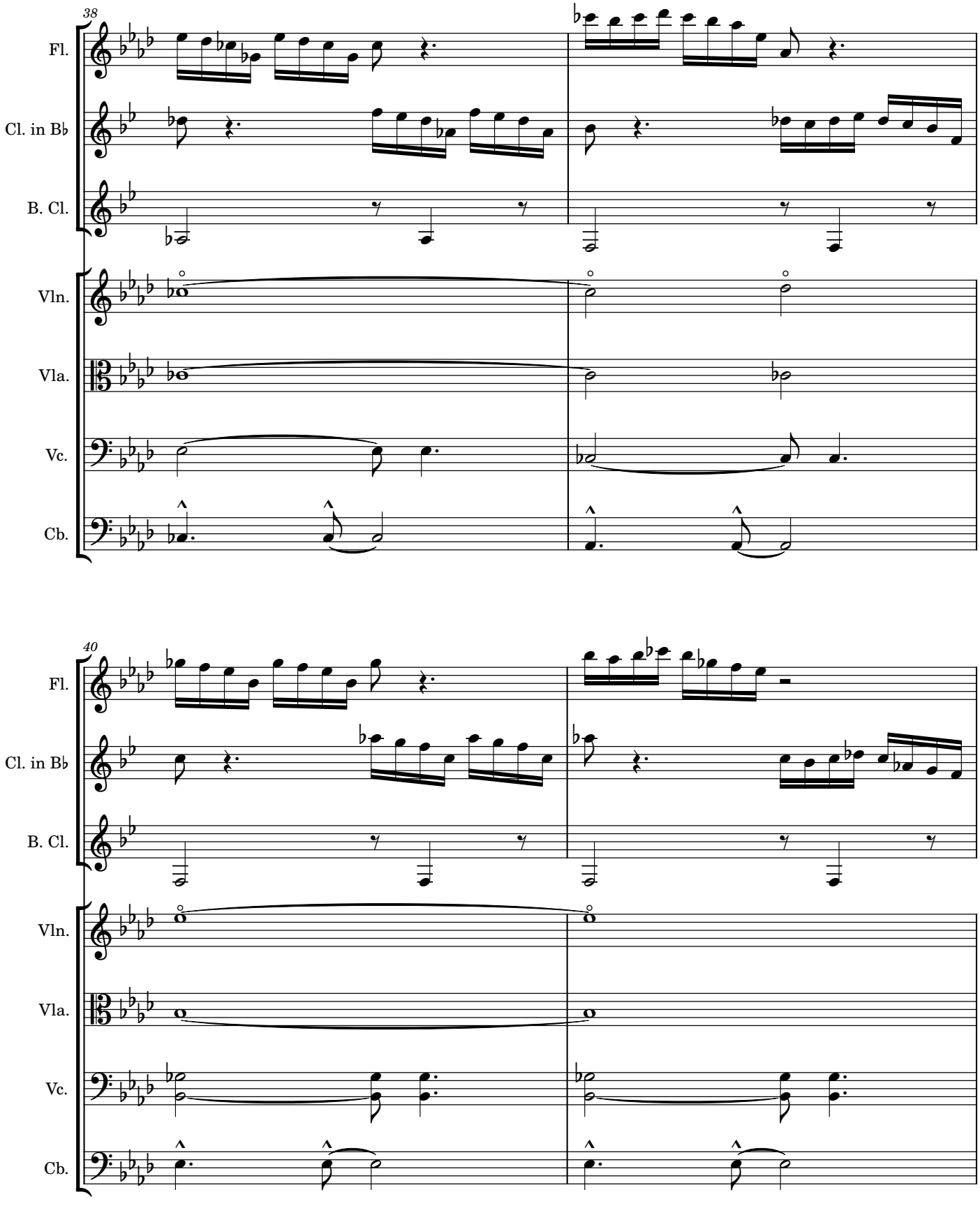
Cb.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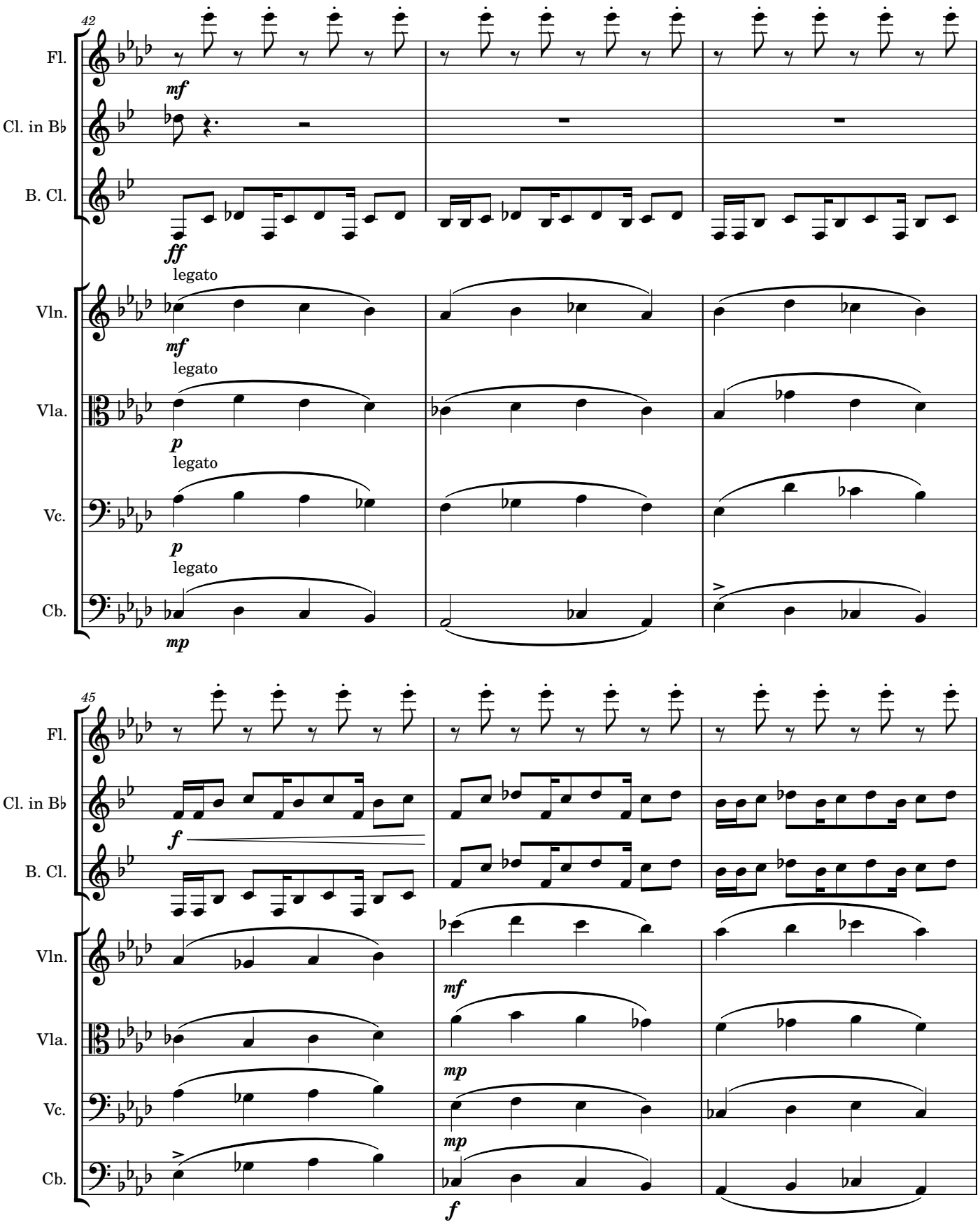
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ff
legato
mf
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p
