Sara Cubarsi

# LA LANGUE DES GARGOUILLES (2023)

Duo for natural horn, retuned e-keyboard, prepared piano and gong

*For Ben Goldscheider and Richard Uttley*
*Commission from the I&I Foundation*
*First performance given by Ben and Richard at the Luzern Festival, Sept 5th, 2023*

**SOUNDING PITCH SCORE**

*La langue des gargouilles (2023) – Sara Cubarsi*

# Performance notes

## GENERAL

The hornist plays with a D-crook on the natural horn. It is tuned one quarter-tone high than the piano's D (more below). The hornist also needs a **low-pitched gong**, a **gong mallet** on a **foot drum-pedal**, and a **horn mute**.

The pianist plays on a **grand piano** (range from A0 to C8) and an **electric keyboard with 88-keys**. The pianist also needs a **laptop** with the tuning patches for the program **Max**, a **volume pedal**, a **sustain pedal**, **two wedges** and **Blu Tack** to prepare 5 piano strings.
Amplification for the keyboard is explained in detail below, it needs **2 small sound transducers** and a guitar **amp or speakers**.

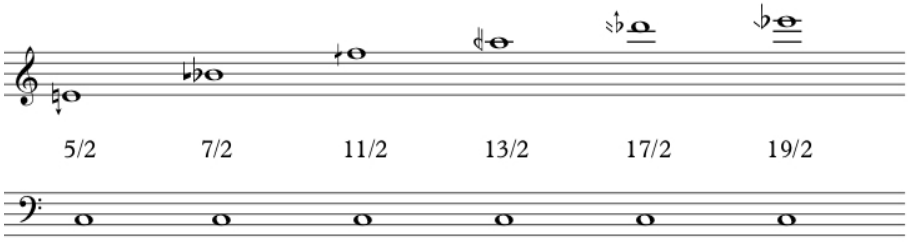
The piece lasts around 17 minutes.

***Tuning***
The piece is composed in just intonation with moments adapted to the equal temperament of the piano. Mostly, the piano plays very low tones or very high tones. The $11^{th}$ overtone of the low tones is the framework for the quarter-tone material in just intonation in the instruments above (the electric keyboard and the horn). For example, the piano A contains a D-quartertone-high as an overtone, the E contains an A quarter-tone-high, and the B an E-quartertone-high. The electric keyboard is where both worlds blend in the same timbre, playing in the low range extremely close to the piano's tuning, in a way that it almost blends together with it, and in the upper range justly with the horn in D-quartertone-high. Around these quartertone Ds, the horn and the elecritc keyboard are performing intervals in just intonation, up to the $19^{th}$ limit. The opening high G-sharp on the piano is very close to and sounds like the $11^{th}$ overtone of D quarter-tone, which is in turn the $11^{th}$ of the lowest A of the piano - therefore the two unidecimal worlds are spelled out and contained within the piano range: A – D-quarter-tone-high - and G two quarter-tones high.

***Tempo/Pace***
The tempo should serve the tuning, so that the intervals are heard and the hornist can tune as precisely as possible. However, it should also serve the melodic motion, so that it does not become static, allowing the music to flow.

***Fermatas***
Fermatas are moments to listen out for the resonances. The length of the fermata should be determined partially by the duration of the note on which there is a fermata, together by the length of the resonances from the previous sounds, be it a fermata on a tone or chord, or a fermata on a rest.

***Accidentals***
The sounding pitch is written with the Extended Helmholtz-Ellis JI Pitch Notation devised by Marc Sabat and Wolfgang von Schweinitz, and the original chart about these accidentals is included for reference after the performance notes.




- The arrow indicates the syntonic comma (81/80 or 21,5 cents). 5/2 in the example above is a compound pure major third. It notates multiples of the 5th harmonic.
- The inverted seven indicates the septimal comma (64/63 or 27,3 cents). It notates multiples of the natural seventh.
- The quartertone sign indicates the unidecimal quartertone (33/32 or 53,3 cents), used to notate multiple intervals of the eleventh harmonic.
- The 13-limit sign indicates the tridecimal thirdtone (27/26 or 65,3 cents), to notate multiples of the natural 13th.
- The arrow-raised flat plus the downward sings inidicate multiples of the 17th harmonic. The 17-limit schisma is 6,8 cents or a ratio of 256/255.
- The 19-limit schisma indicates the quasi pythagorean minor third, and is 3,4 cents or the ratio 513/512.
- more about this here: https://marsbat.space/pdfs/notation.pdf

Any of these can be combined to indicate different ratios between any notes in music notation. Notes with a traditional sharp, flat, or no accidental, are tuned by adding or substracting pure fifths (Pythagorean tuning).
**Accidentals apply to the whole measure for a pitch at the same octave!**

# NATURAL HORN

***Tuning***
The horn's 8th partial (or 7th tone of the physically playable horn-series) is the 11th partial of the piano's A0, which **at A=441Hz**, would be 303,18Hz. The lowest horn tone would be in this case: 75,79Hz.
The keyboard is also tuned to the piano's A, so the hornist can also use the keyboard for tuning in.

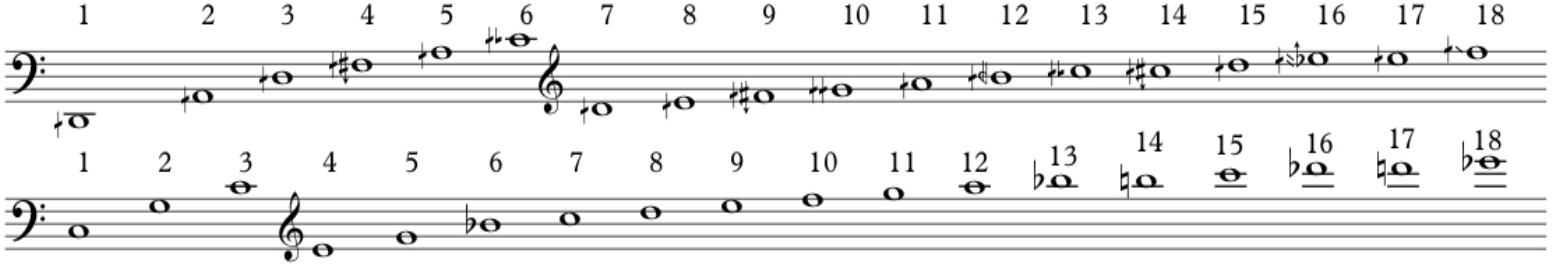
***Accidentals***

The sounding pitch is written with the Extended Helmholtz-Ellis Just Intonation Pitch Notation in small case above, for reference. The accidentals apply to the whole bar, at the same octave. As the hornist already sounds according to the natural series and is tuned a quarter-tone high, the performer mostly won't need to refer to it, unless in search for some reference tone on the keyboard, for example.

The transposition has no microtonal accidentals except for when it is stopped, and then it is only approximately indicated, and to be adjusted by ear to the keyboard, checking with the sounding pitch score when necessary (mostly necessary in the *Troisième chant de la nuit*).

***Natural series and transposition***

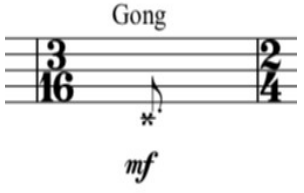
The following shows the horn natural tones in sounding pitch numbered from the lowest sounding pitch, and the same in their transposed notation.

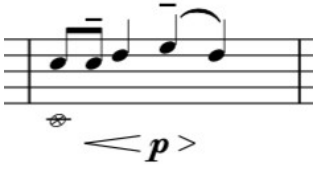



***Gong***

The gong should be low in pitch. It is placed at floor height, next to the feet of the hornist, with a foot pedal. The mallet should be appropiate for the Gong.

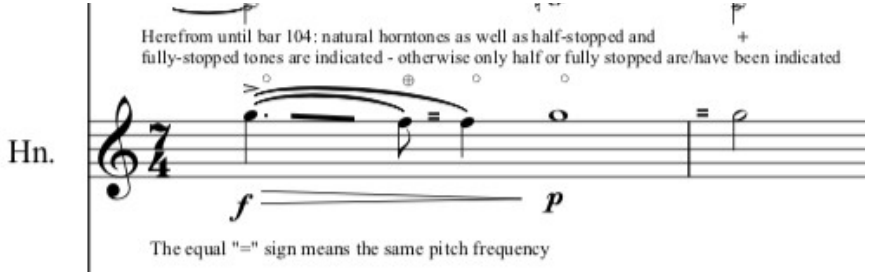
The gong tones are indicated with crossed note-heads. The length is only written for practical reasons, the hornist hits and just lets ring until the next gong notehead – i.e. never damp.



***Equal symbol***

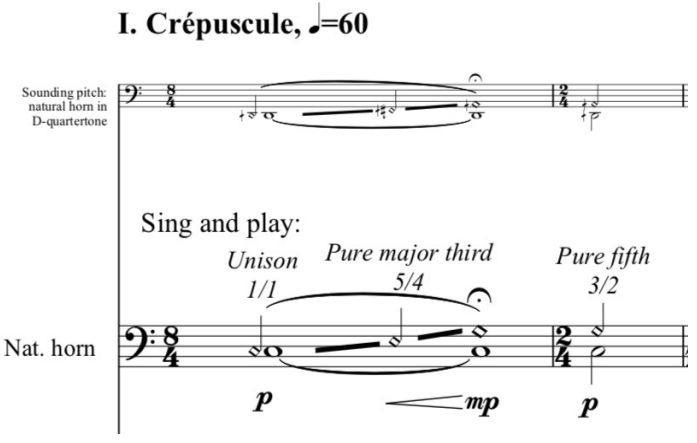
In the *Troisième chant de la nuit*, there is an equal symbol, which indicates that the same pitch-frequency is repeated, but differently, either with hand stopping or without, as indicated.



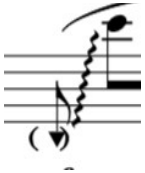

***Voice***

The singing is indicated with diamond note-heads and should be done at the most comfortable singing octave, but if possible, as written. If singing is at times not possible, an alternative solution might be found. The intention is to achieve a rich almost distorted, saturated, vibrant sound, with difference tones and rich beating patterns. The balance during singing might be adjusted, so that the effet is heard (or at least perceived).

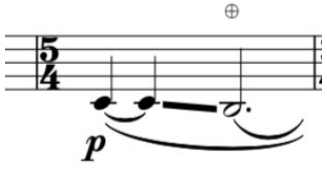
The singing in the transposition is notated relative to the horn part (also transposed!). Therefore: the hornist sings a unison right at the beginning.



***Harmonic gliss***
This sign indicates a free rapid harmonic/overtone glissando.

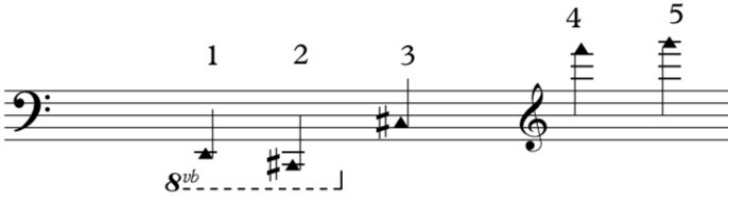


***Continuous gliss***
This sign indicates a continuos glissando performed with the hand-stopping technique




# PIANO

***Preparation***
The following tones are prepared with a piece of bluetack.



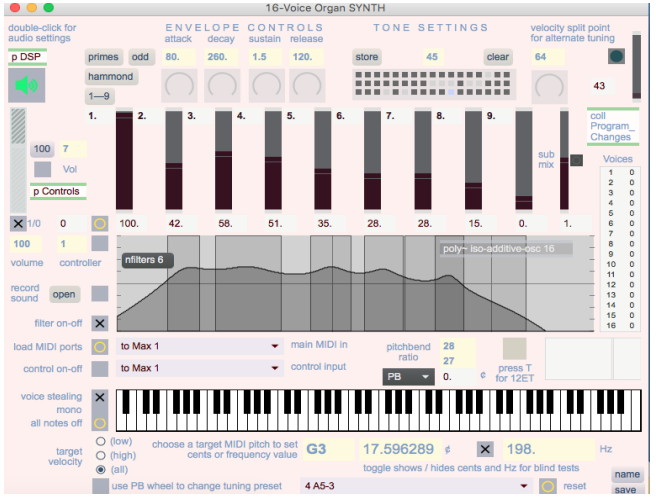

#1 and #2 should contain their fundamentals to some extent. Specially 2. should still sound harmonic enough with it's upper octave E, so that it blends well together.
#3: is an indeterminedly inharmonic sound. It is used as a rhythmic tone, with a more percussive effect.
#4 and #5 are rhythmic percussive tones. They should sound not be completely the same though, so place the Blu Tack at different points.

***Transducers***
Transducers are placed inside the piano, transfering the vibrations of the keyboard to the piano sound box as effectively as possible (in the open wholes, or next to the low strings of the piano)

***Piano pedals***
The sustain and the soft pedals are both wedged for the whole piece. The pianist does not need to pedal any of these as they are permanently fixed until the piece has ended.

# KEYBOARD

***Timbre***
Its timbre is very similar to a sine wave, with a soft attack. In Marc Sabat's Max Patch Helmholtz Calculator for Max 7 or Max 8, the sound bank is number 45, and the balance looks like in the graph bellow (image of the Max Patch):




***Patch***
The keyboard is connected to the Helmholtz JI Calculator, image above, downloadable for free from Marc Sabat's Plainsound website. This is an already made Max Patch, where all the pitches can be programmed. The composer will provide the specific tuning patches for this piece (tablature chart) as files to insert in the max patch. The sound goes then out through the mini jack from the laptop, split into the amp and transducers.

***Tuning changes***
Every few minutes there is a tuning patch change (meaning, the current patch does not have the needed pitches anymore), which changes the pitches for each keyboard key. If this is too stressfull to manage during a performance, someone can sit at the laptop and trigger the tuning changes with a click. The tuning changes are indicated with a letter, e.g. "**A**", "**B**", etc., in pink in the piano part.

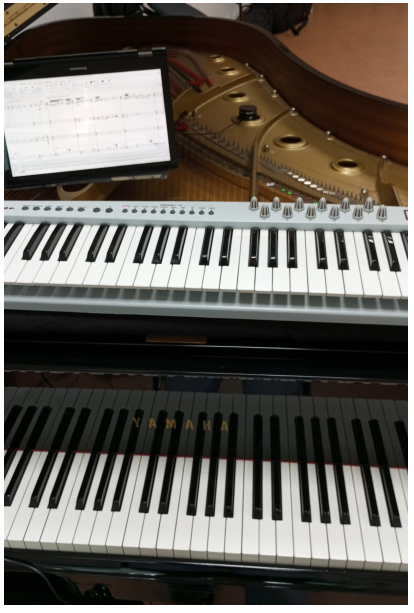
***Tablature***
The keyboardist reads from a tablature part – see also Tablature chart attached.

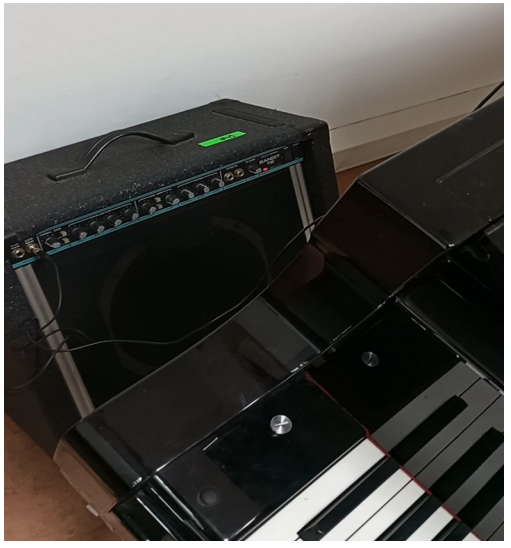
***Volume Pedal***
The volume of the amplifier is controled with a pedal (a guitar volume pedal). The transducers are always sounding the same (rather quiet, from far away inside the piano), therefore the pedal is only a pre-amp effect. At its full dynamic it should sound around *forte*, balanced with the horn at its maximum dynamic. At its lowest dynamic it should sound pp, like an echo from inside the piano. These volume changes are notated in the score with **ON**, **OFF**, or **HALF**, and dynamic/balance can be adjusted during rehearsals (also suggested dynamics in blue on the piano part).

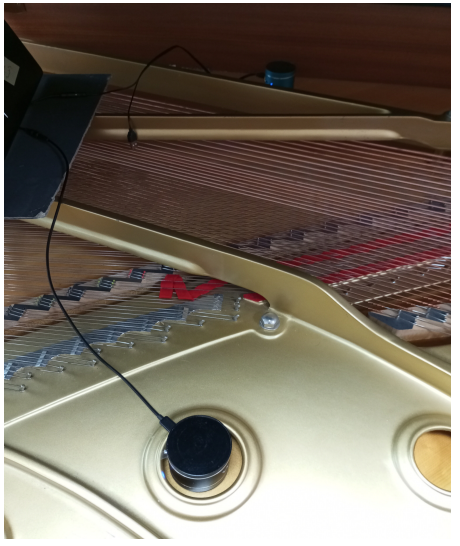
***Sustain Pedal***
The sustain pedal is connected as usual to the electric keyboard. This is only notated when a long chord is built through a page or more, but otherwise the keyboardist should use the sustain pedal as usual and as needed according to note-length.

***Position***
The 88-key electric midi keyboard is placed as close as possible/comfortable parallel to the piano keyboard, so that the keyboardist can access both quickly, sometimes simultaneously, other times alternating. This could be in front of the piano keyboard, or above, where there usually is the piano music stand.

***Transducers and amplification***
The electric keyboard is both amplified through a speaker or guitar amp and mini sound transducers.
The amp is placed behind the piano so that as much sound as possible resonantes in the piano.
The transducers are placed inside the piano, in the holes next to the strings, and/or in the wooden "floor" next to the low strings.


YAMAHA





**PROGRAM NOTE**

**Premiere** by Ben Goldscheider and Richard Uttley on 5th Sept 2023, in Luzern (Lukaskirche)

**La langue des gargouilles:** Duo for Natural-Horn in D quarter tone-sharp, retuned e-keyboard, piano and gong
Sara Cubarsi, 2023

*The natural horn plays a simple discant in D quarter tone-sharp major floating over chord progressions one natural major third apart and enharmonic modulations inspired by the sounds of composers from the 16th and 17th Centuries. Although most of the material is based on harmonies with quarter-tones, the harmonic relationships between the notes are simple ones, sounding strangely in-tune, mostly (though not strictly) using low harmonic ratios derived from prime numbers 5, 7, 11 (from which the quasi tempered quarter-tone comes), and less often 13, 17 and 19. The piano functions both as a small resonating "cathedral" for the electronic keyboard and the natural horn, sometimes colorfully resonating (in its equal temperament) with the justly tuned material, sometimes beating against it, or juxtaposing more percussive rhythmic material that crucks up the rather plain, yet melancholic, chant of the early horn.*

**Sara Cubarsi**
The Catalan violinist Sara Cubarsi has been featured as a soloist, chamber musician and composer in the United States and Europe. In June 2018, Sara completed her doctoral studies at the California Institute of the Arts (Los Angeles) with a full scholarship from LaCaixa and the Michael Skloff Scholarship. From 2015 to 2018, Sara studied composition with Wolfgang von Schweinitz and Michael Pisaro, with a special focus on tuning systems and extended just intonation. Since 2019, Sara has been a violin member of Ensemble Musikfabrik performing contemporary music. However, Sara also dedicates herself to playing early music on period instruments, namely on baroque violin, viola d'amore and tromba marina. Sara is currently based in Cologne, where she spends most of her time tuning the violin and listening to enharmonic madrigals.

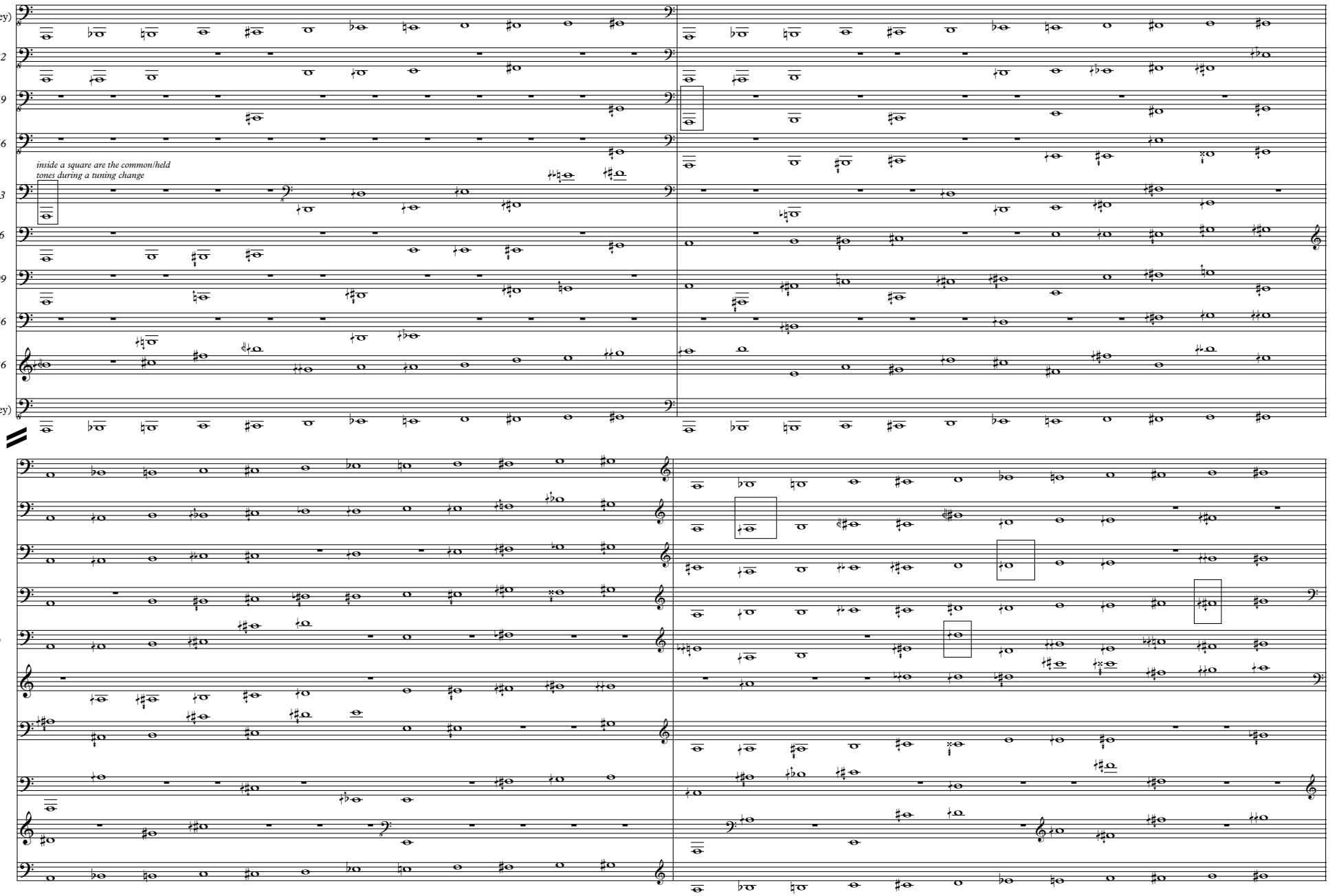
# Tablature chart

E-keyboard

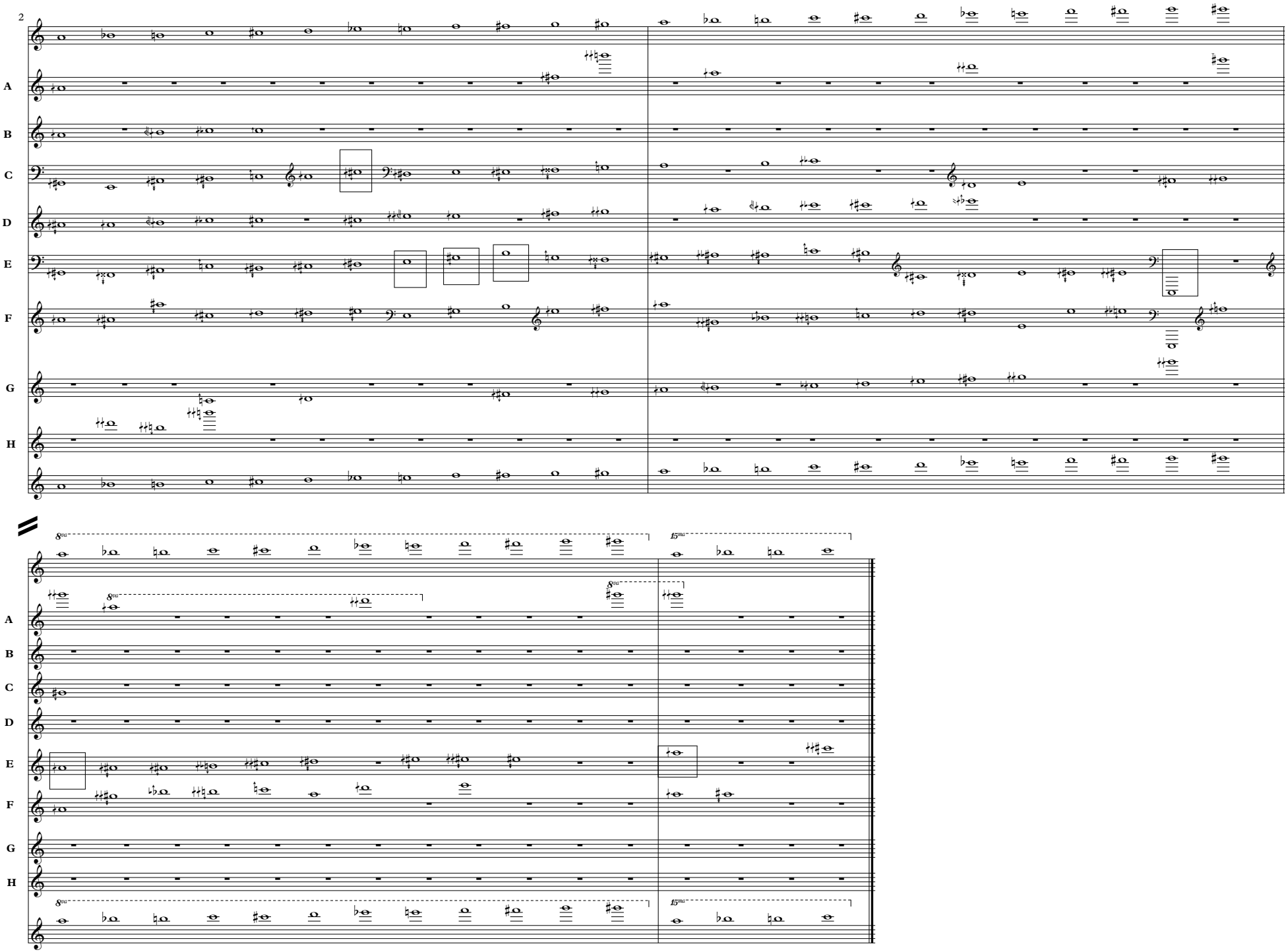
*La langue des gargouilles*

Sara Cubarsi, Barcelona 2023

Name of patch (e.g. "A")
and bar numbers



Sara Cubarsi, Barcelona 2023



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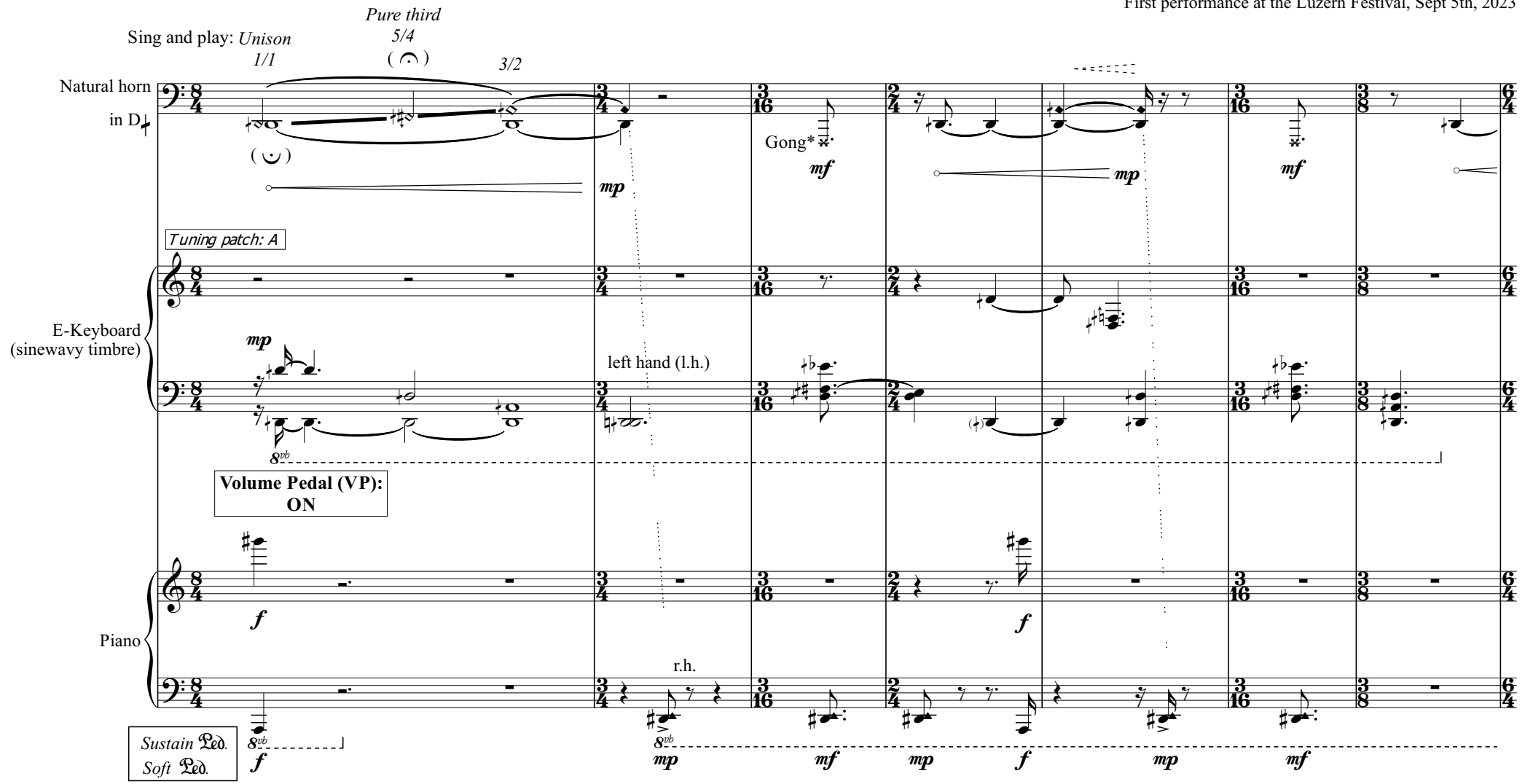
duo for natural horn, retuned e-keyboard, prepared piano and gong

*for Ben Goldscheider and Richard Uttley*

Sara Cubarsi

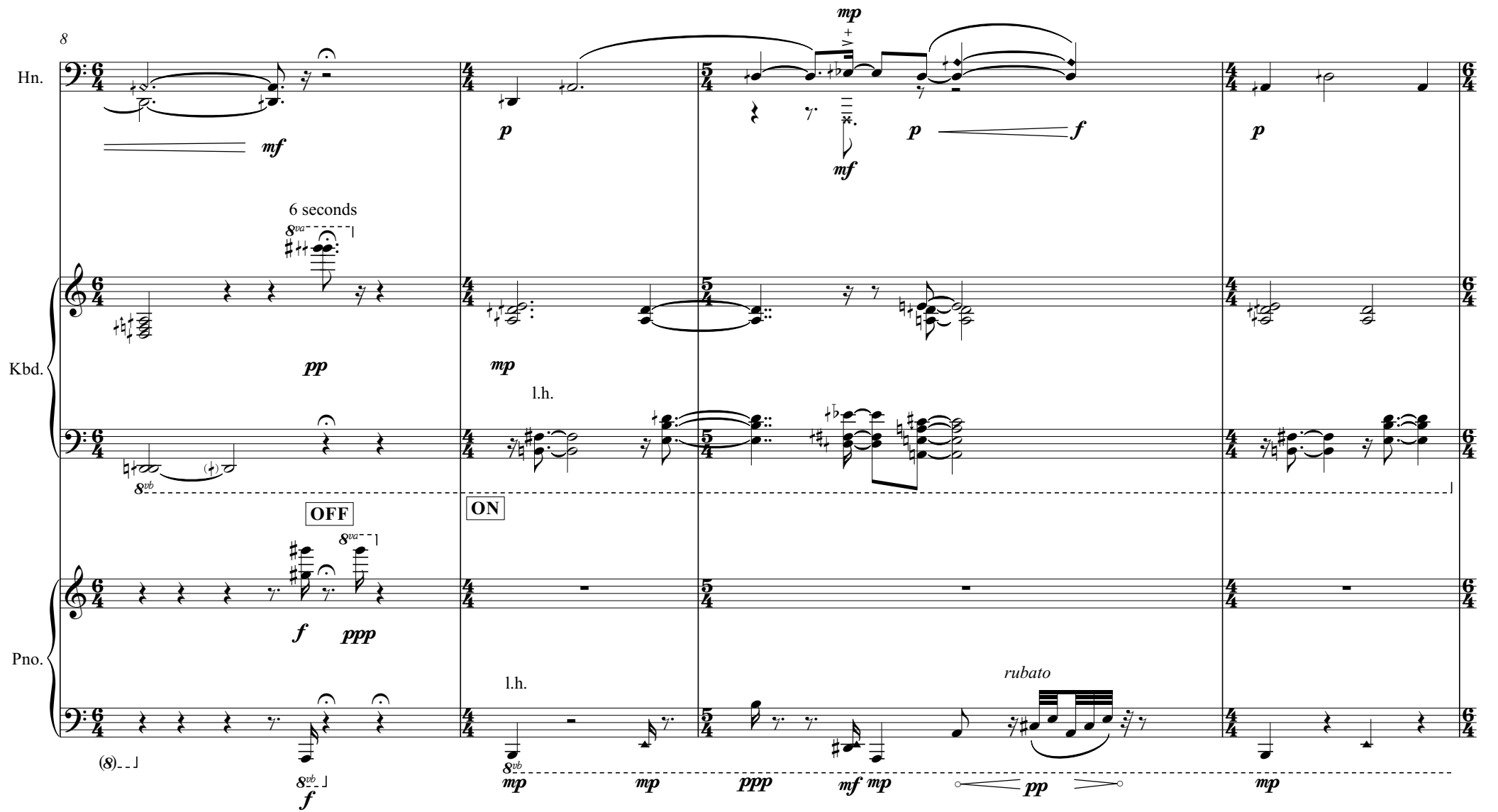
Commission from the I&I Foundation
First performance at the Luzern Festival, Sept 5th, 2023

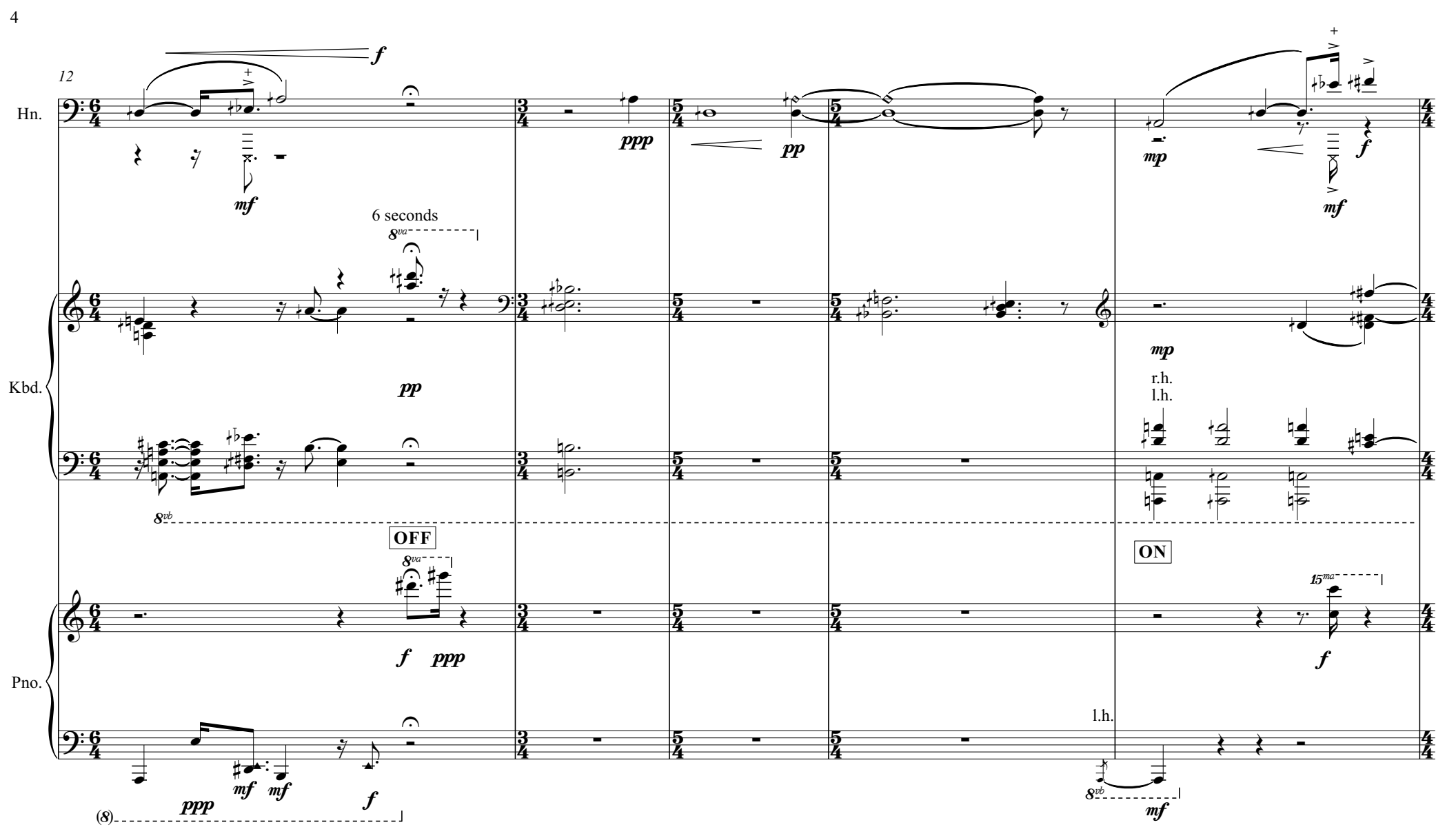
## I. Crépuscule, ♩=46

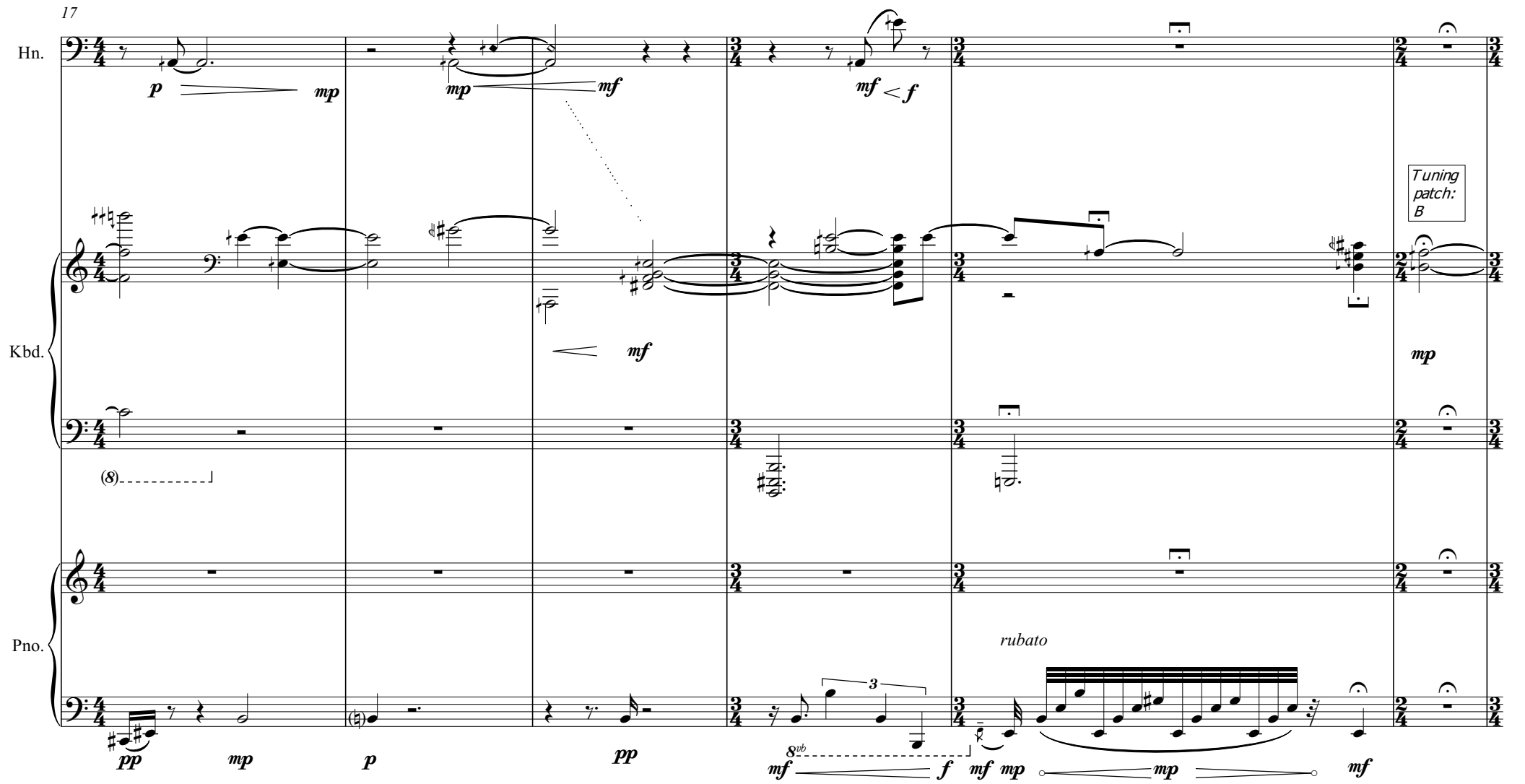



Fix both the piano sustain pedal and soft pedal down for the whole piece (with two wedges or tuning keys works well, for example)

*The gong tones can be played by a third person (on stage), e.g. the laptop assistant changing tuning patches. Due to problems with the gong foot-pedal, this was done in the première, which meant that a large tam-tam could be used.


8
Hn.
mf
p
mp
mf
p
f
p
6 seconds
8va
Kbd.
pp
mp
l.h.
8vb
OFF
ON
8va
Pno.
f
ppp
l.h.
rubato
(8)
8vb
f
8vb
mp
mp
ppp
mf
mp
pp
mp


12
Hn.
Kbd.
Pno.
6 seconds
OFF
ON
r.h.
l.h.
l.h.


17
Hn.
Kbd.
Pno.
Tuning patch: B
rubato

## II. Premier chant de la nuit: le réveil des gargouilles,

in a more flowing tempo, ♩=ca.65

6

23

dolce, legatissimo as possible

Hn.