legato
p
legato
mp
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mp
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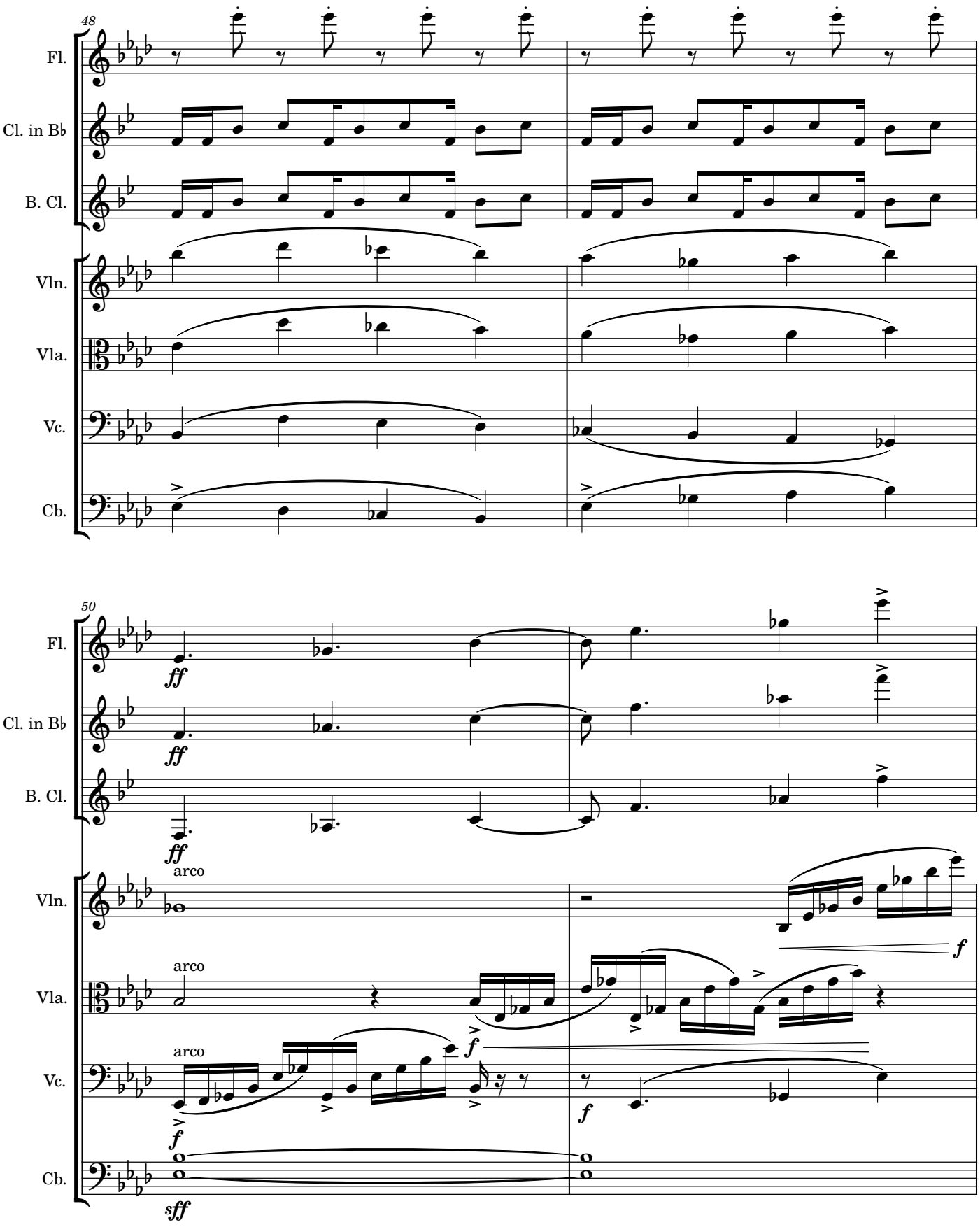
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Cb.