*mp*

Kbd.

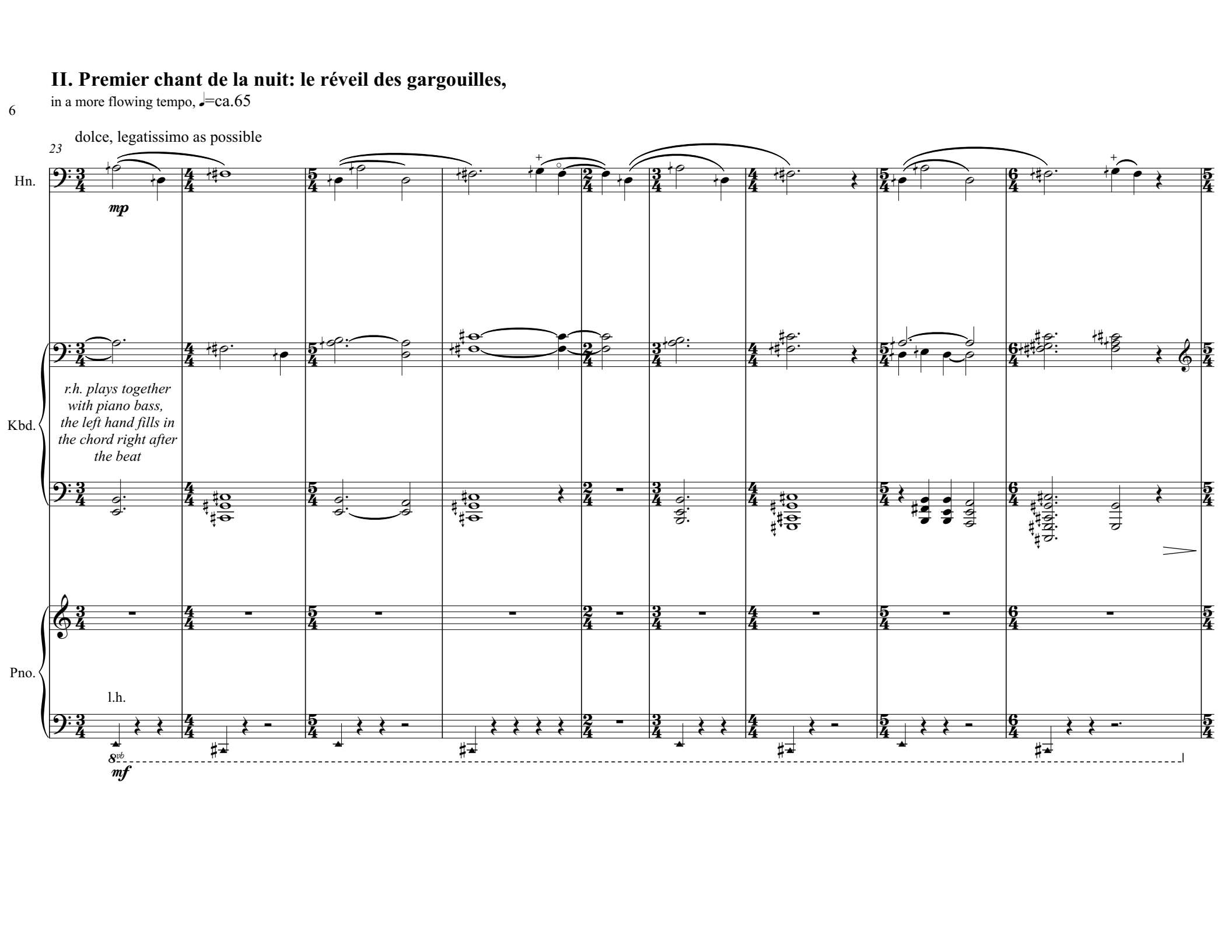
*r.h. plays together with piano bass, the left hand fills in the chord right after the beat*

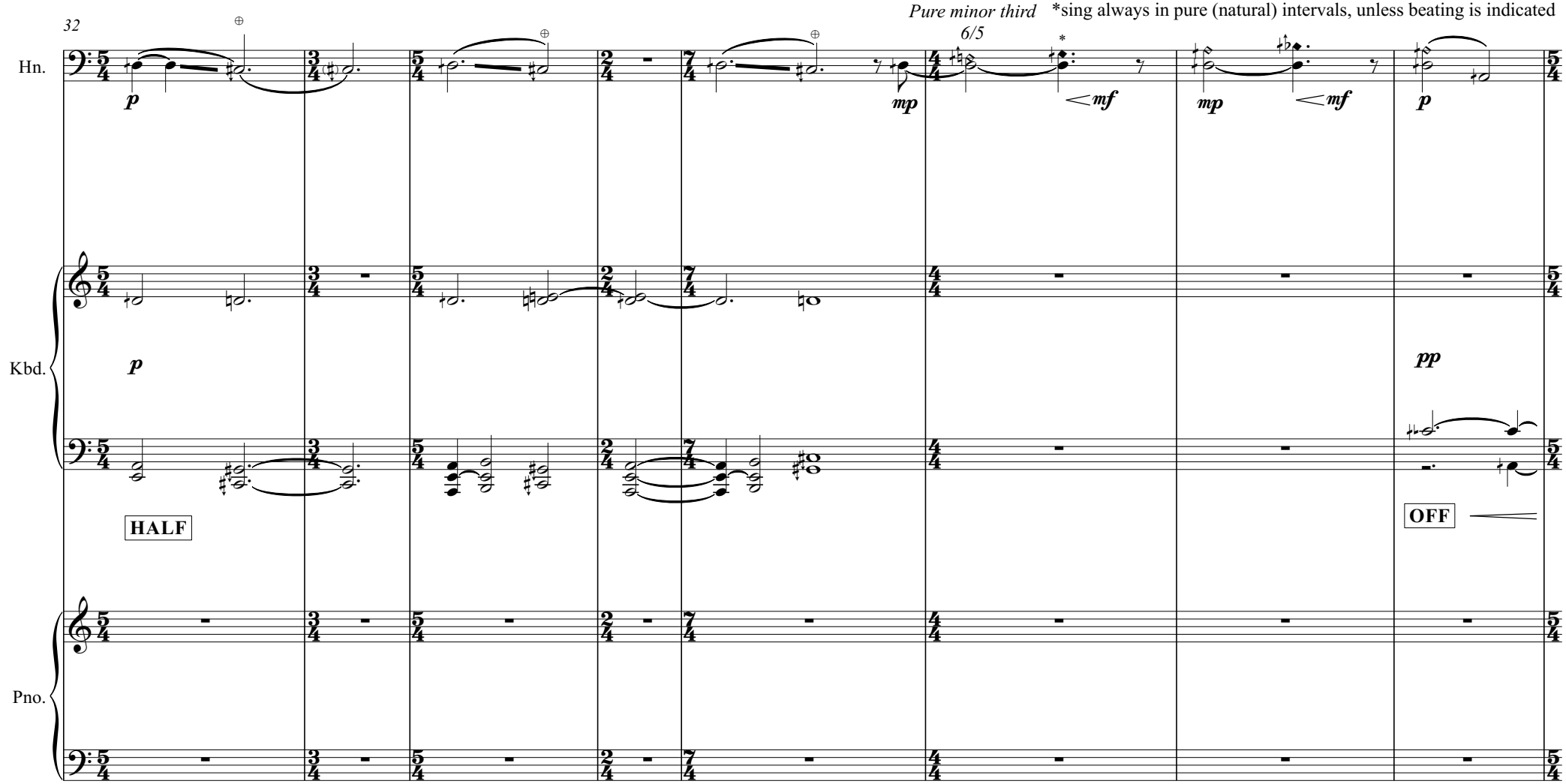
Pno.

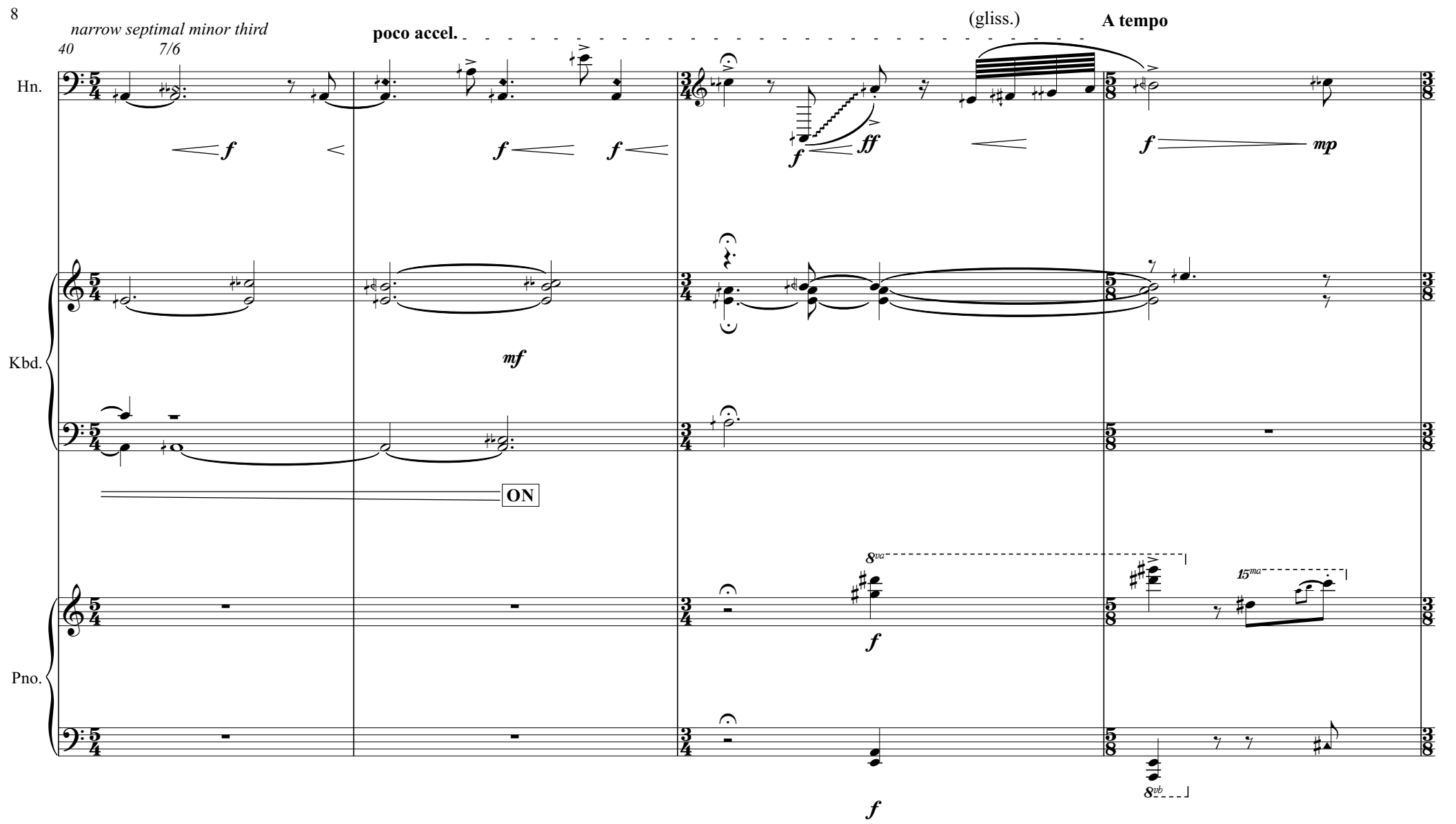
l.h.

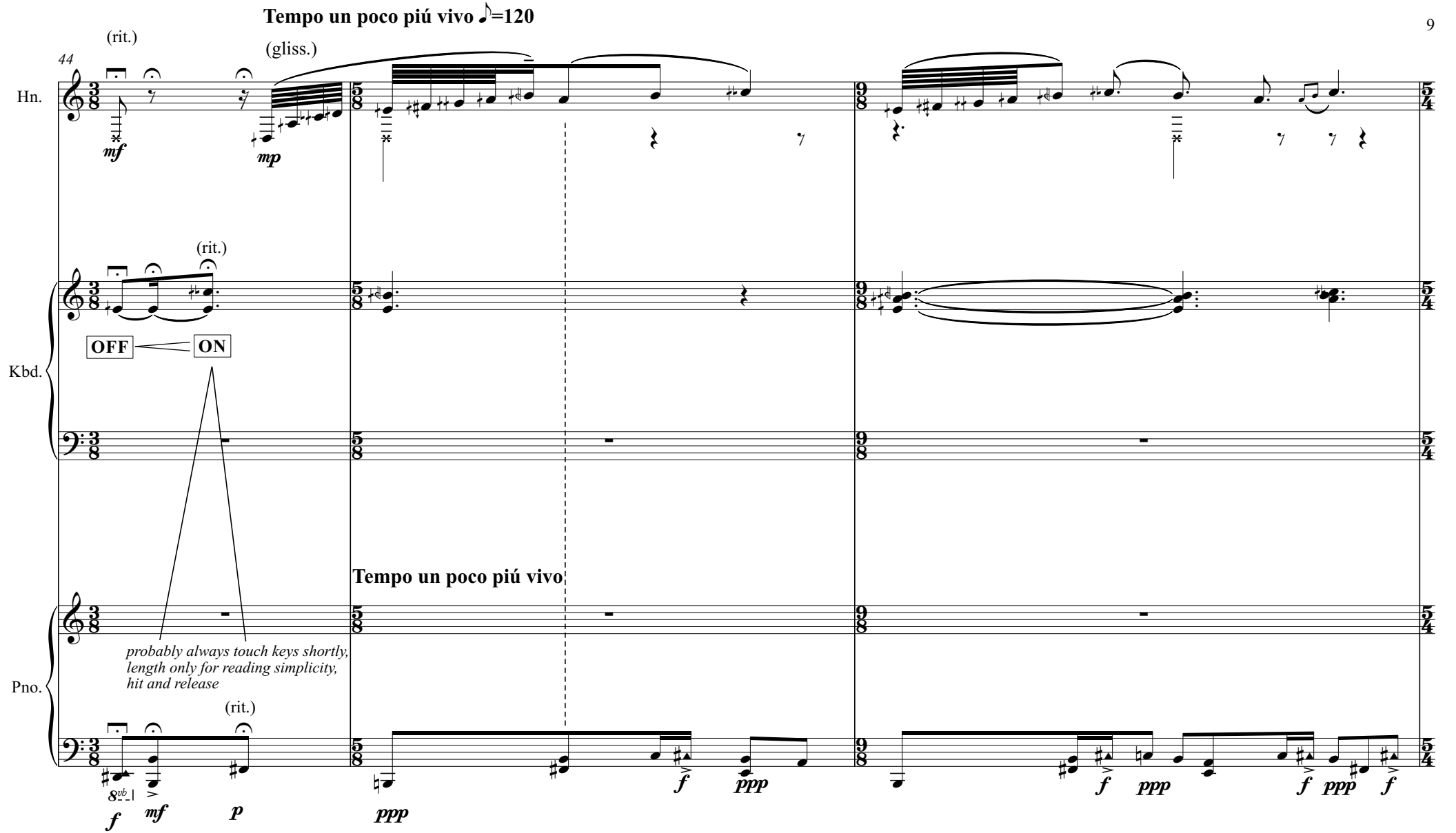
8vb

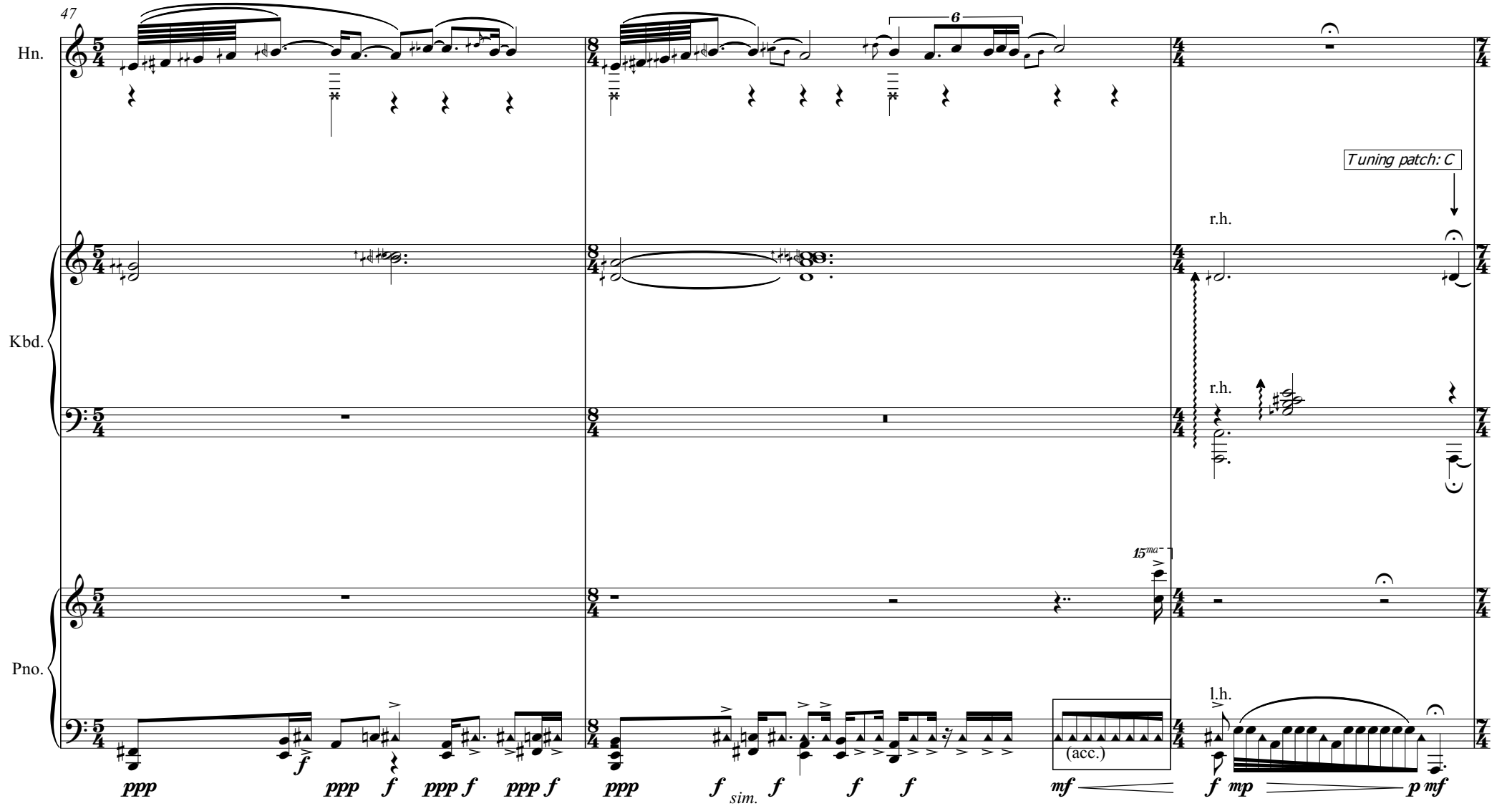
*mf*




32
Pure minor third
6/5
*sing always in pure (natural) intervals, unless beating is indicated
Hn.
Kbd.
Pno.
p
mp
mf
mp
mf
p
p
pp
HALF
OFF


narrow septimal minor third
40
7/6
poco accel.
(gliss.)
A tempo
Hn.
Kbd.
Pno.
ON
8va
15ma
8vb


Tempo un poco piú vivo ♪=120
(rit.)
(gliss.)
44
Hn.
mf
mp
(rit.)
OFF
ON
Kbd.
Tempo un poco piú vivo
probably always touch keys shortly,
length only for reading simplicity,
hit and release
Pno.
(rit.)
8vb
f
mf
p
ppp
f
ppp
f
ppp
f
ppp
f


47
Hn.
Kbd.
Pno.
6
Tuning patch: C
r.h.
r.h.
15ma
l.h.
(acc.)
ppp
f
ppp
f
ppp f
ppp f
ppp
f sim.
f
f
f
mf
f
mp
p
mf

## III. Deuxième chant de la nuit: le désir des gargouilles, ♩=65

50

sonorous, legatissimo

Hn.

*mf* *mp* *mf* *mf*

Kbd.

*(alternatively: arpeggiate)*
(r.h.)

*r.h. plays together with piano bass, the left hand fills in the chord right after the beat*

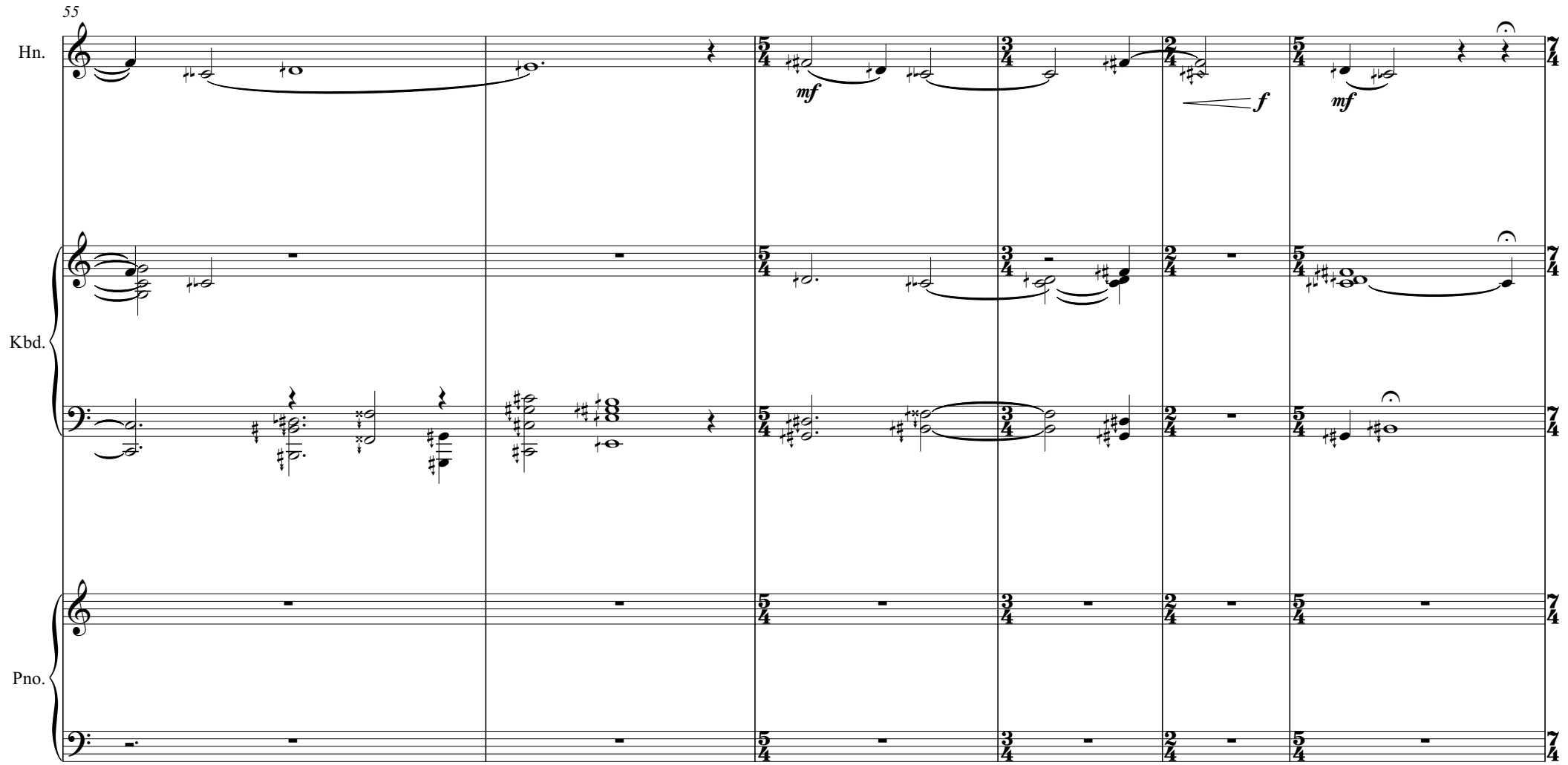
(r.h.)

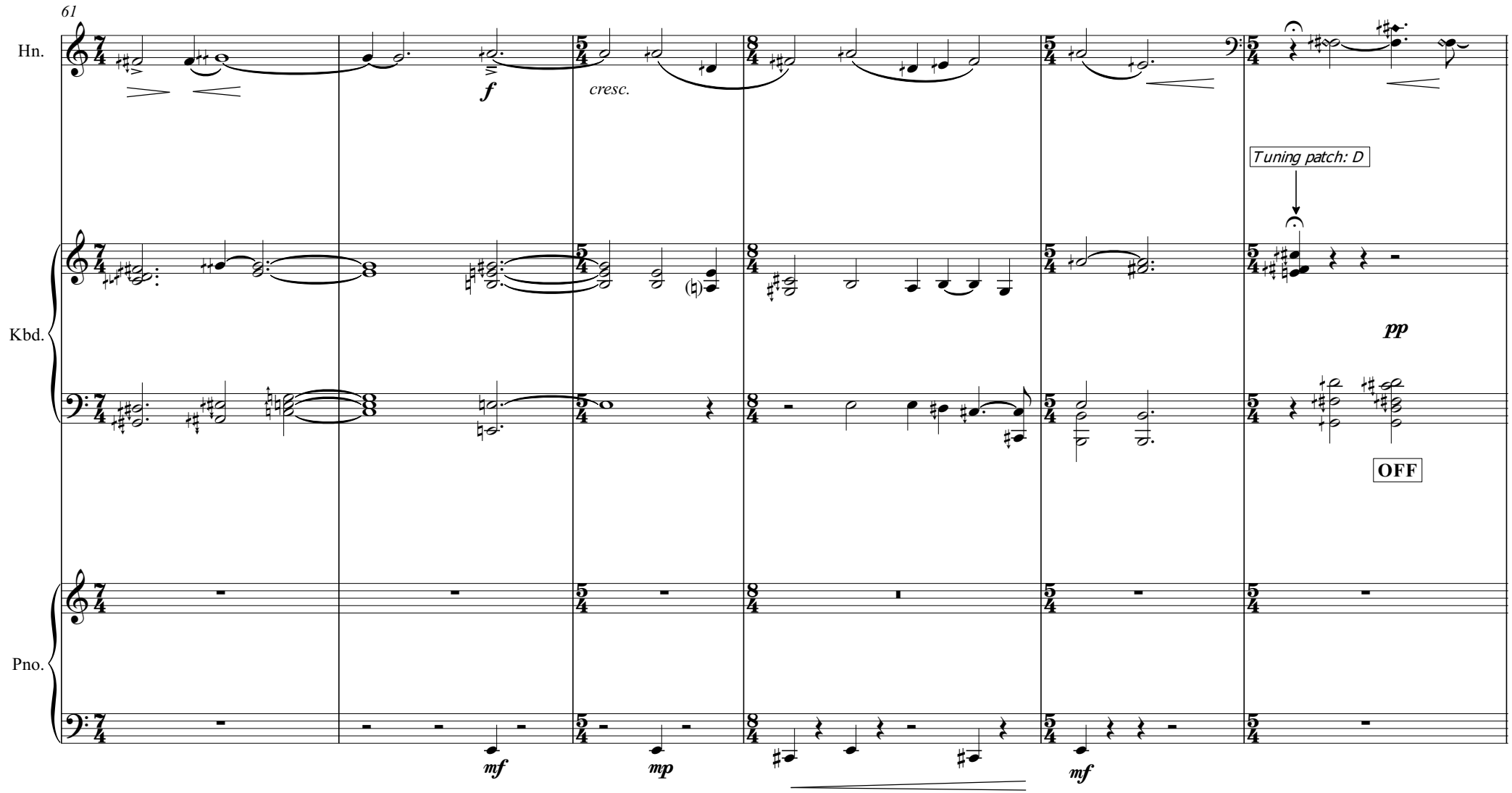
Pno.

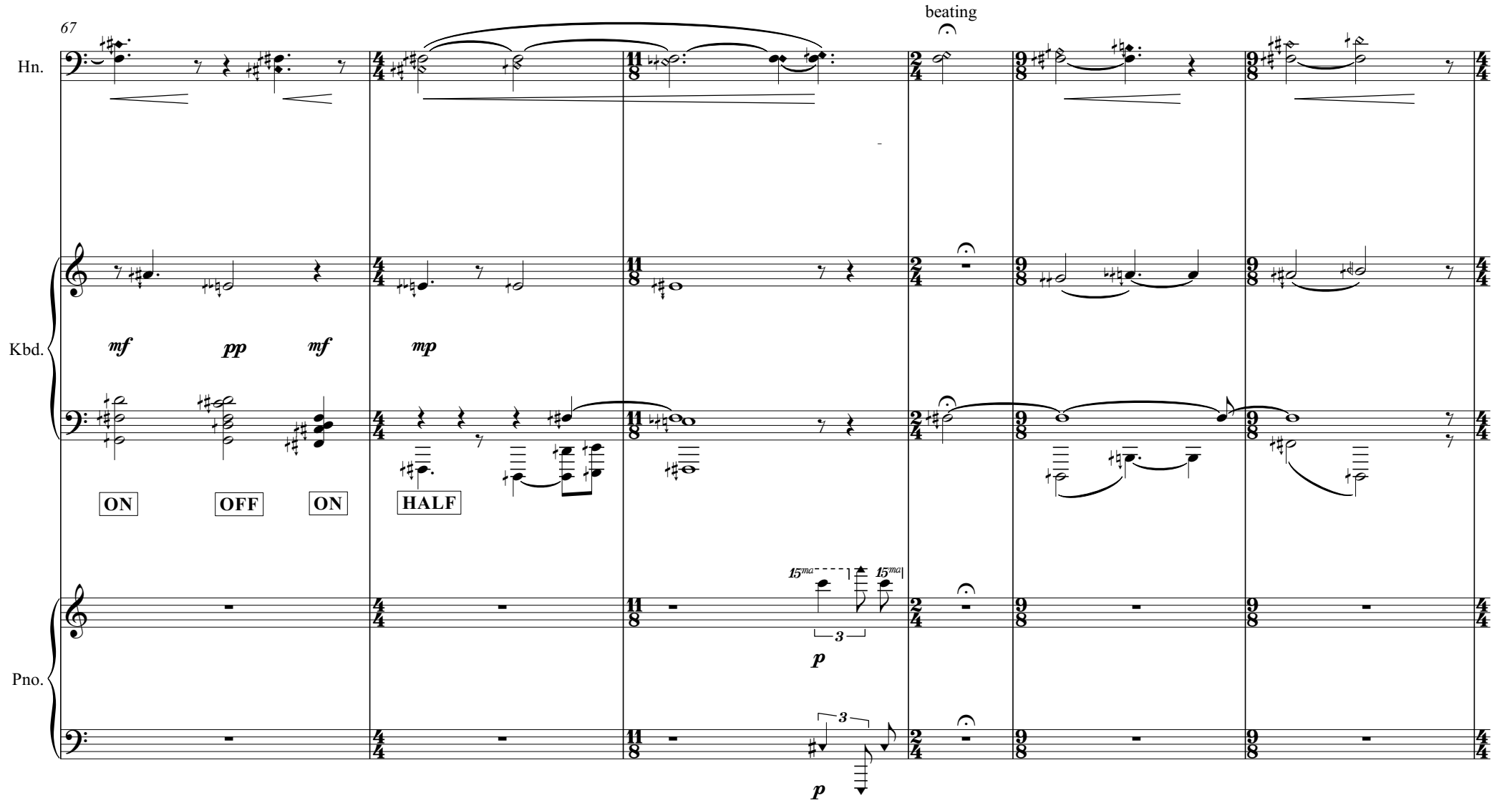
l.h.