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Cl. in B♭
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arco
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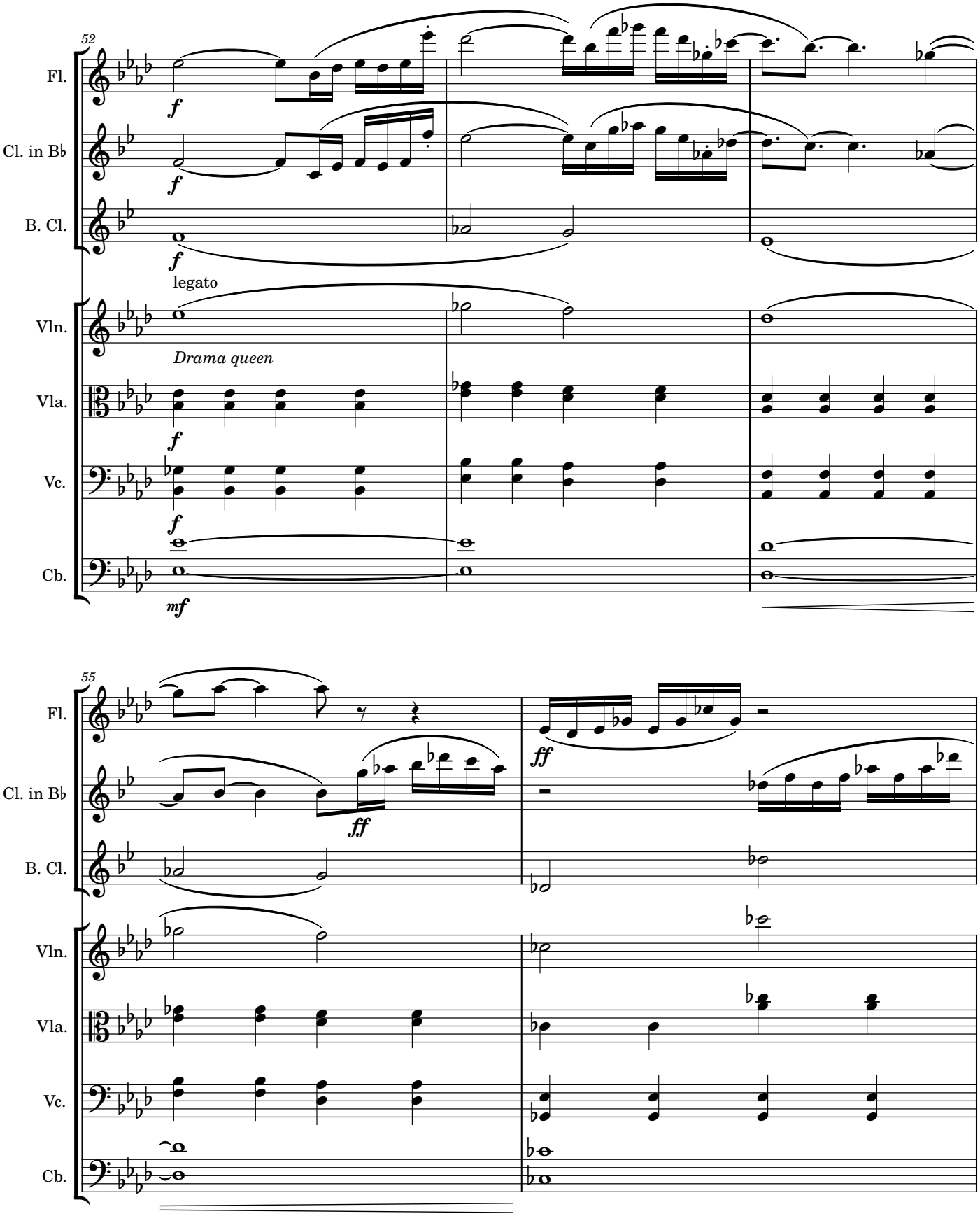
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Drama queen
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