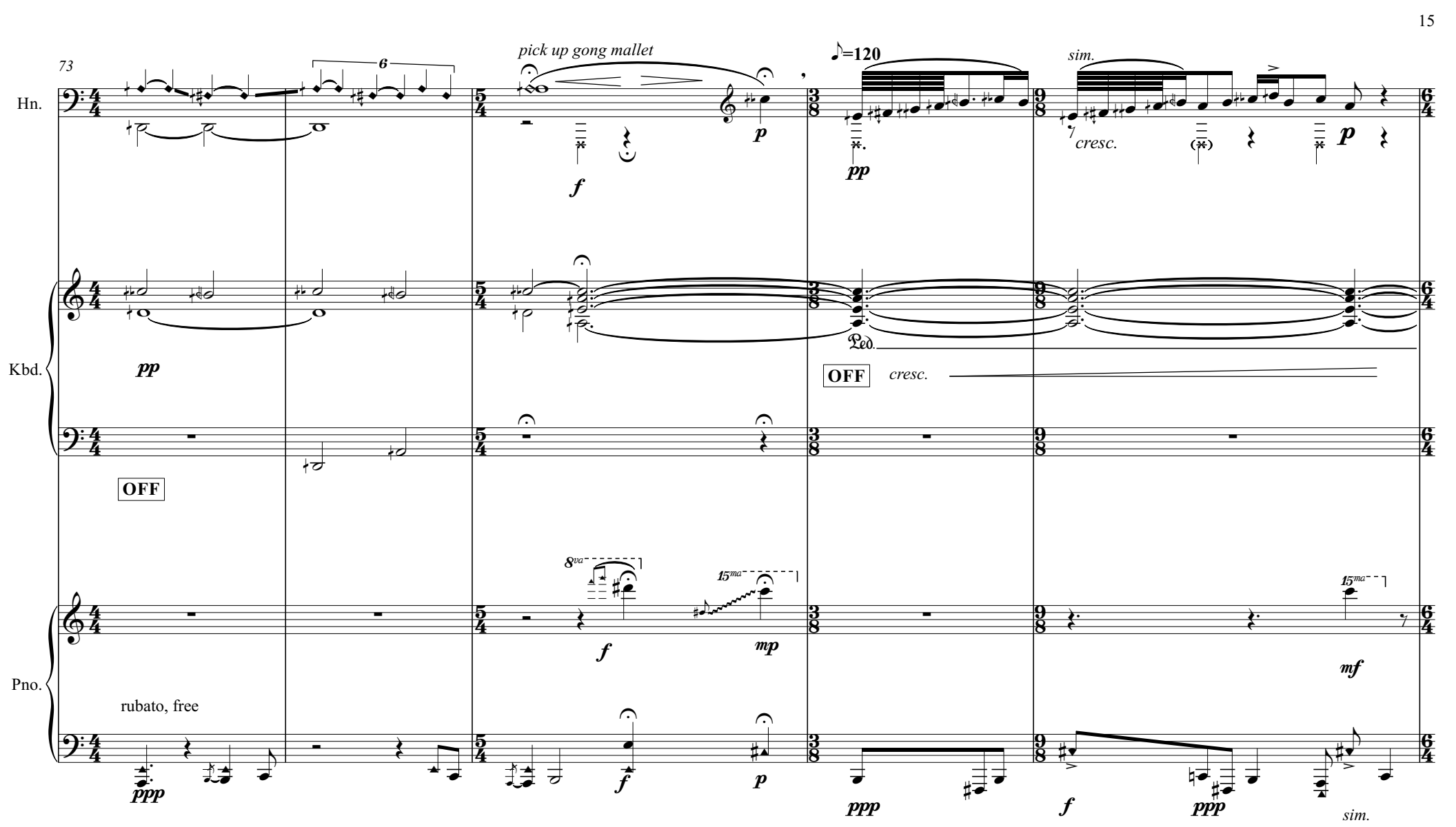
8vb

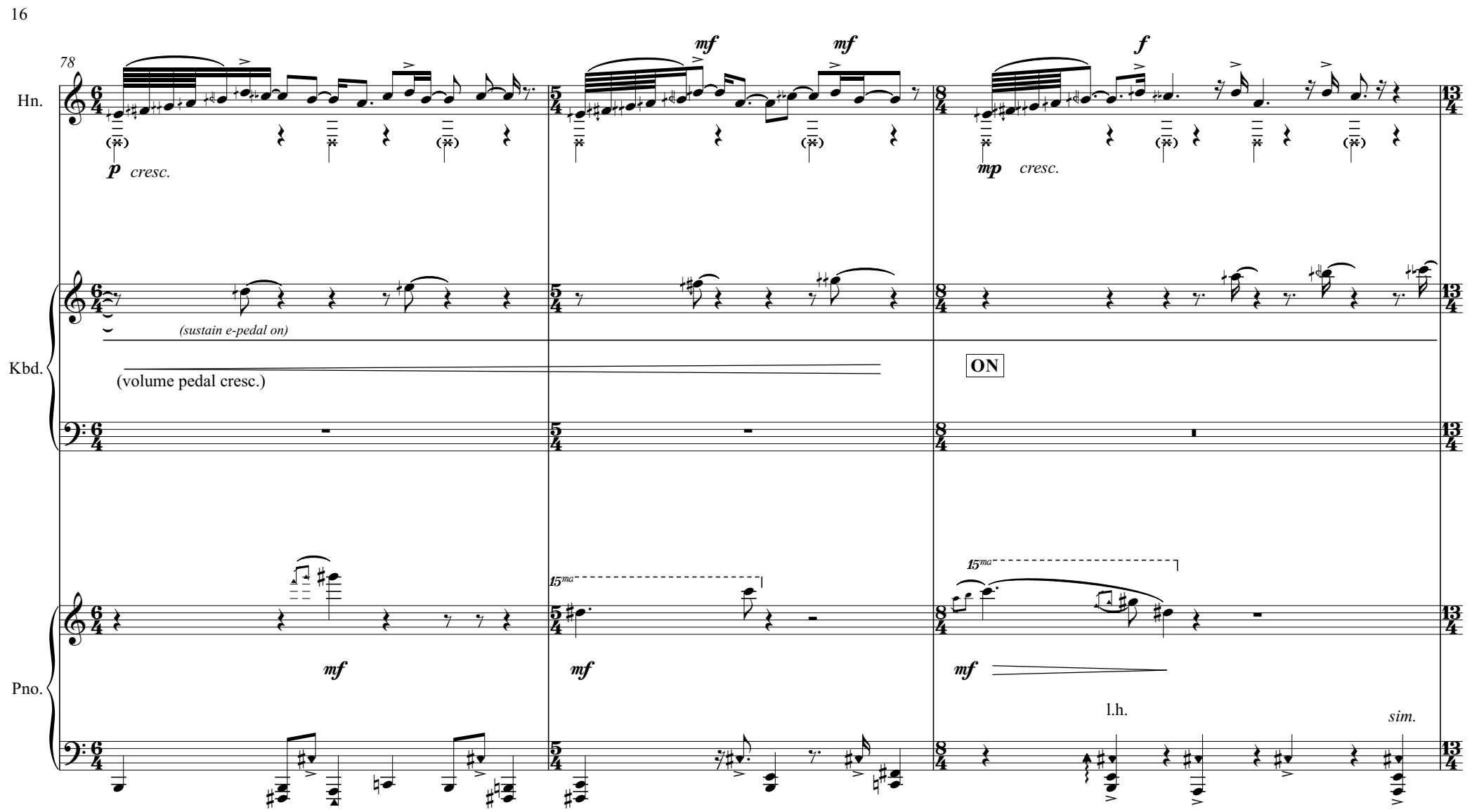
*mf*

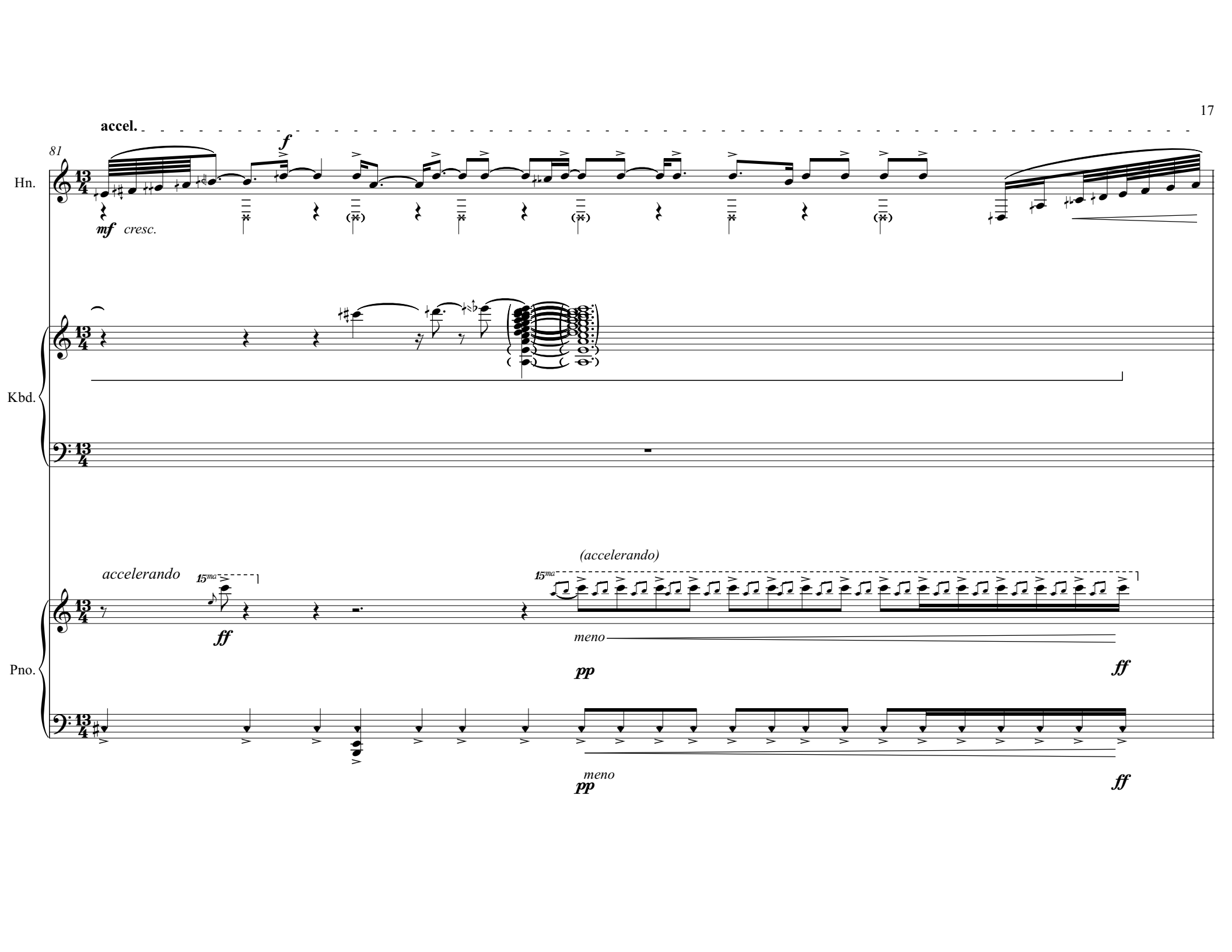

55
Hn.
Kbd.
Pno.
mf
f
mf

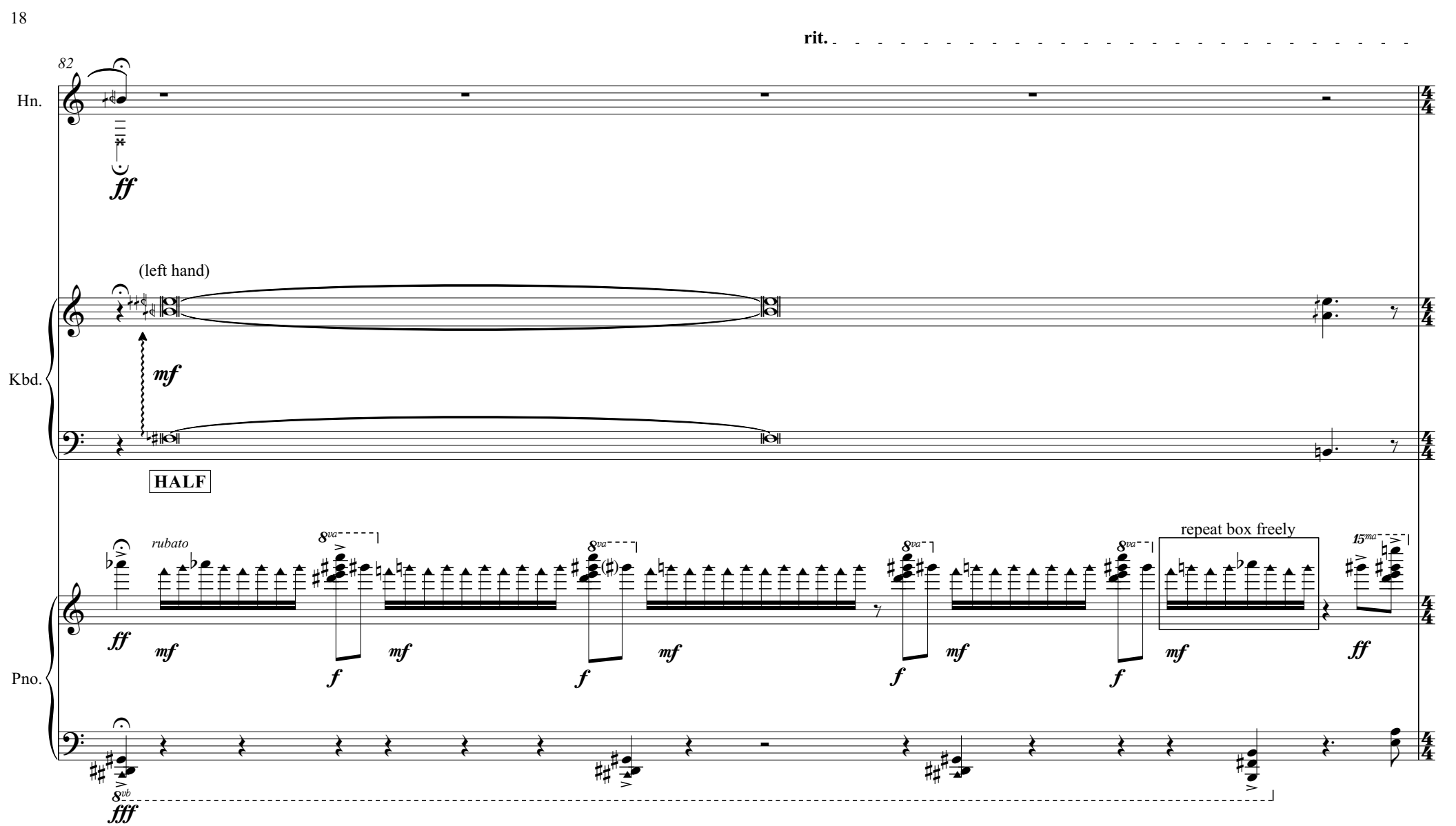

61
Hn.
Kbd.
Pno.
f
cresc.
Tuning patch: D
pp
OFF
mf
mp
mf


67
beating
Hn.
Kbd.
mf
pp
mf
mp
ON
OFF
ON
HALF
15ma
15ma
3
p
Pno.
3
p


73
6
pick up gong mallet
♪=120
sim.
Hn.
f
p
pp
cresc.
p
Kbd.
pp
Ped.
OFF
cresc.
OFF
8va
15ma
15ma
Pno.
f
mp
mf
rubato, free
ppp
f
p
ppp
f
ppp
sim.

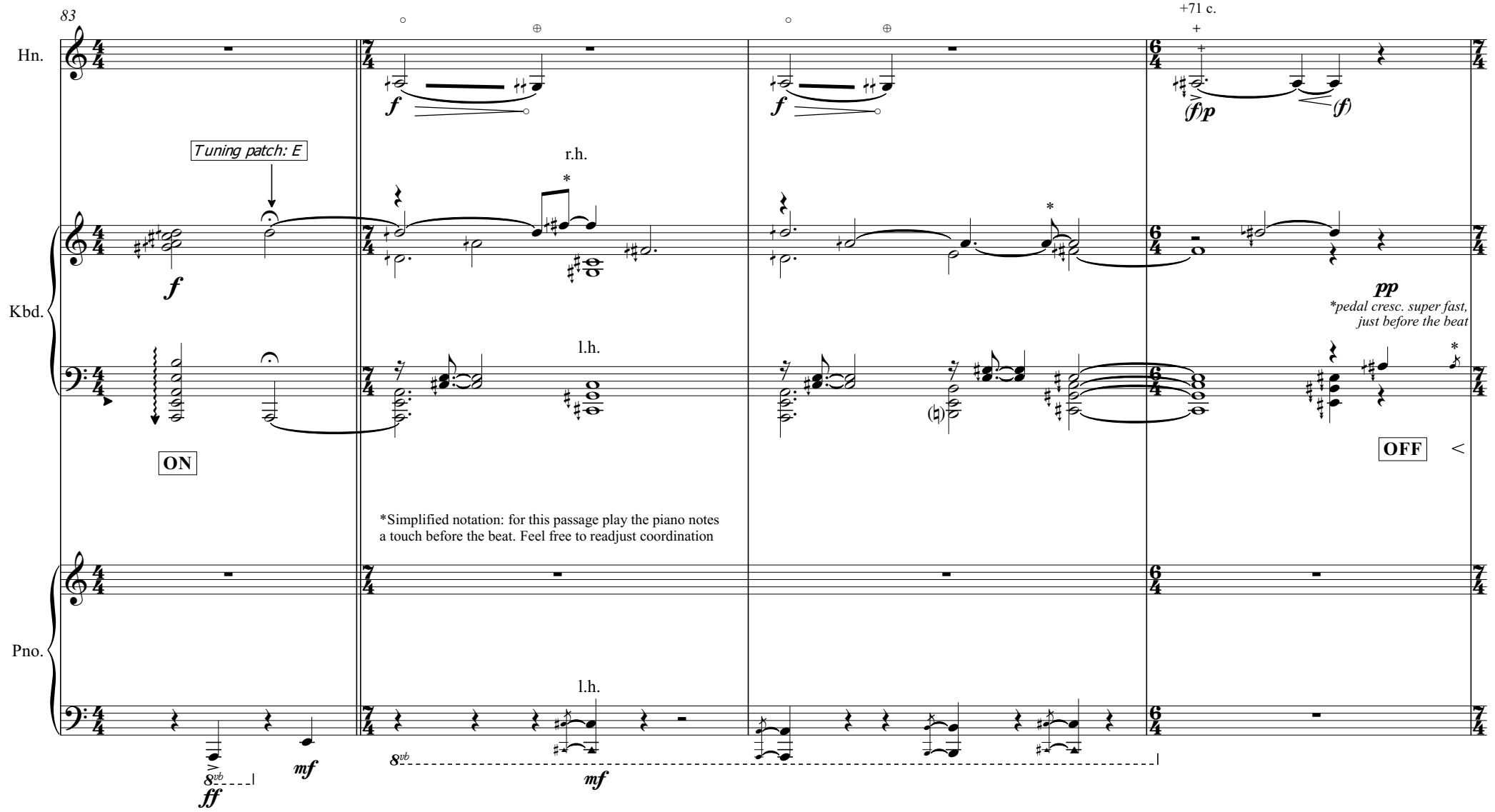

78
Hn.
p cresc.
mf
mf
mp cresc.
f
Kbd.
(sustain e-pedal on)
(volume pedal cresc.)
ON
Pno.
15ma
mf
mf
mf
l.h.
sim.

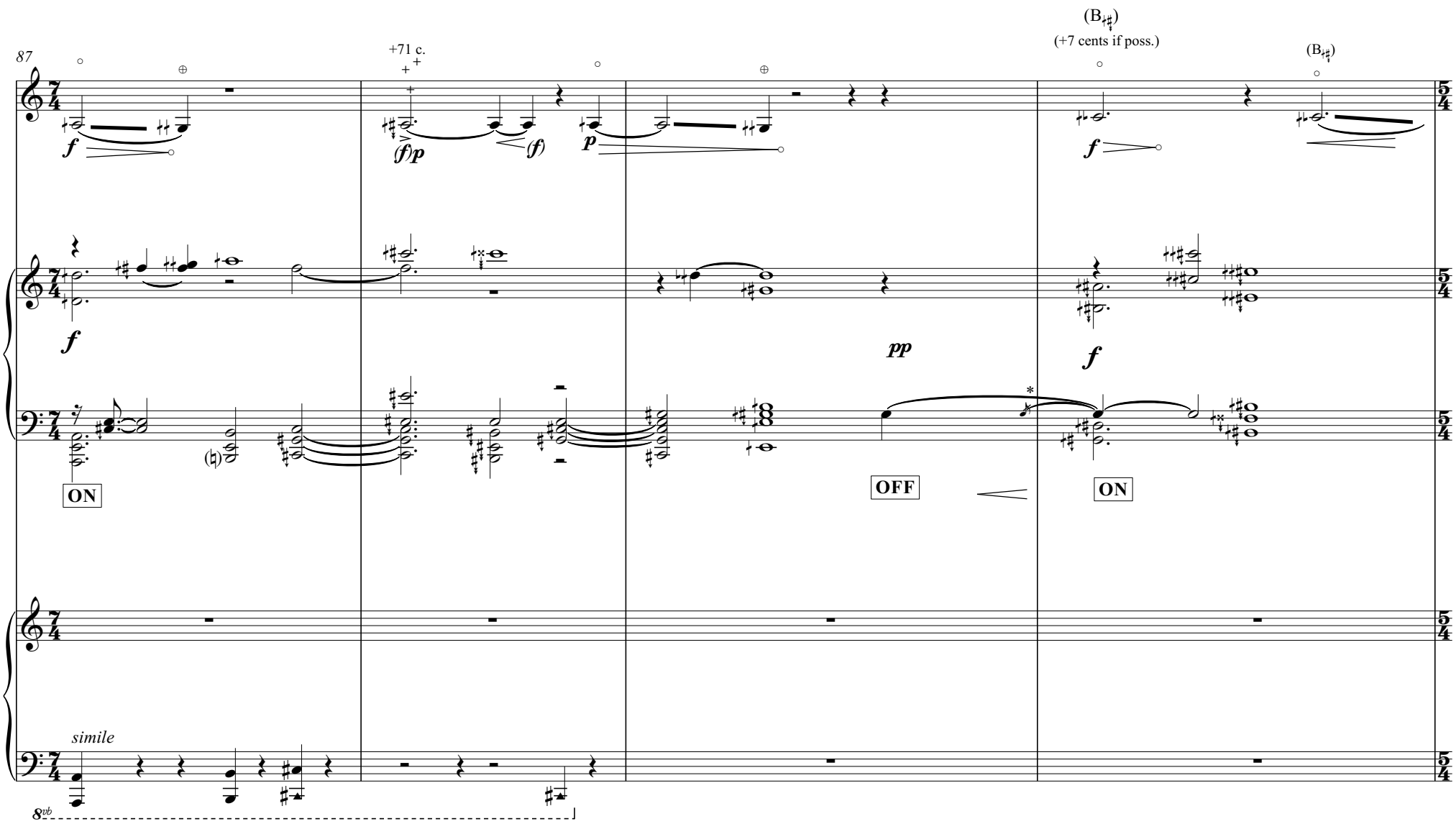

accel.
81
Hn.
f
mf
cresc.
Kbd.
accelerando
15ma
ff
(accelerando)
15ma
meno
pp
ff
Pno.
meno
pp
ff

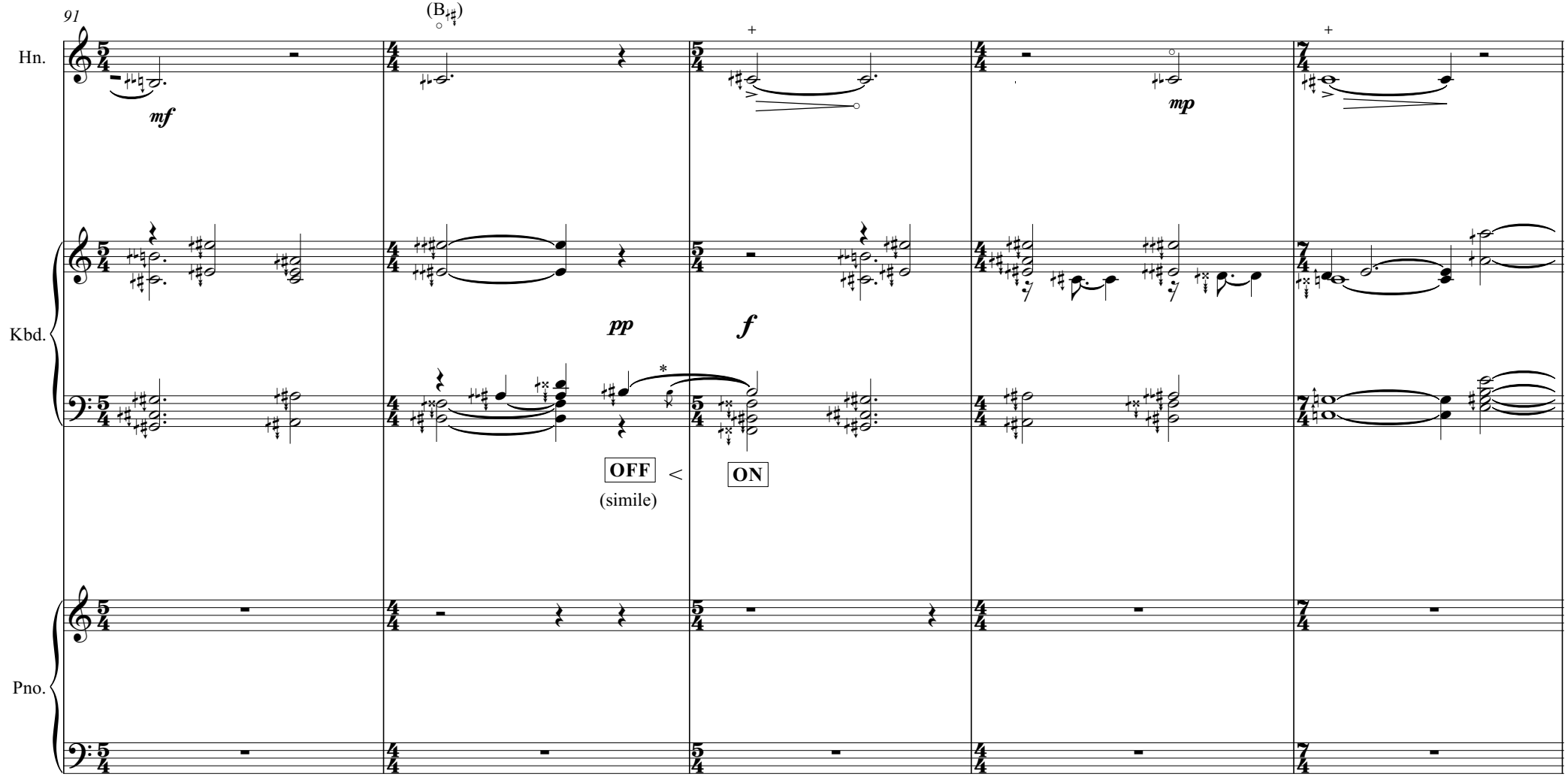

rit.
82
Hn.
ff
(left hand)
Kbd.
mf
HALF
rubato
8va
repeat box freely
15ma
Pno.
ff
mf
f
8vb
fff

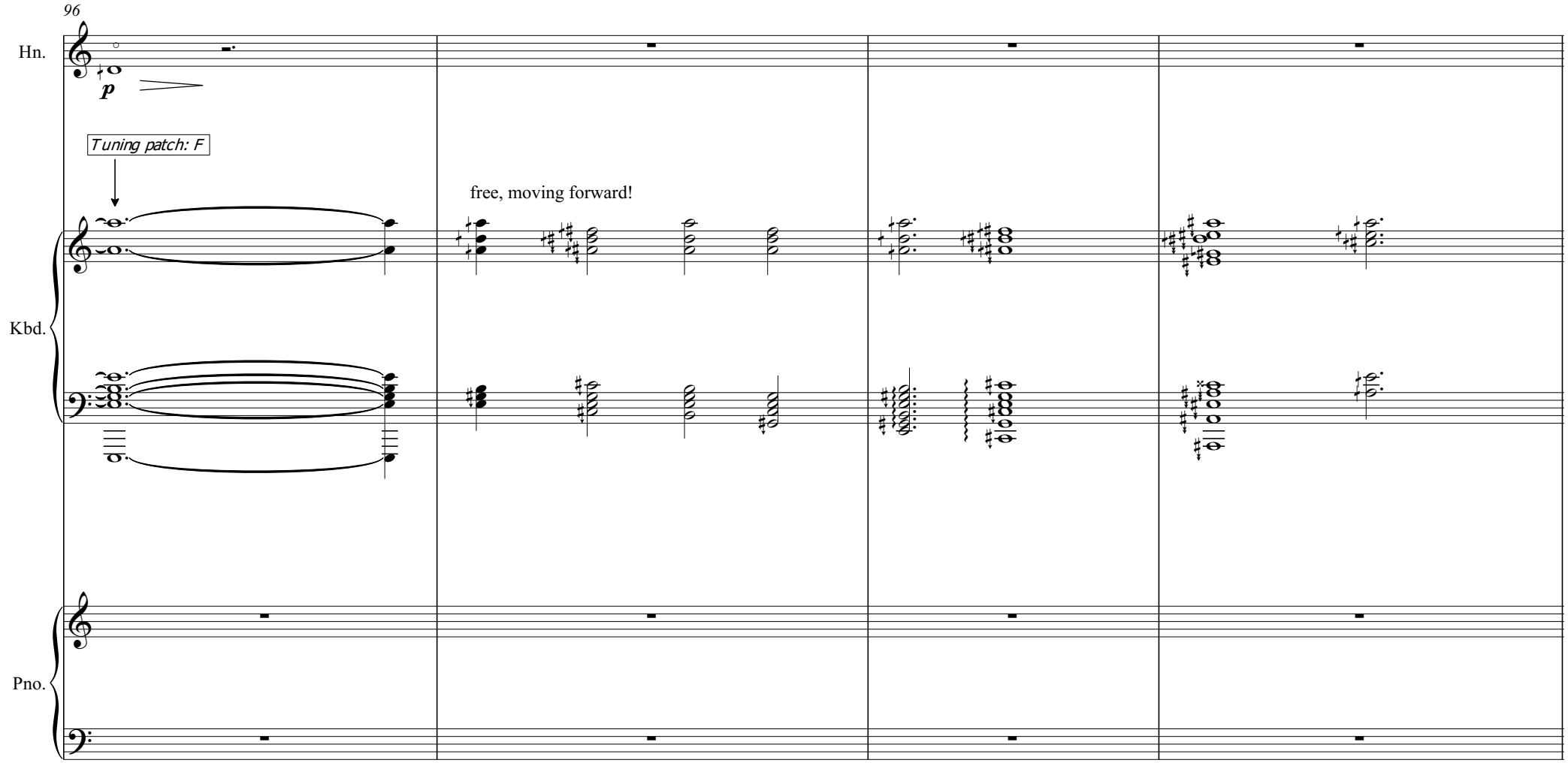
## IV. Troisième chant de la nuit: l'évasion des gargouilles