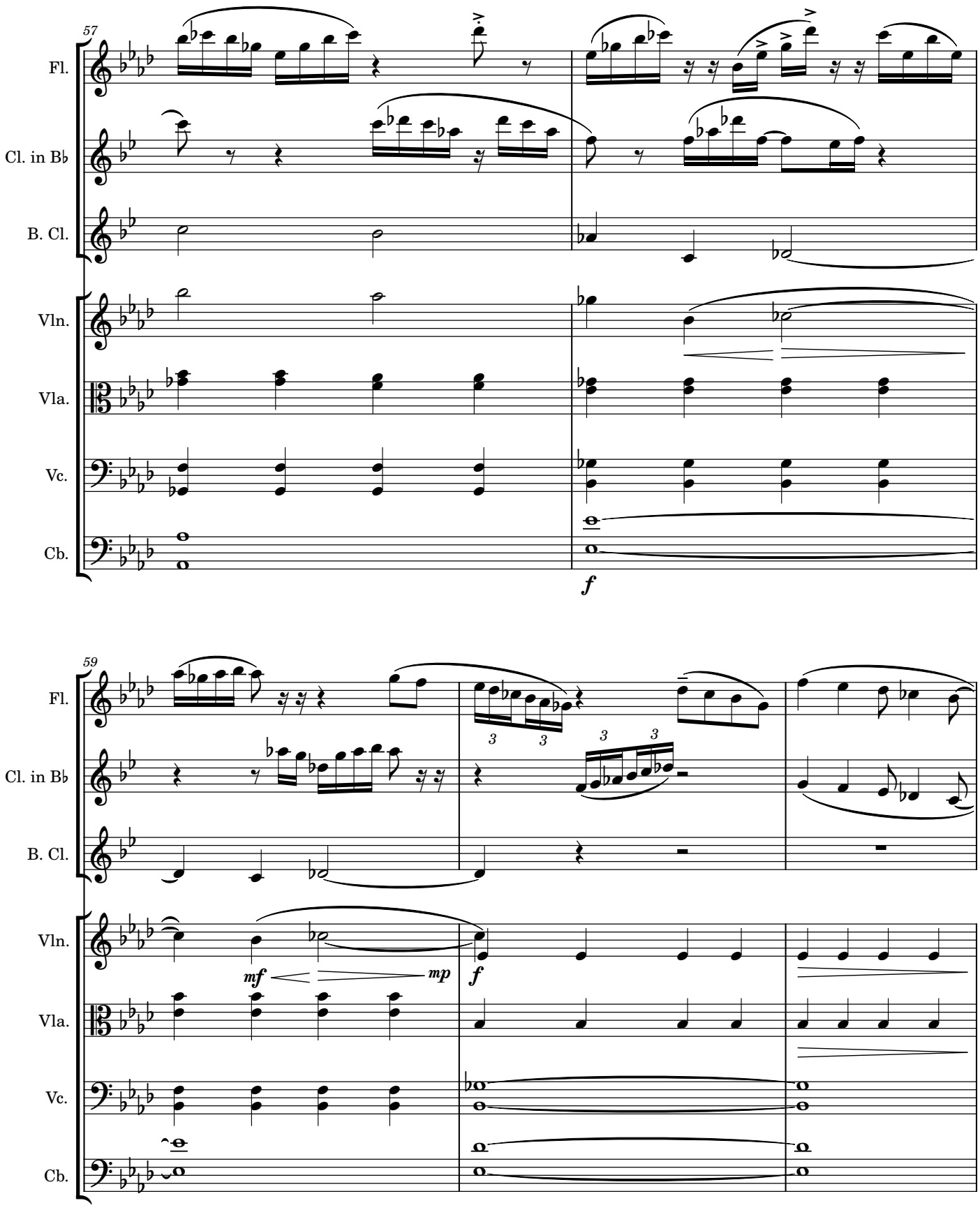
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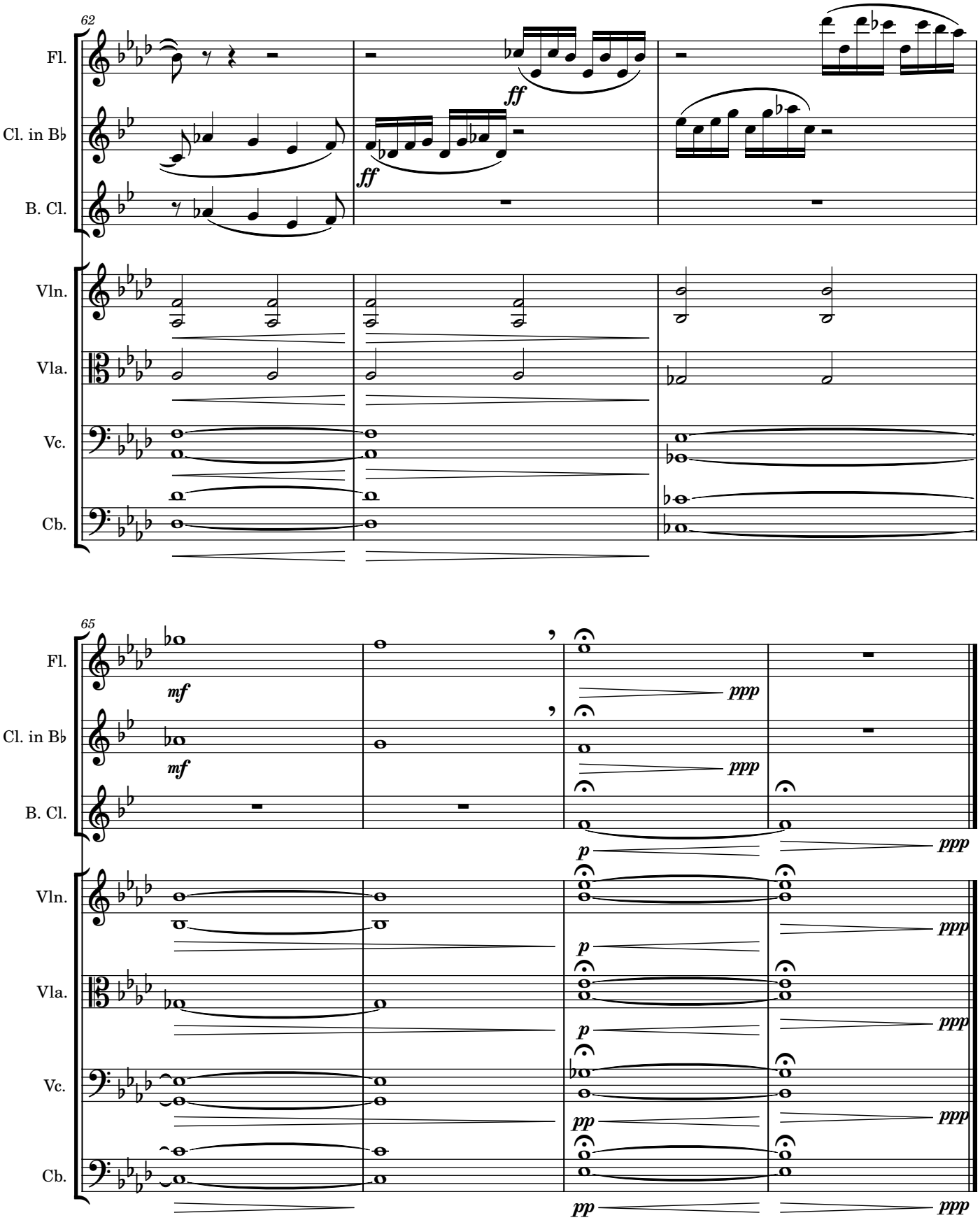
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ppp