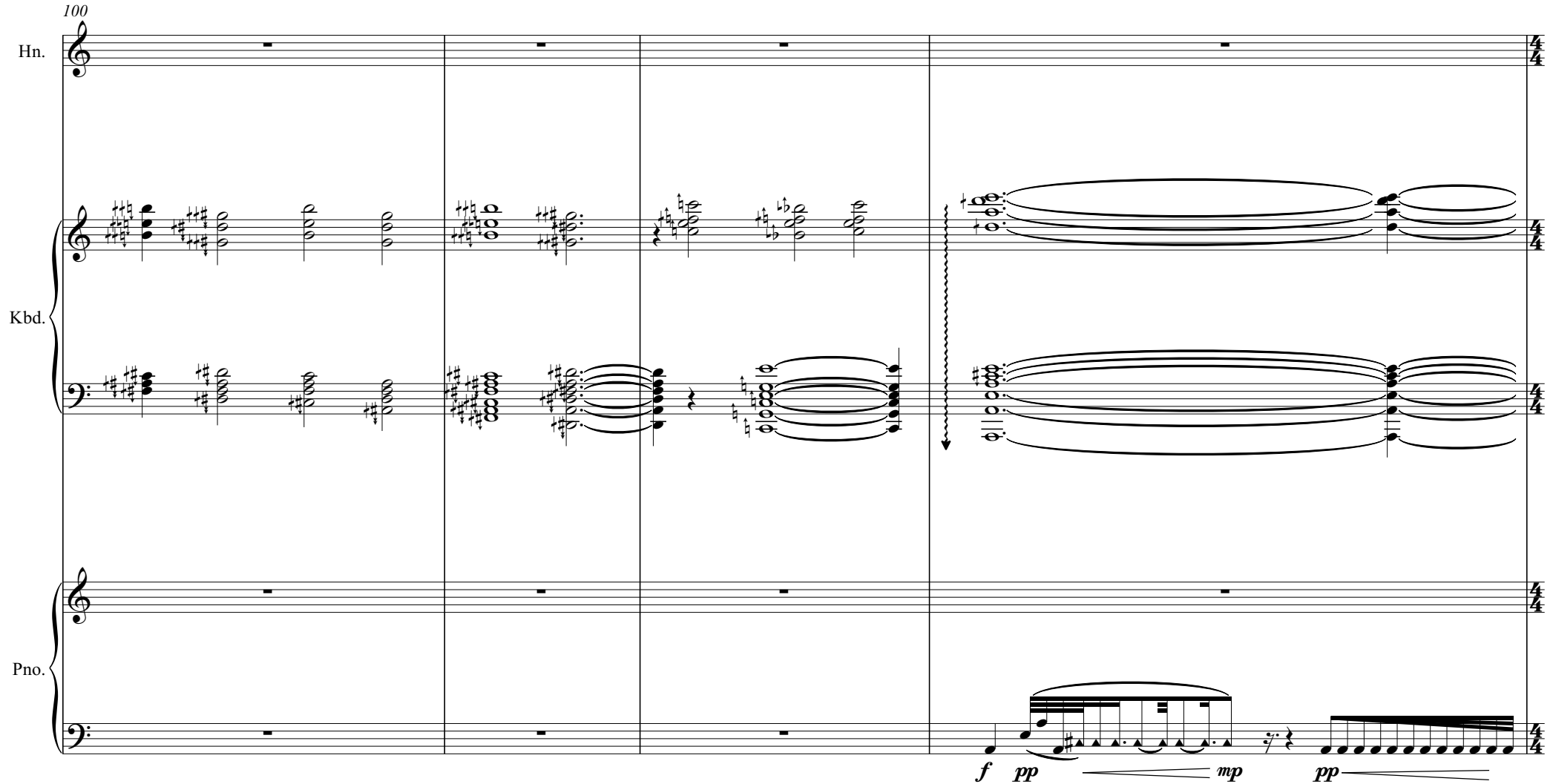
Herefrom until bar 104: natural horntones as well as half-stopped and
fully-stopped tones are indicated - otherwise only half or fully stopped are/have been indicated

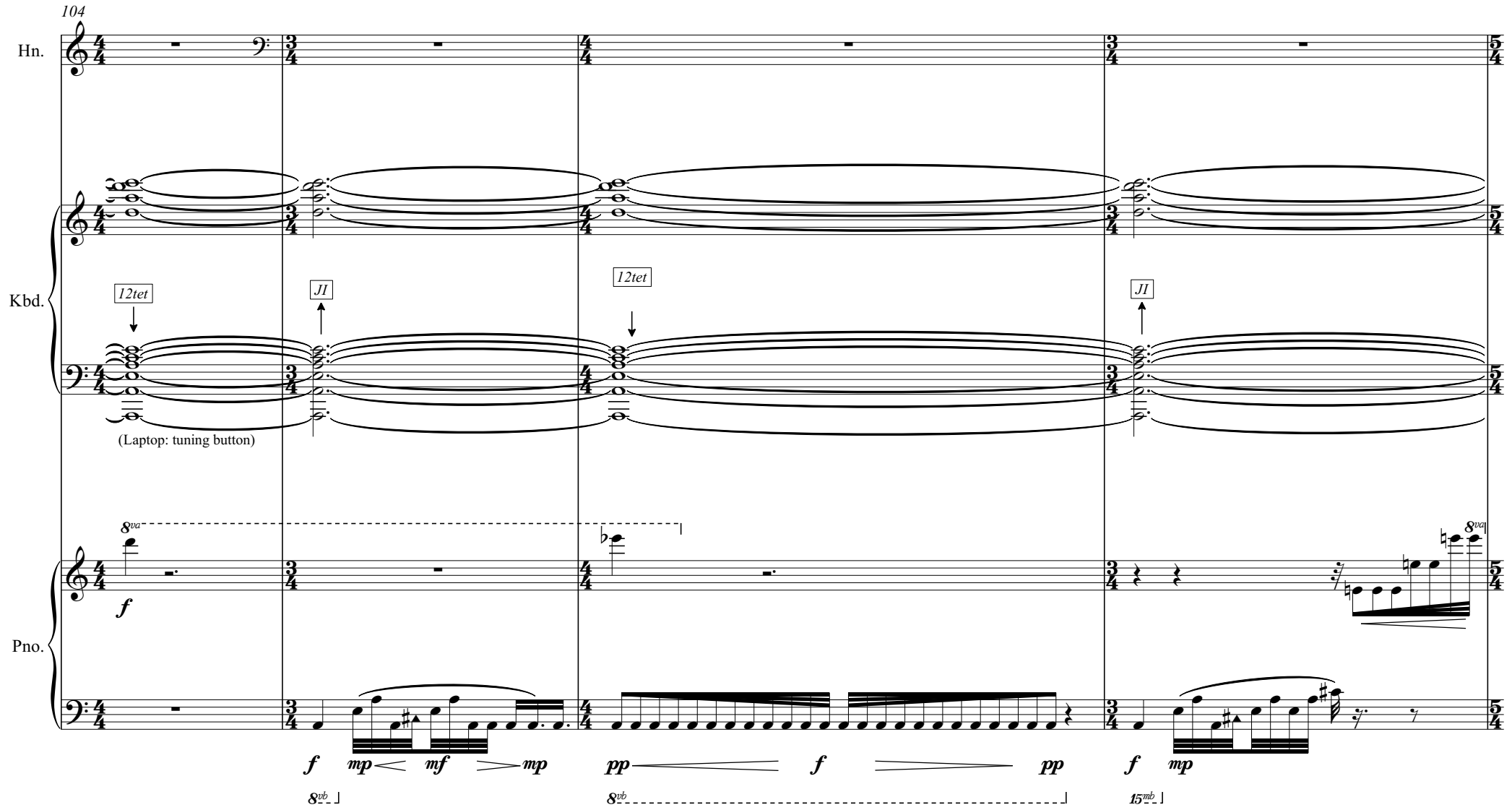



87
+71 c.
(B♮)
(+7 cents if poss.)
(B♮)
Hn.
Kbd.
Pno.
f
(f)p
(f)
p
f
f
pp
f
ON
OFF
ON
simile
8vb

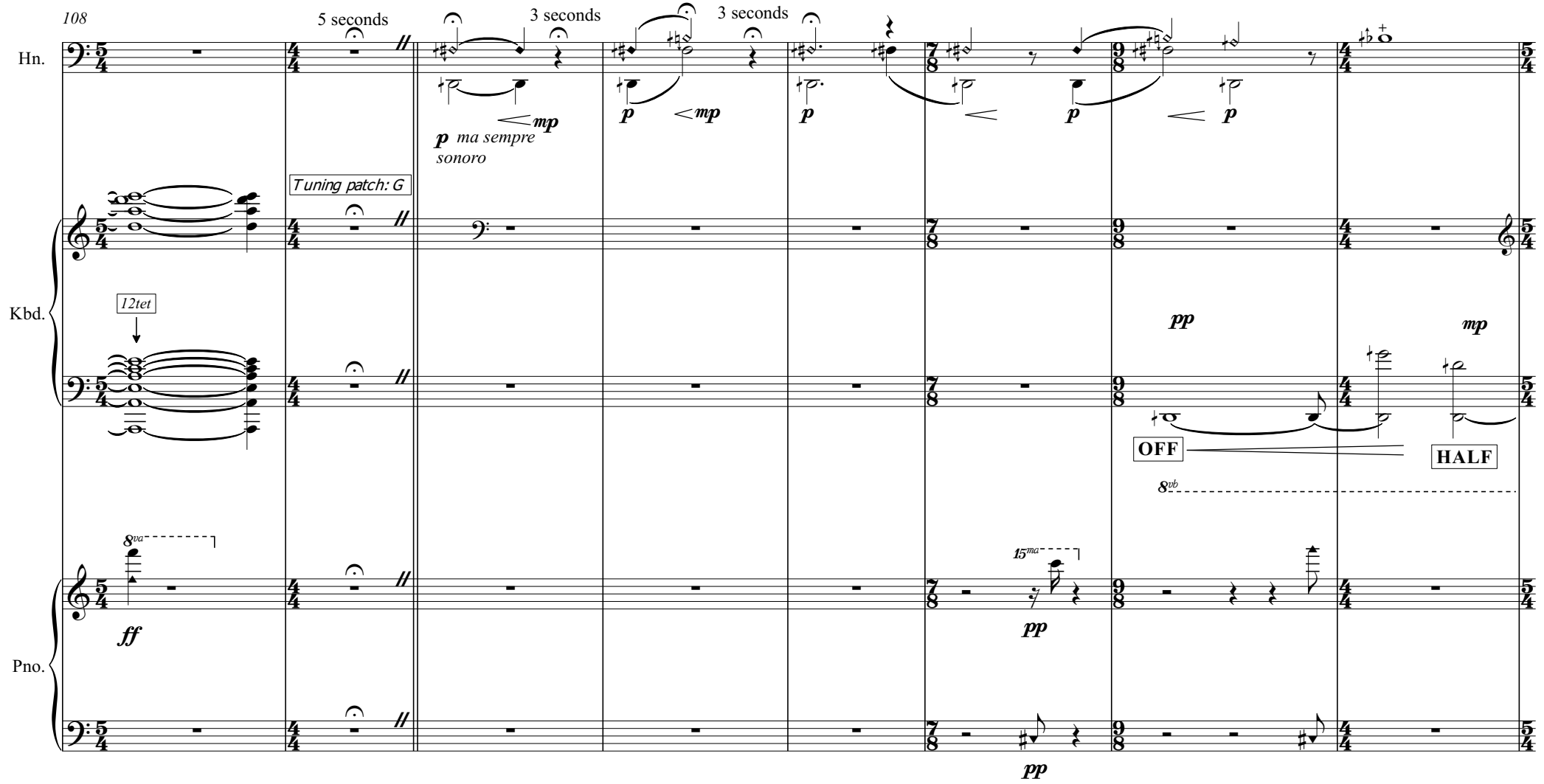

91
(B♮)
Hn.
mf
mp
Kbd.
pp
f
OFF
(simile)
ON
Pno.

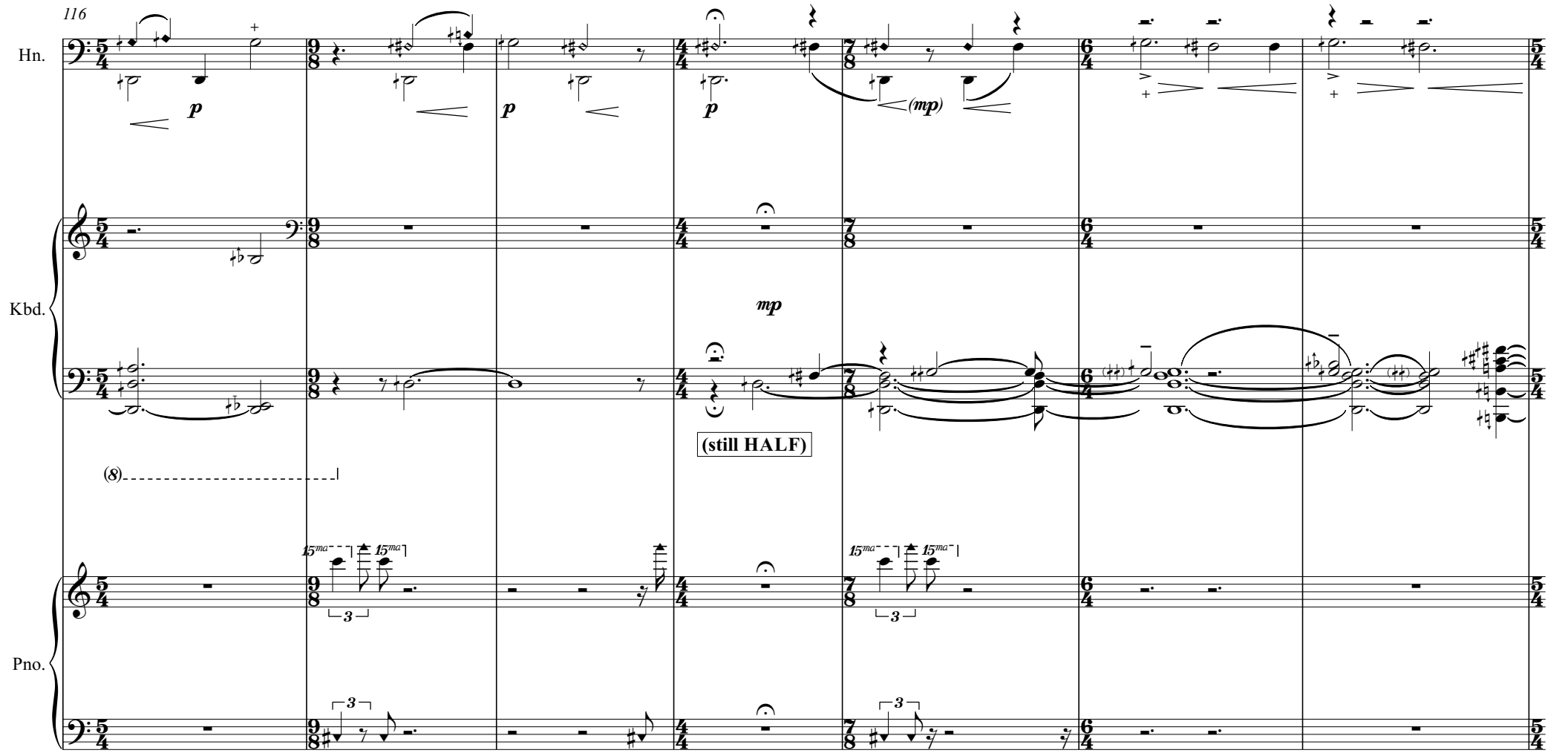

96
Hn.
p
Tuning patch: F
free, moving forward!
Kbd.
Pno.

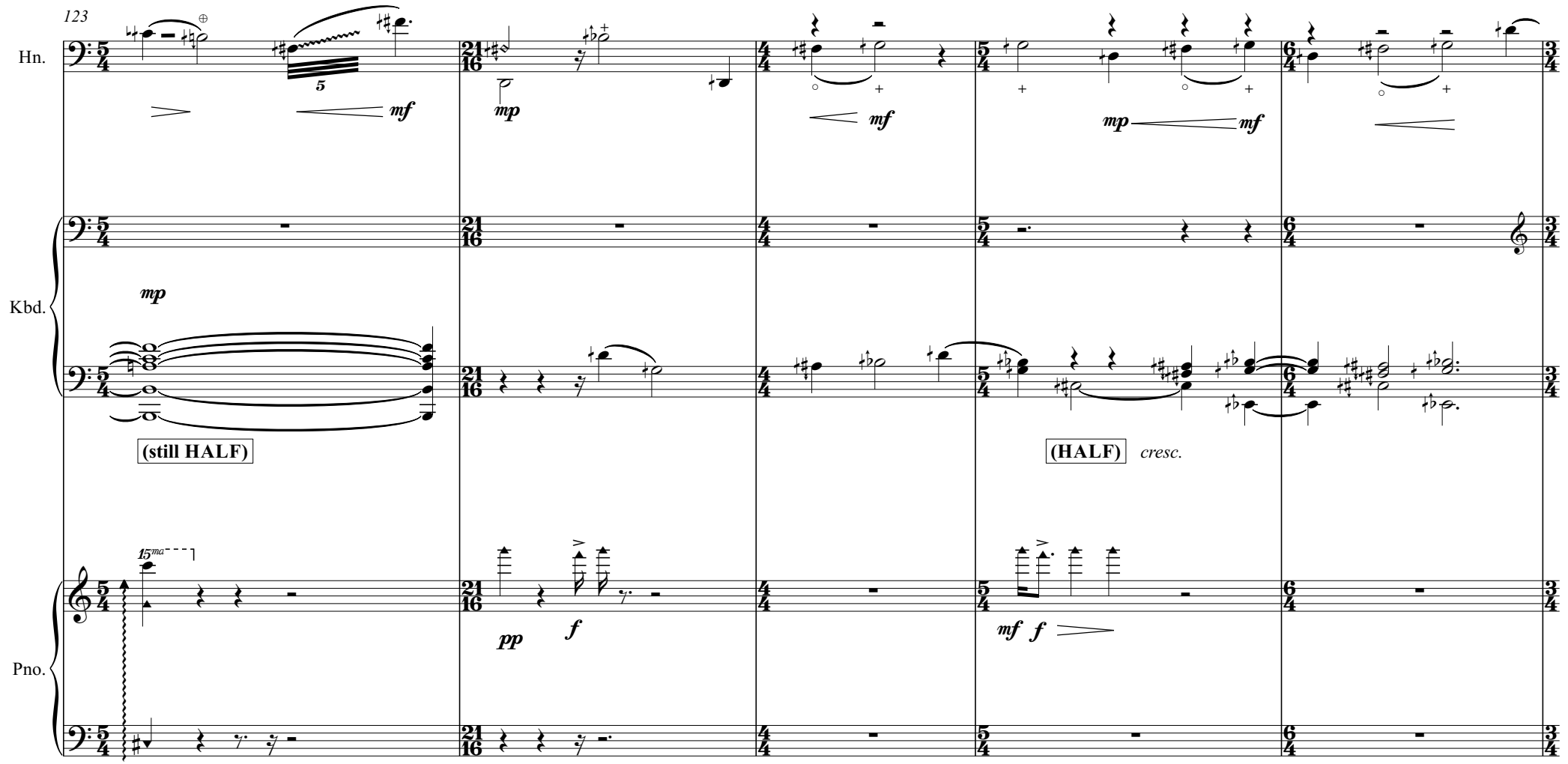

100
Hn.
Kbd.
Pno.
f
pp
mp
pp

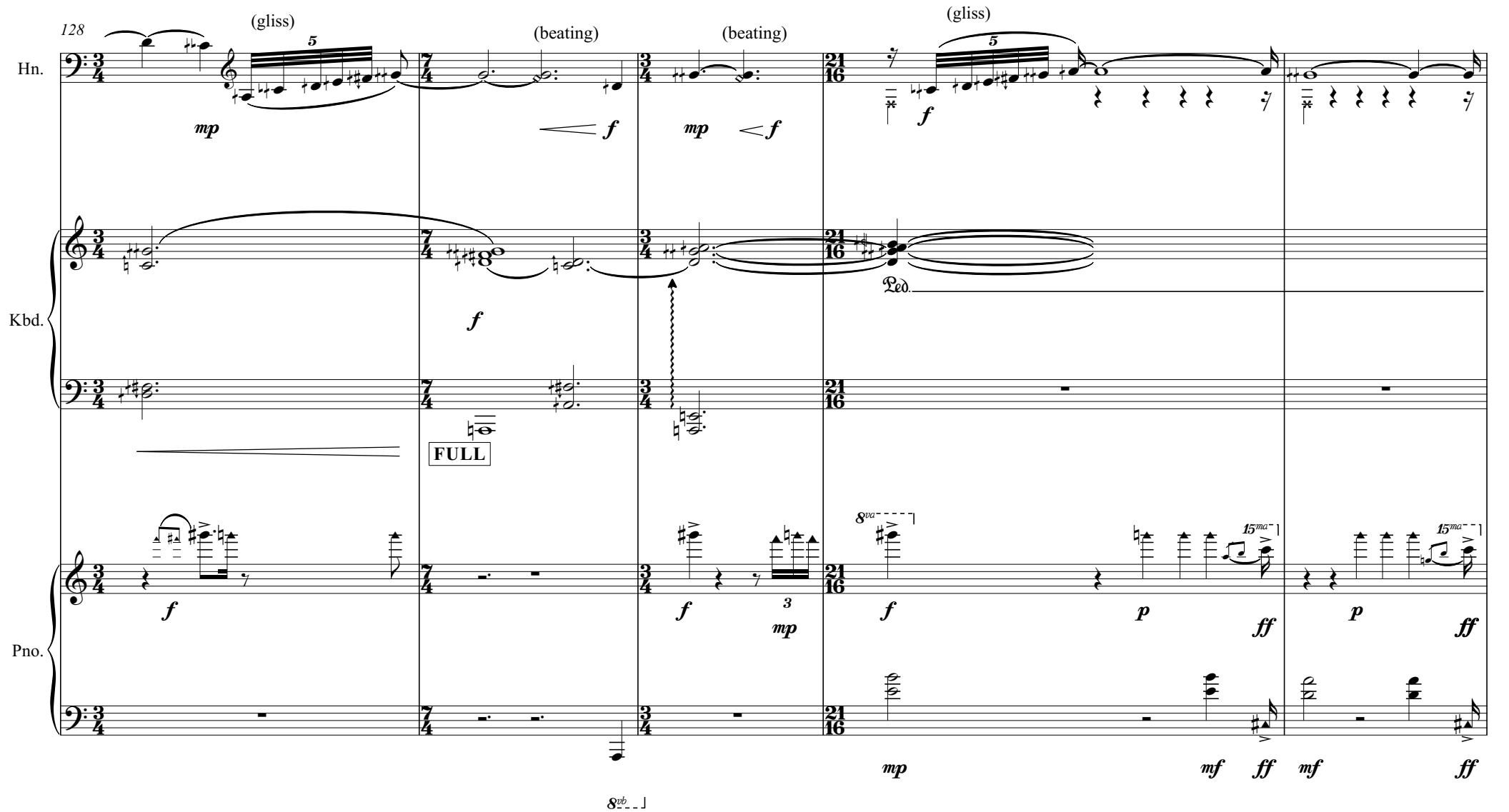

104
Hn.
Kbd.
12tet
JI
12tet
JI
(Laptop: tuning button)
Pno.
8va
f
8va
f
mp
mf
mp
pp
f
pp
f
mp
8vb
8vb
15mb

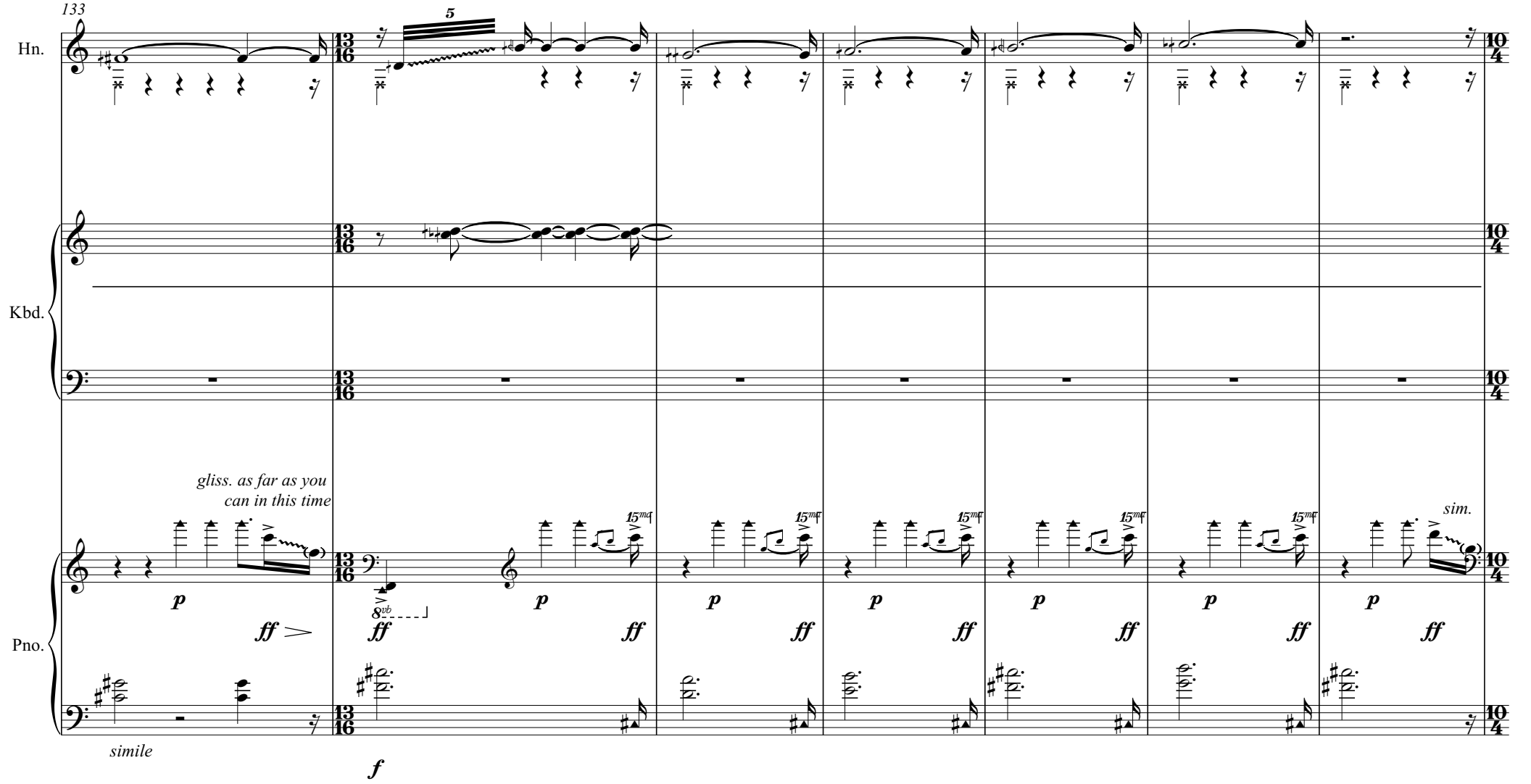
## V. Langues d'eau, ♩=46

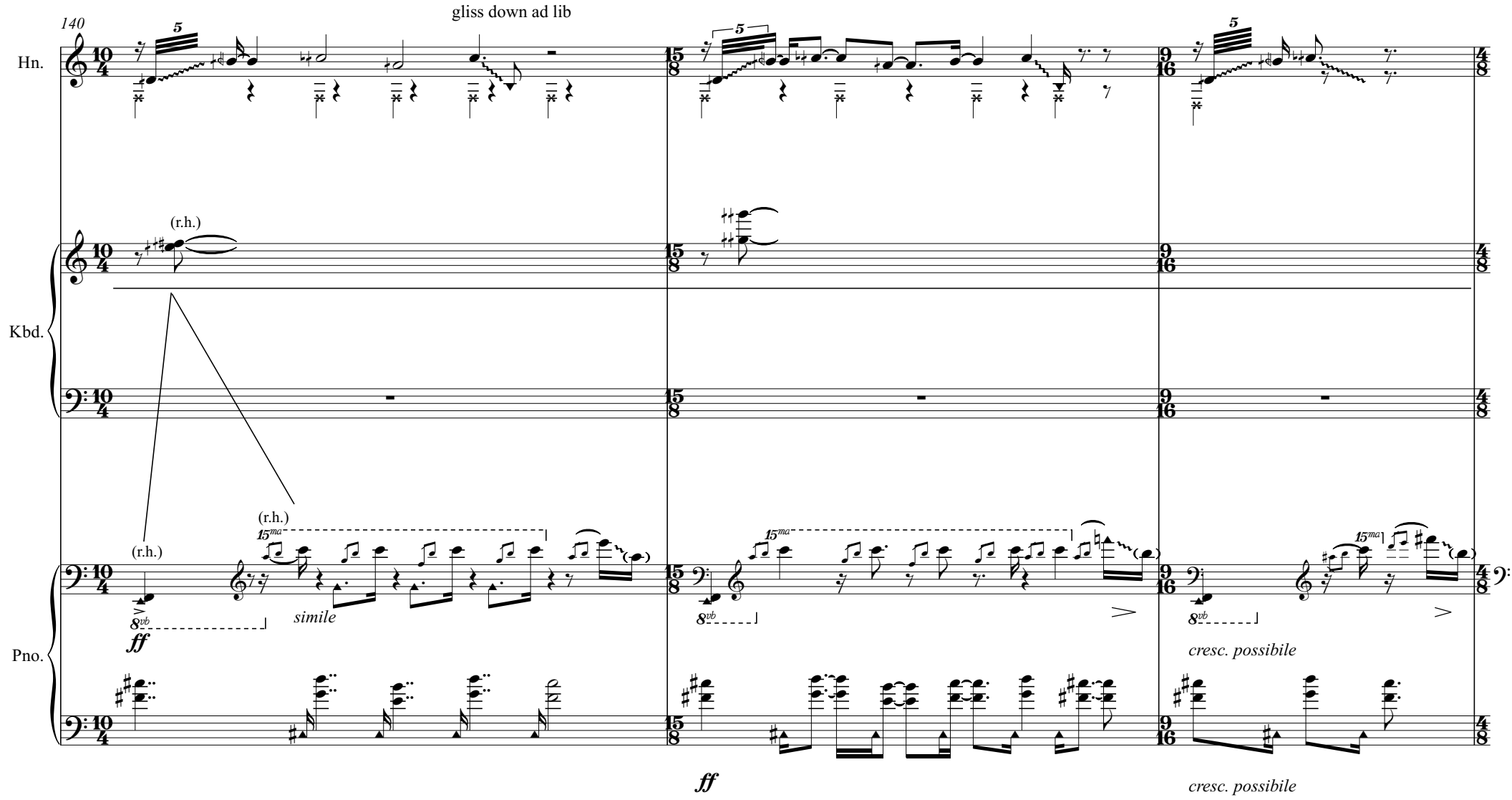


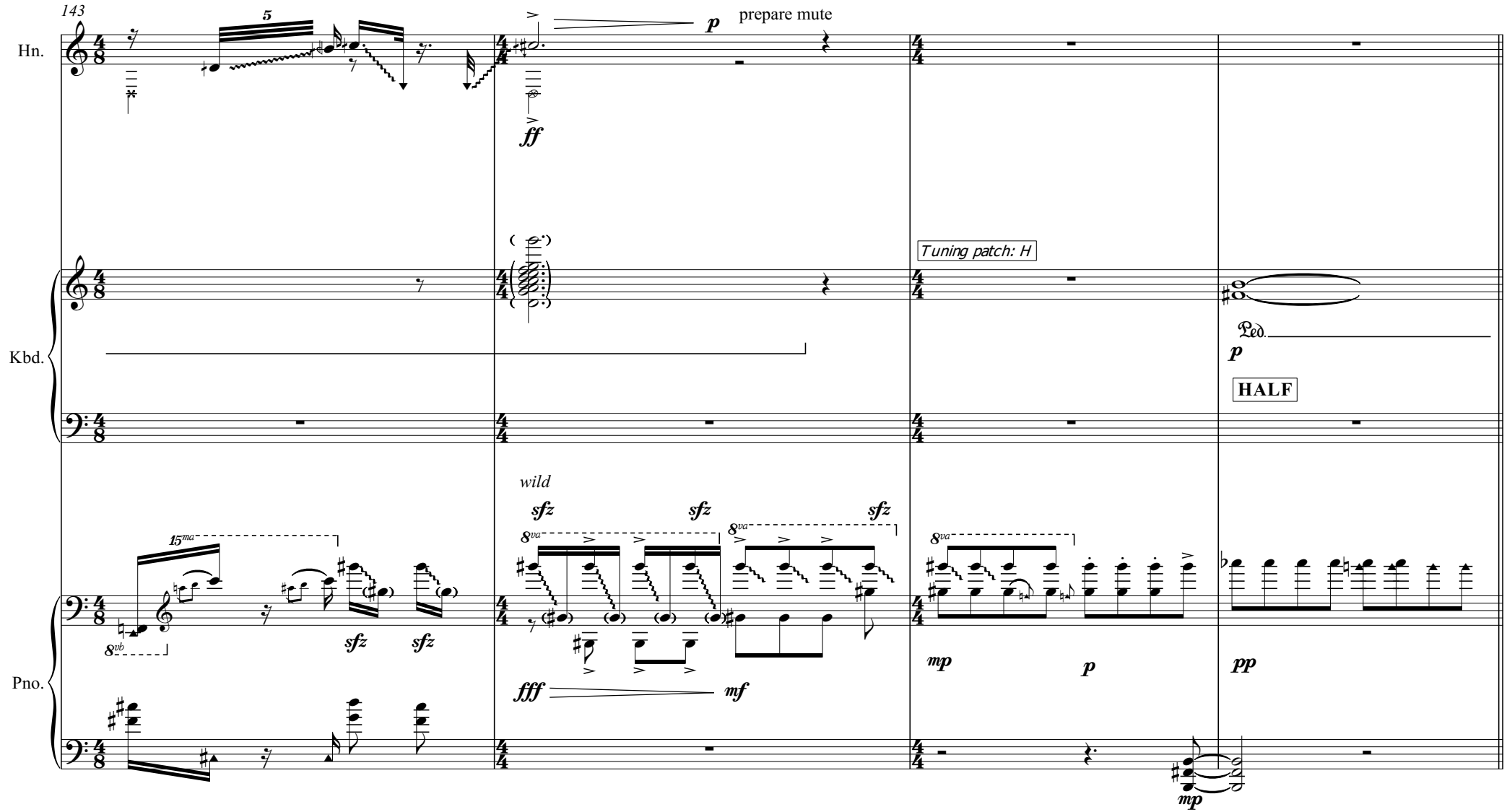

116
Hn.
Kbd.
Pno.
p
p
p
(mp)
mp
(still HALF)
(8)
15ma
15ma
15ma
15ma
3
3
3
3


123
Hn.
Kbd.
Pno.
mf
mp
mf
mp
mf
mp
(still HALF)
(HALF)
cresc.
15ma
pp
f
mf
f

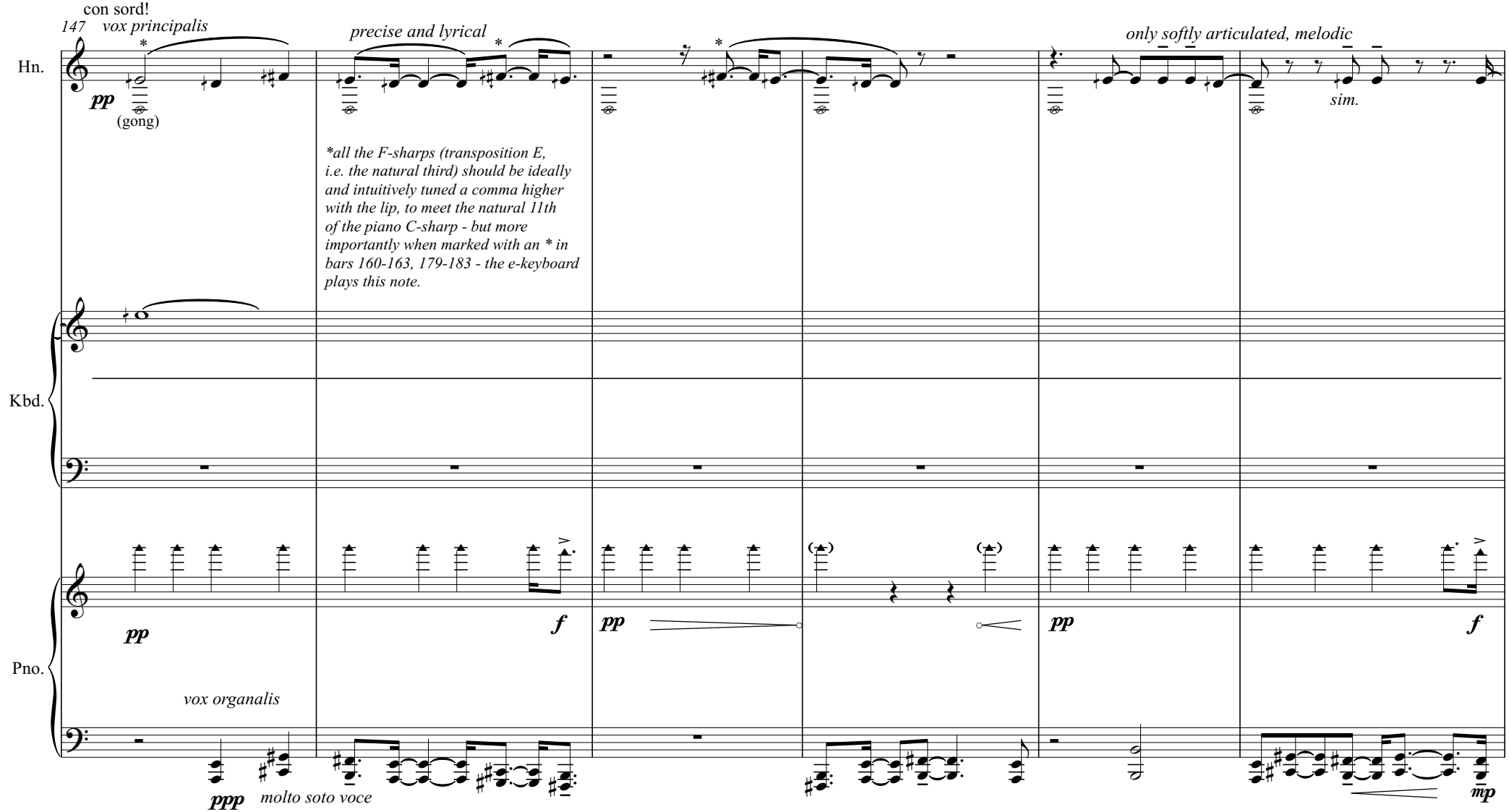

128
(gliss)
(beating)
(beating)
(gliss)
Hn.
Kbd.
Pno.
mp
f
mp
f
f
Ped.
f
FULL
8va
15ma
f
f
3
mp
f
p
ff
p
ff
mp
mf
ff
mf
ff
8vb

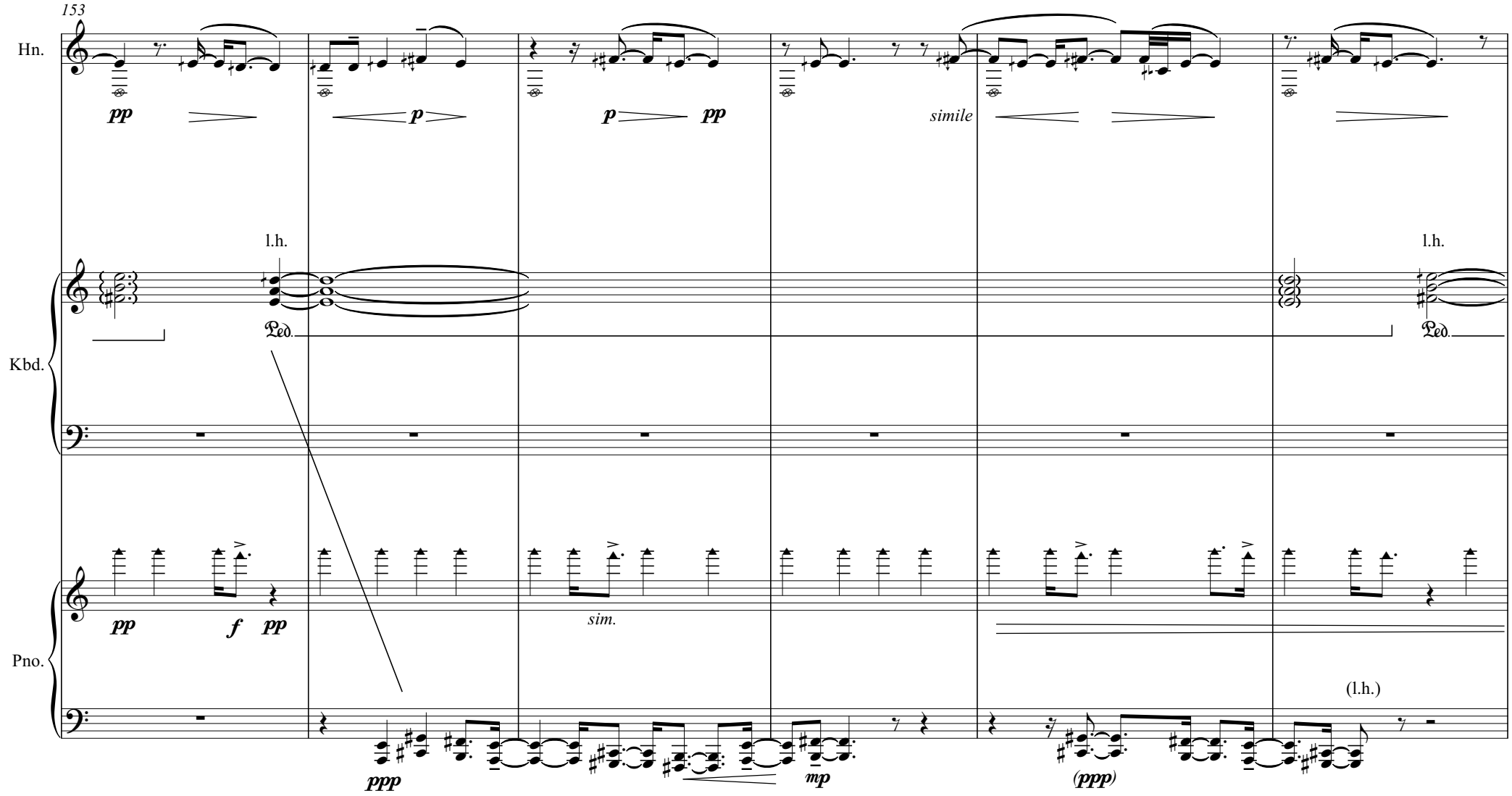

133
Hn.
Kbd.
Pno.
gliss. as far as you
can in this time
sim.
simile
p
ff
f
8vb
15mf

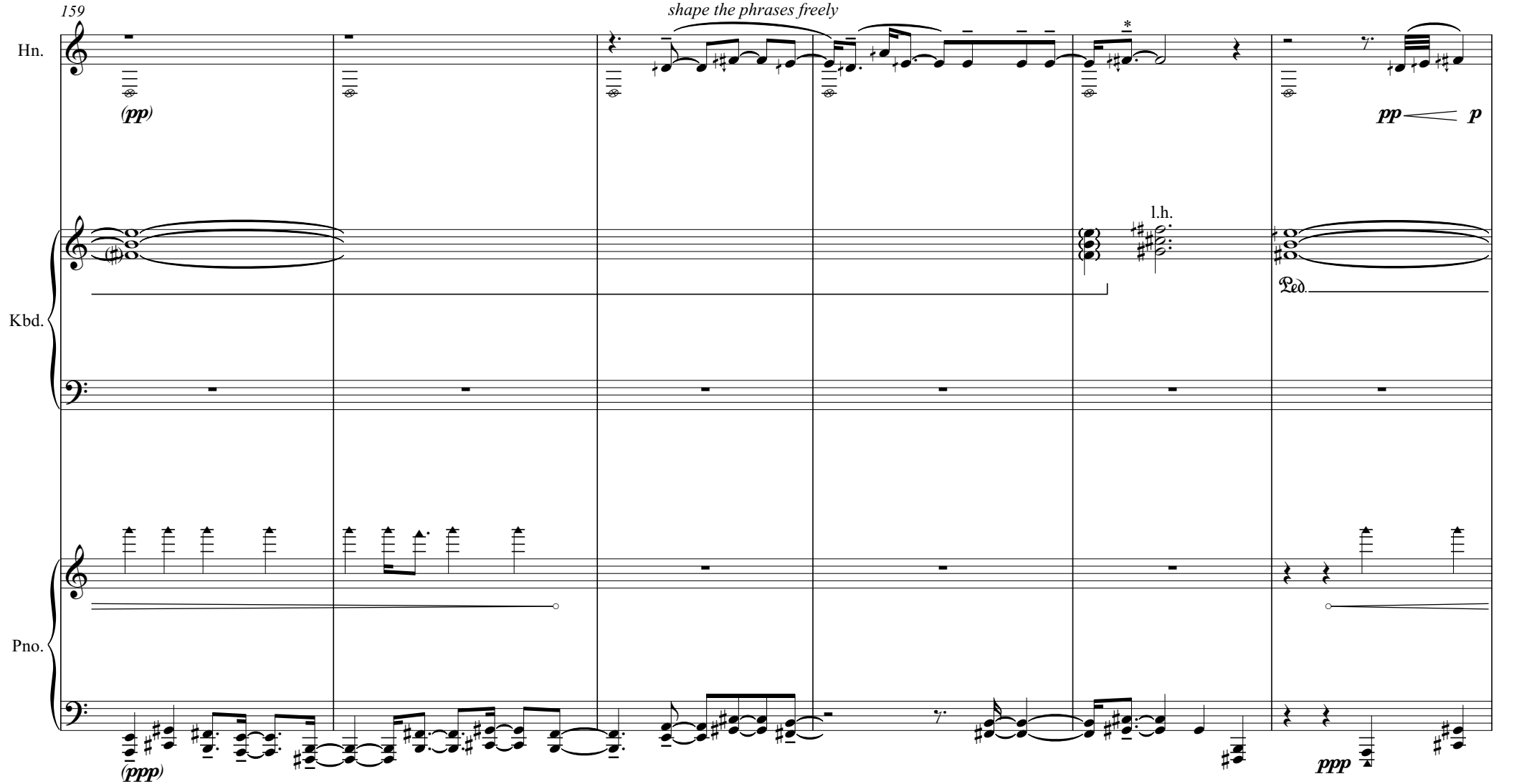

140
gliss down ad lib
Hn.
Kbd.
Pno.
(r.h.)
(r.h.)
(r.h.)
simile
ff
ff
cresc. possibile
cresc. possibile