Etude

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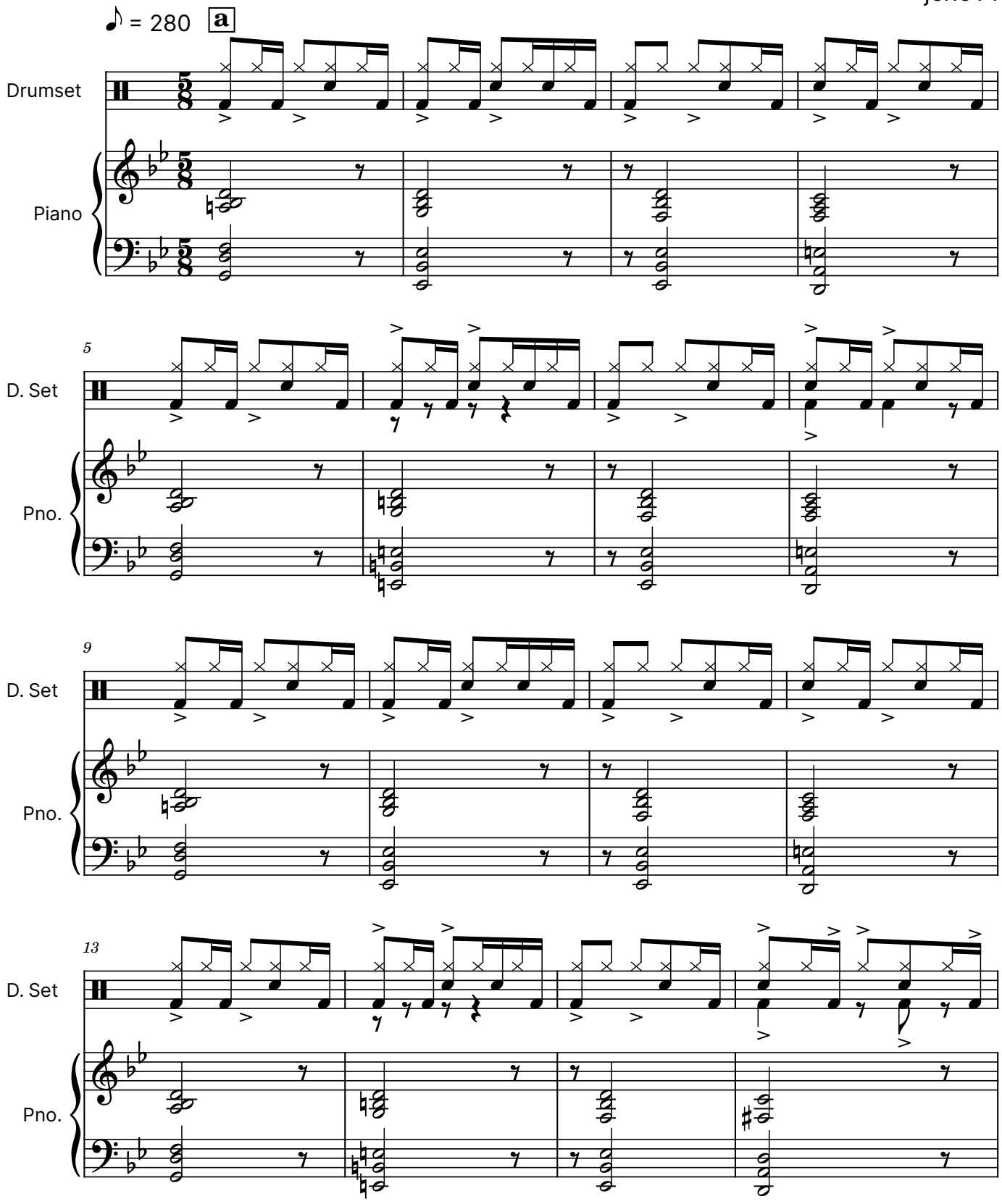

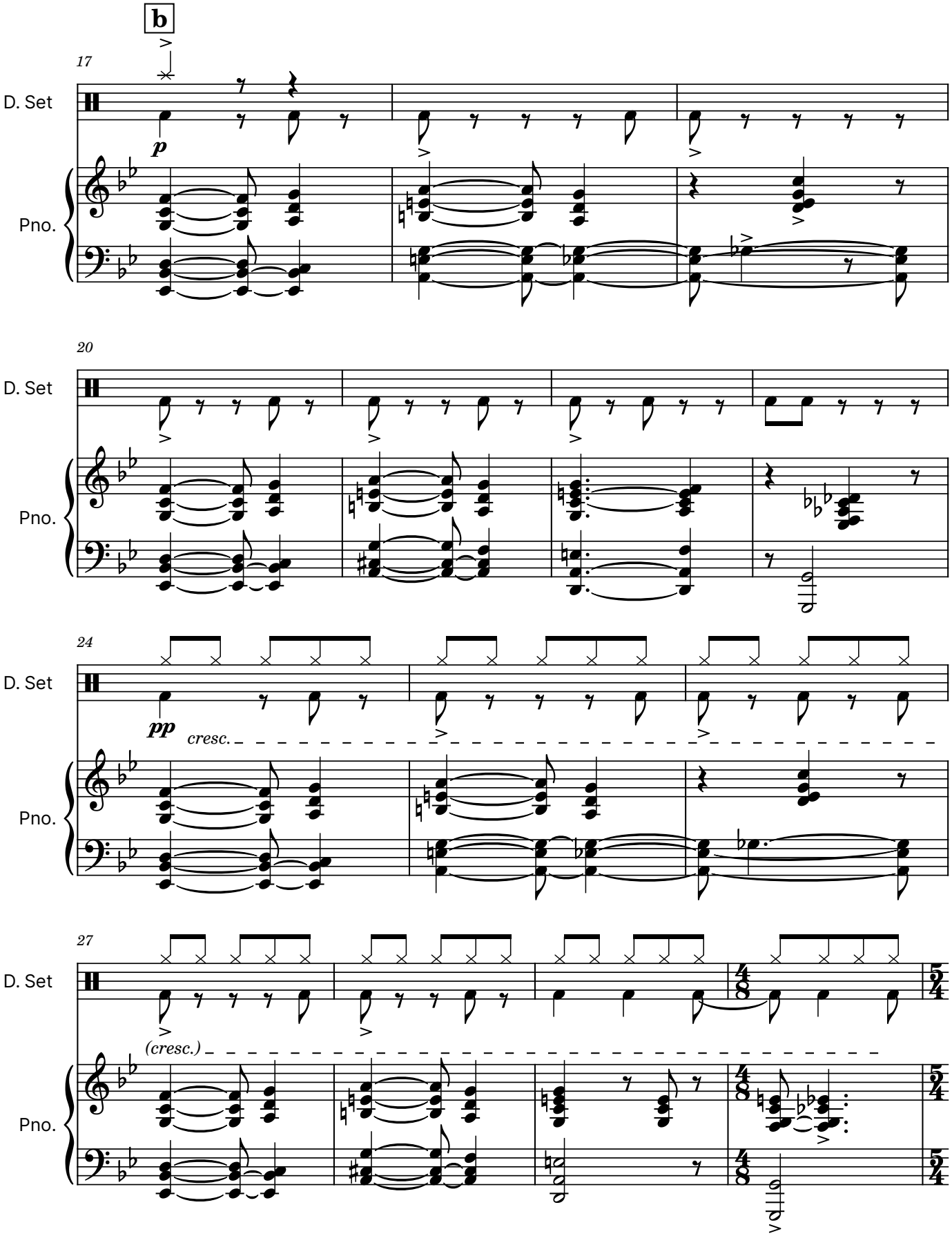
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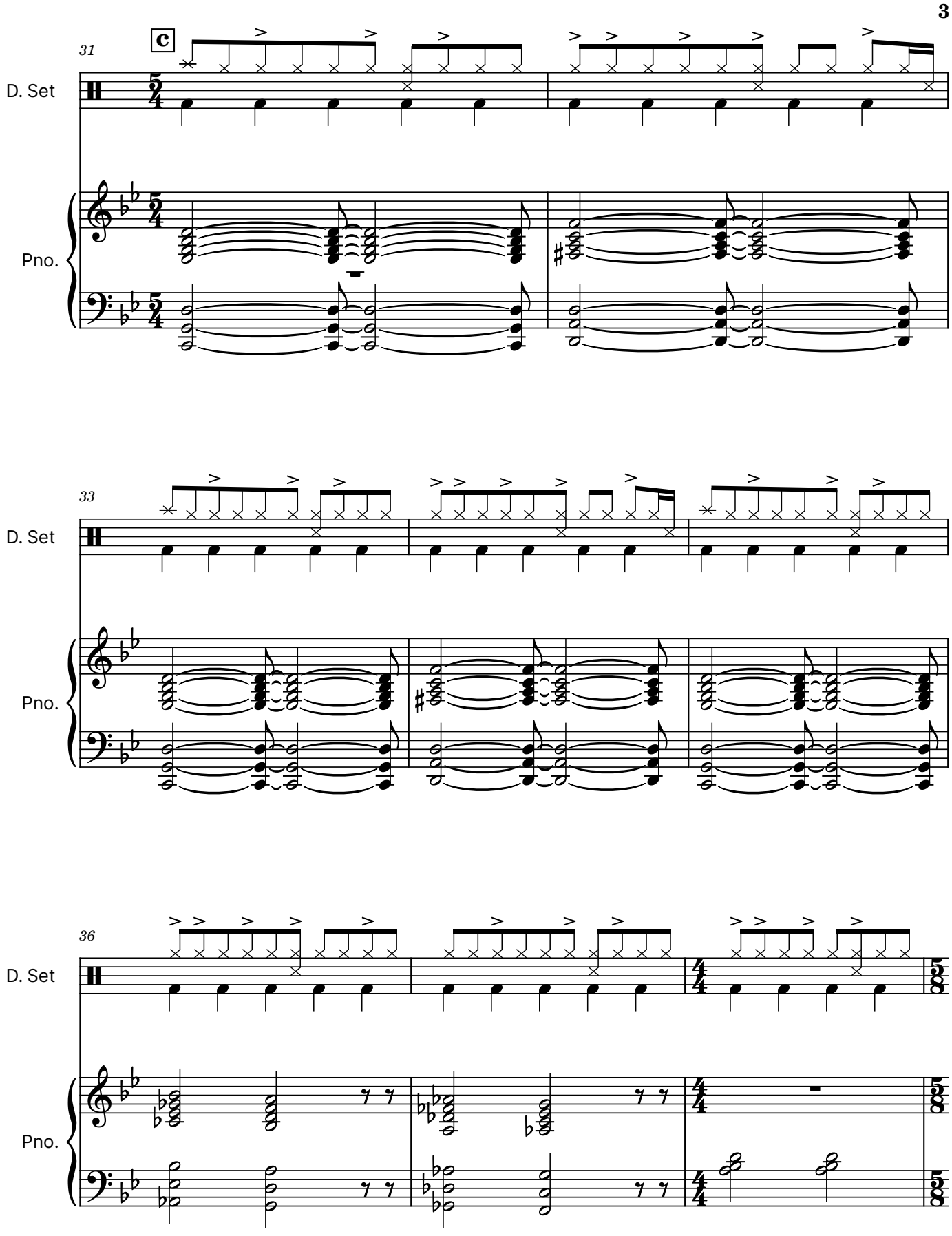
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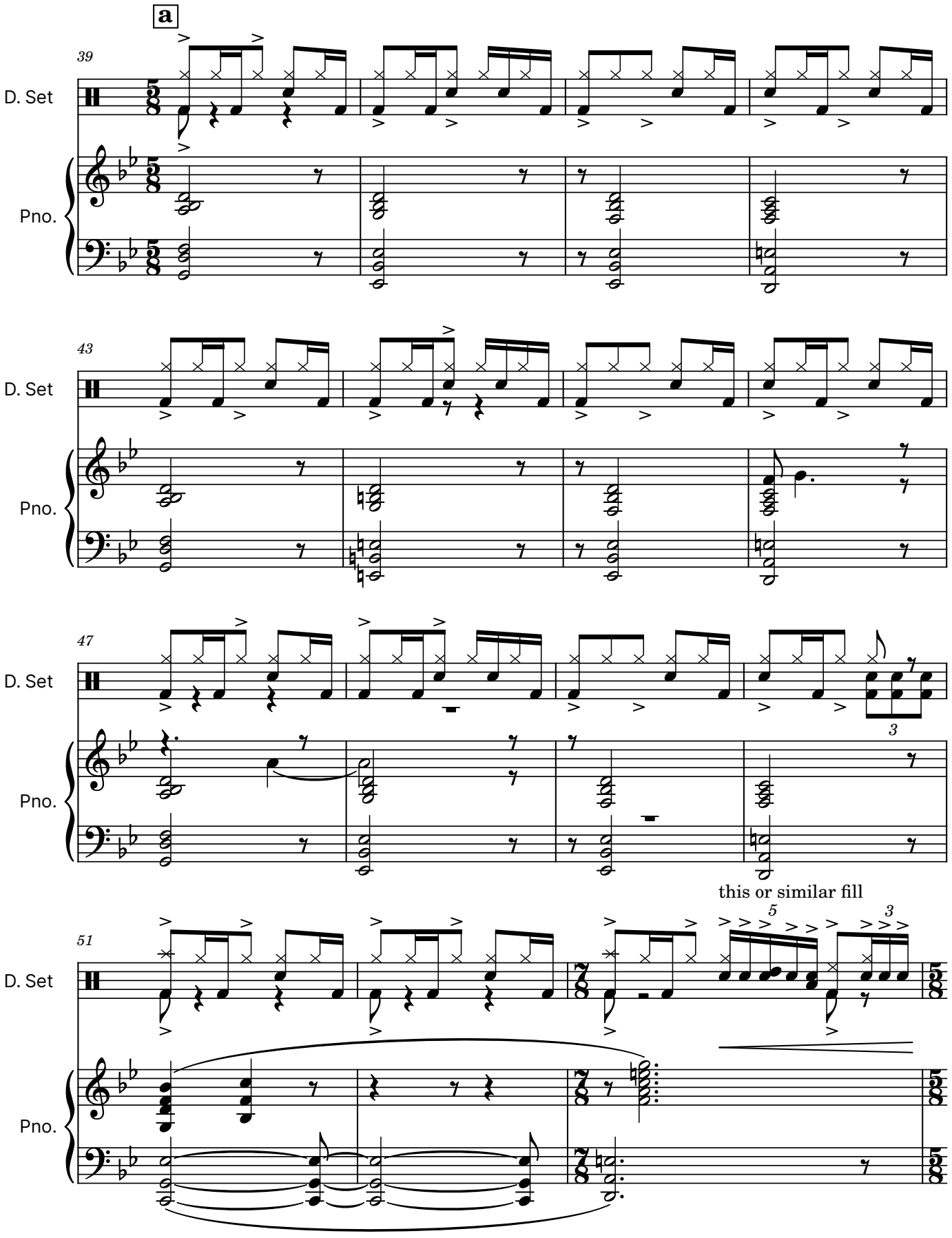
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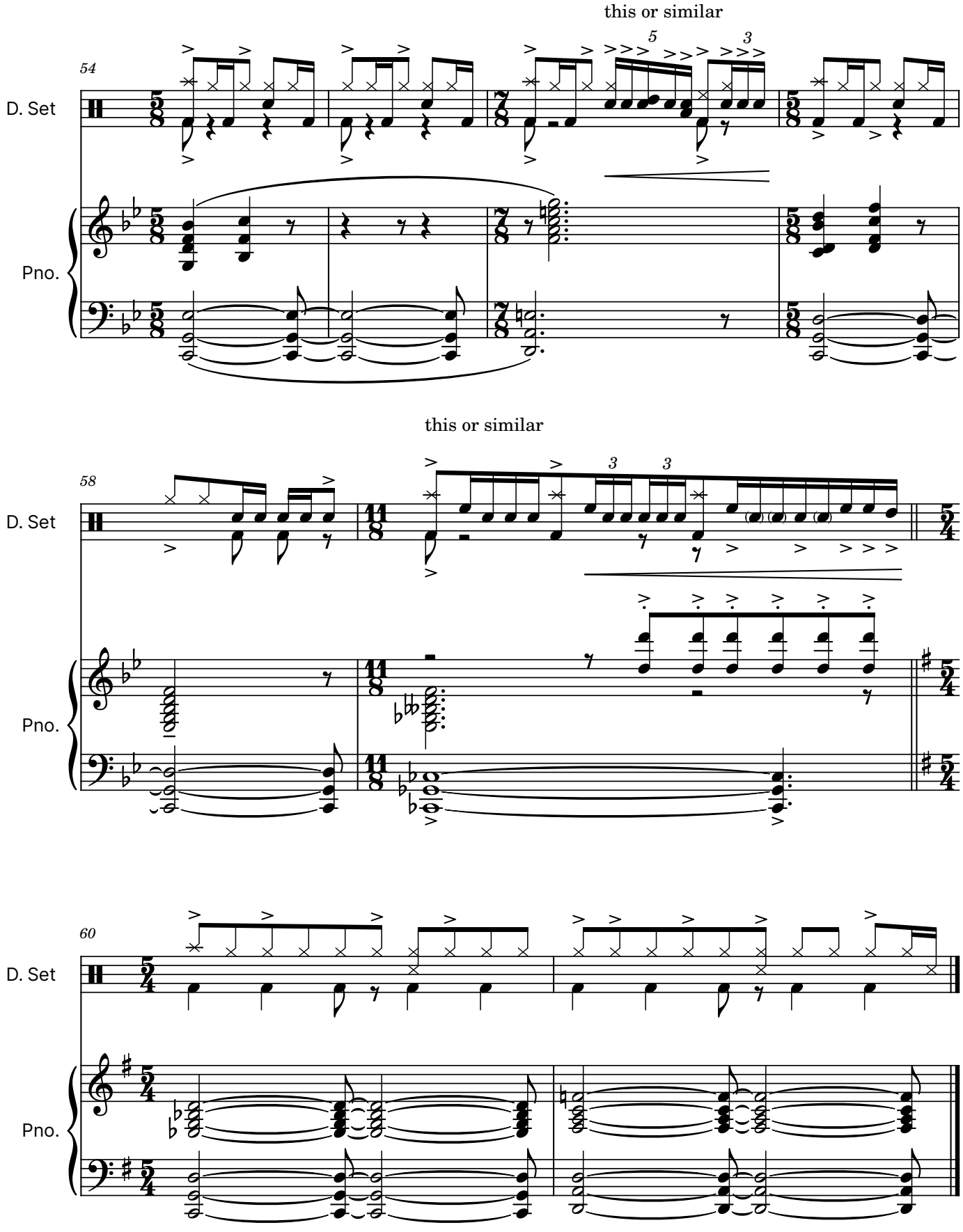
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