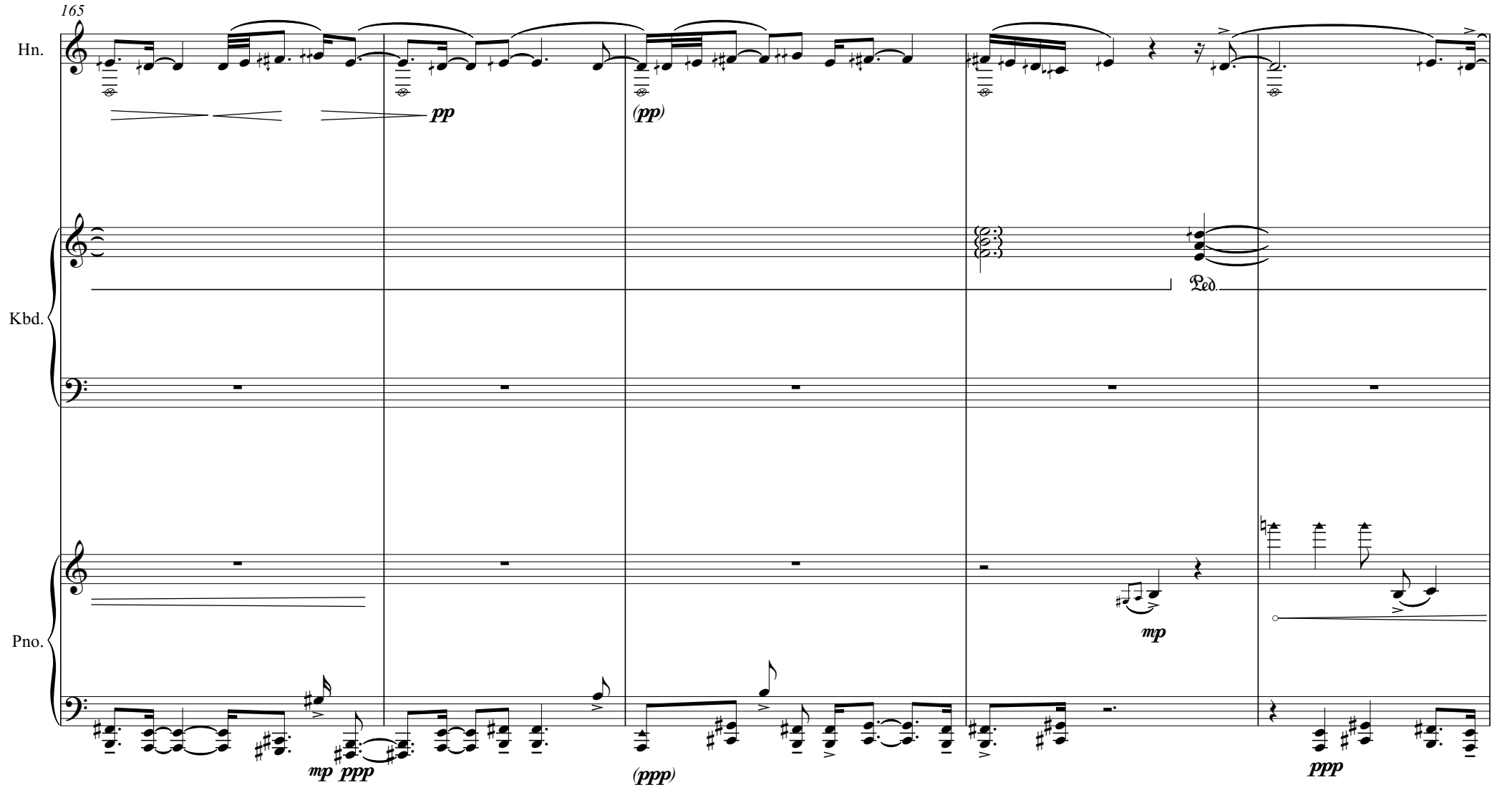

143
Hn.
Kbd.
Pno.
prepare mute
Tuning patch: H
HALF
wild

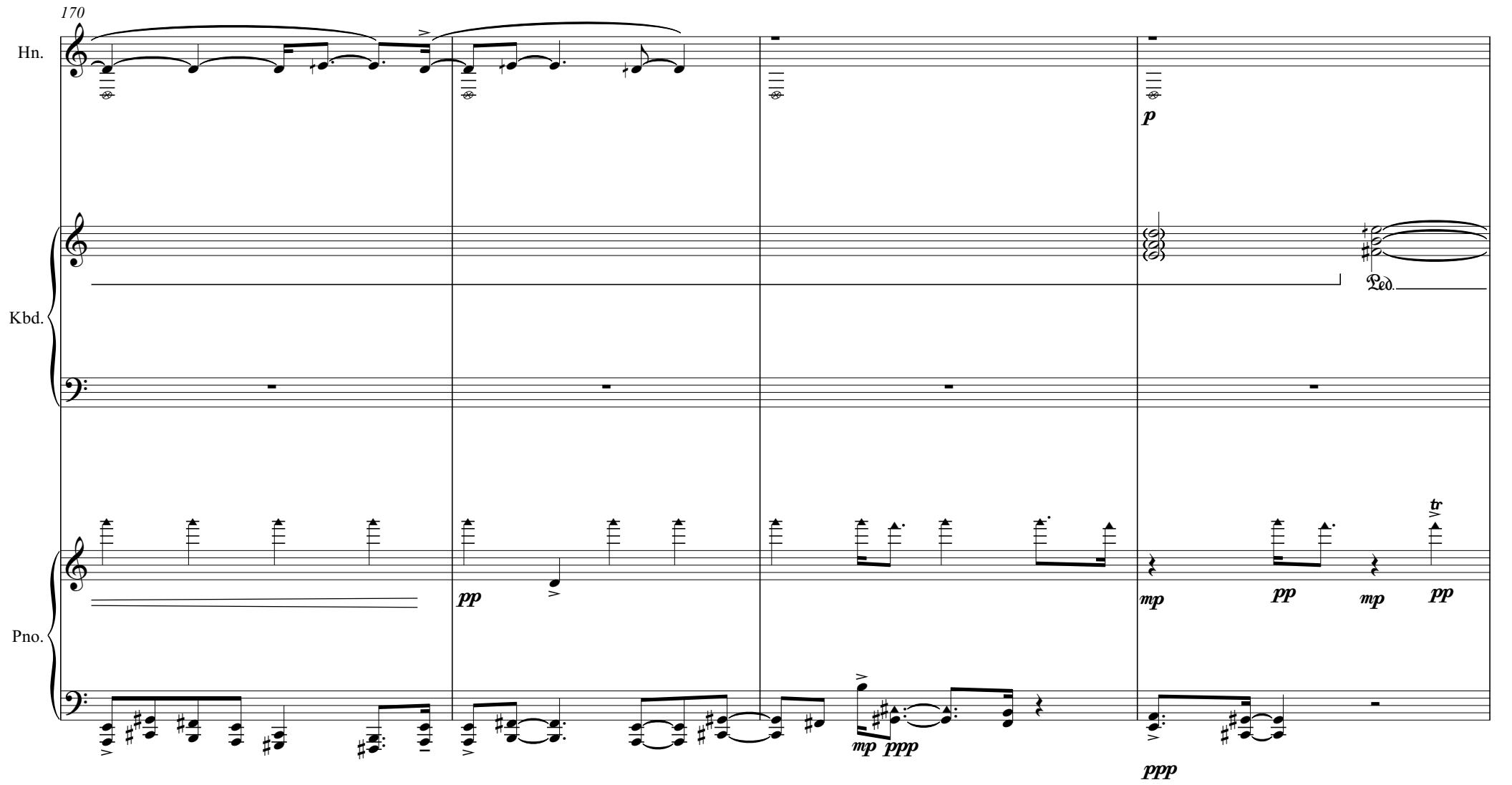
# VI. Mort de la nuit: organum profond et spectrale, a tempo, 𝅗𝅥=𝅝

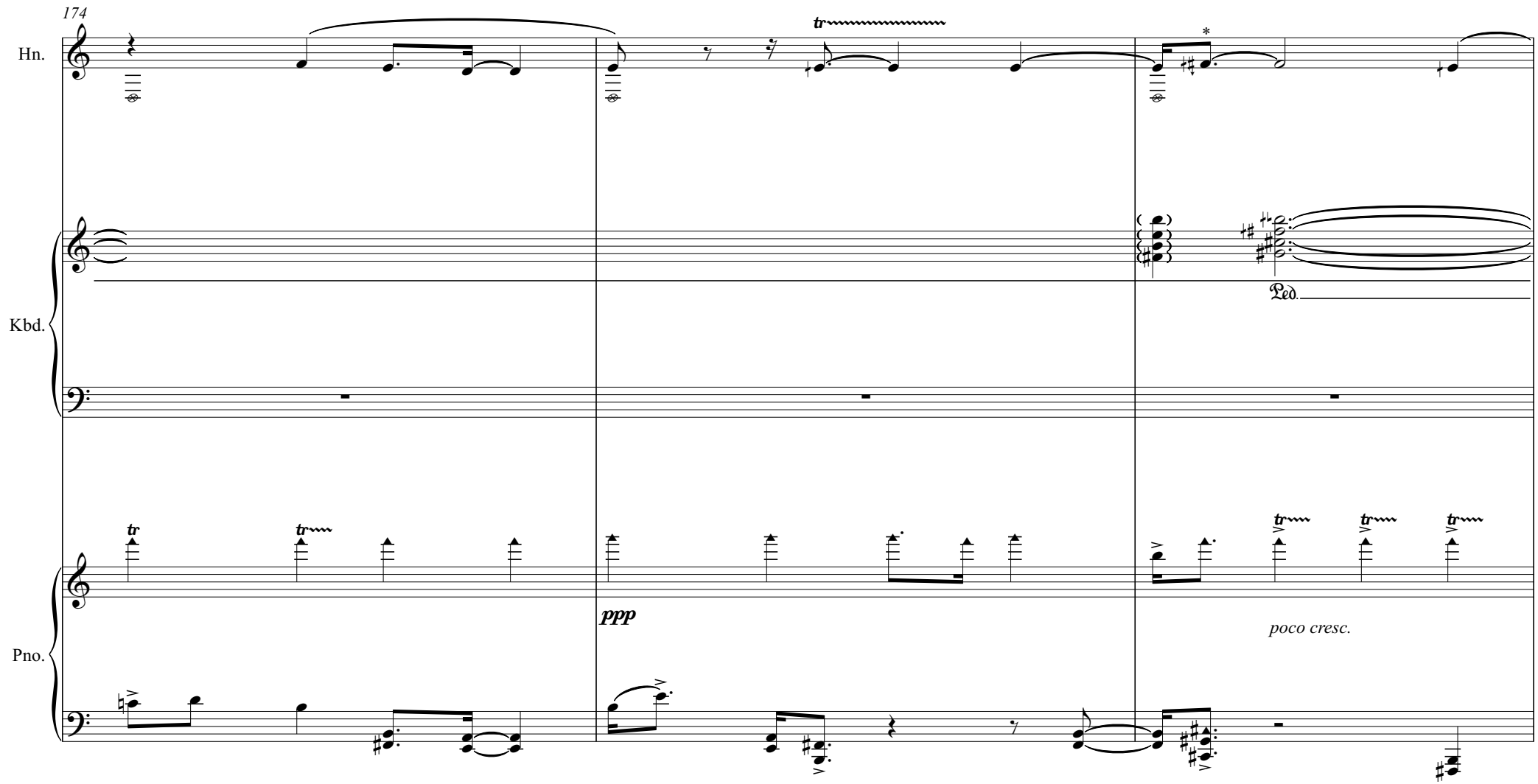


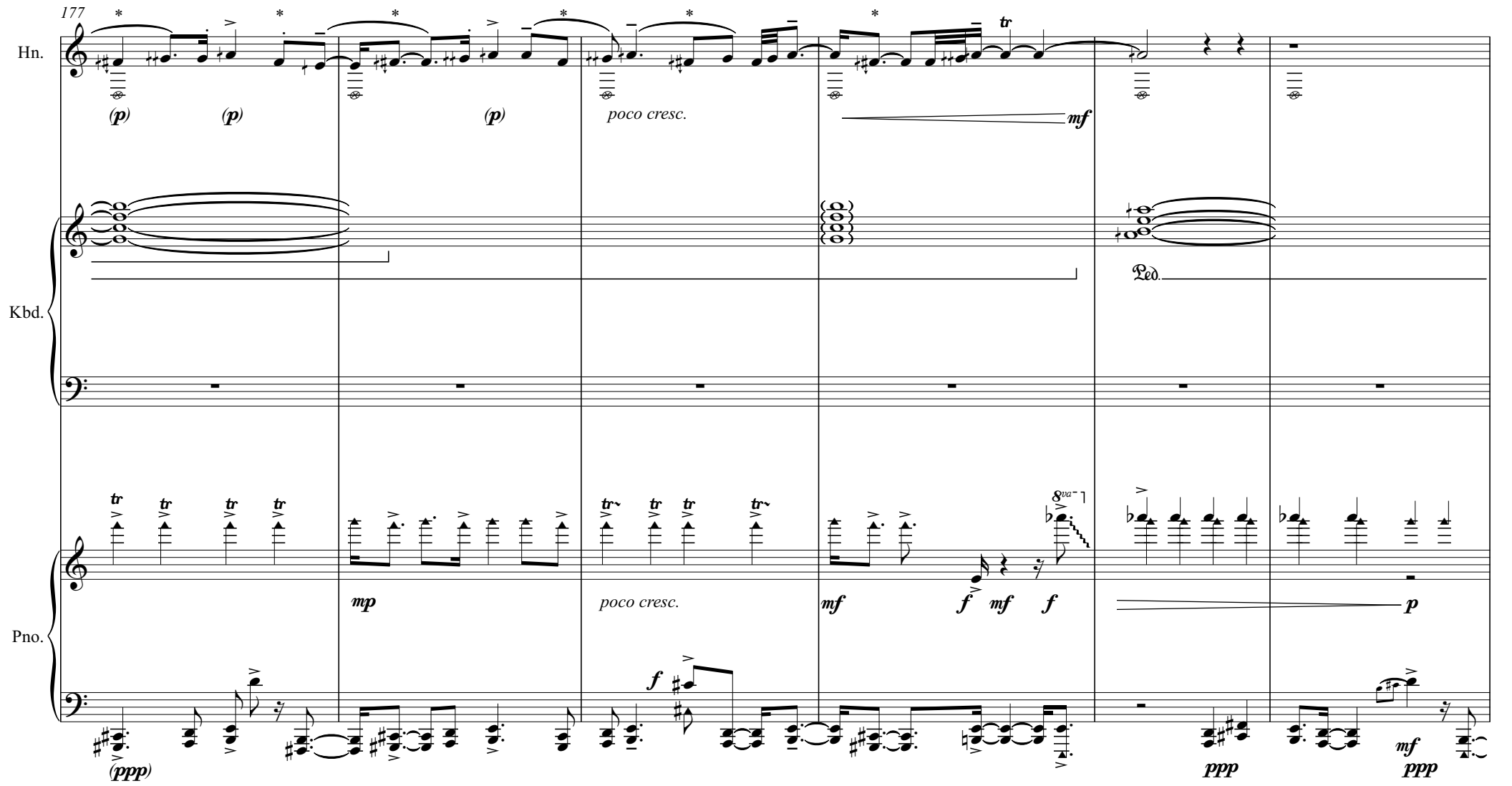

153
Hn.
pp
p
p
pp
simile
l.h.
l.h.
Ped.
Ped.
Kbd.
pp
f
pp
sim.
(l.h.)
Pno.
ppp
mp
(ppp)

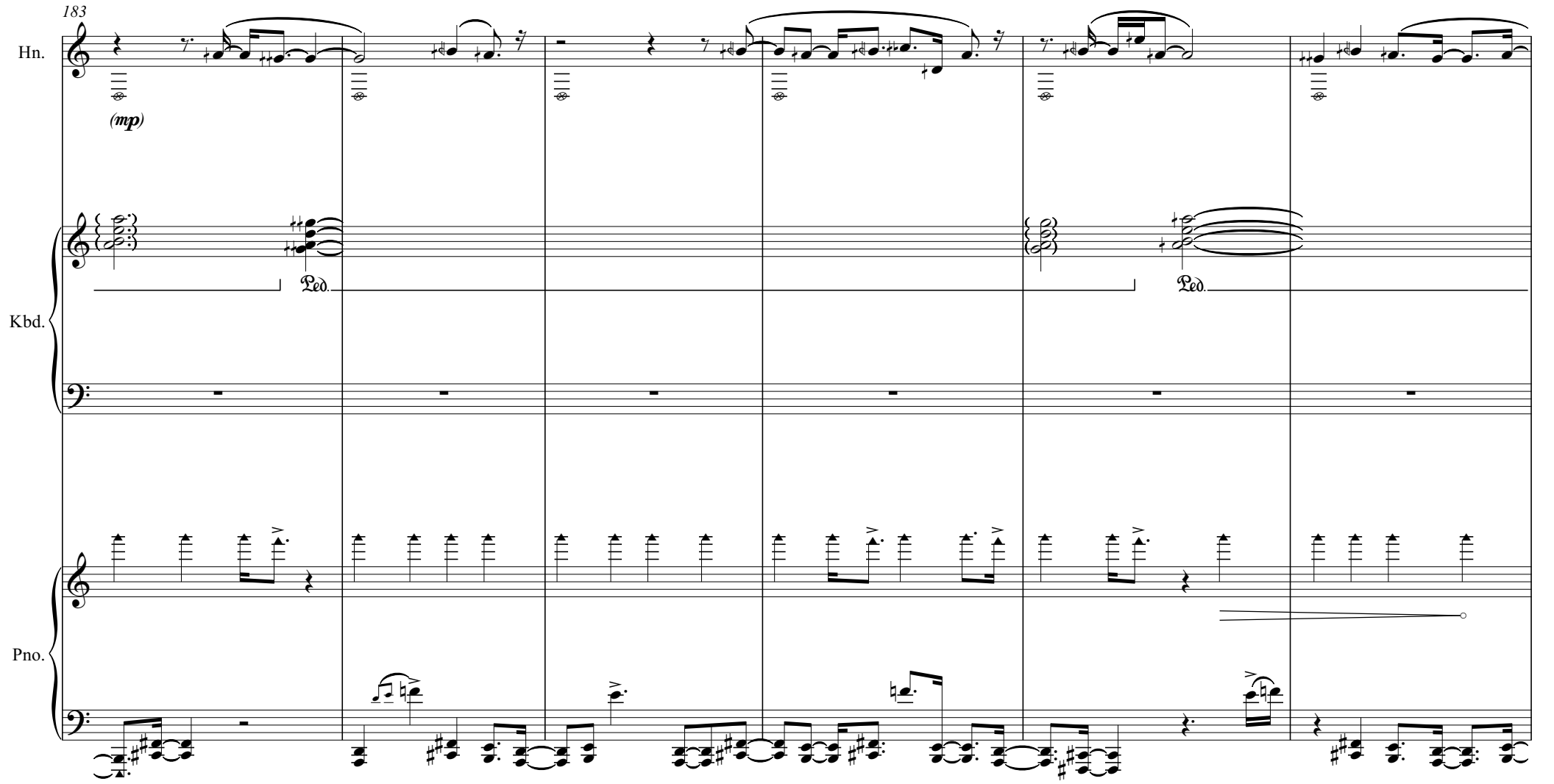

159
shape the phrases freely
Hn.
(pp)
pp
p
l.h.
Kbd.
Ped.
Pno.
(ppp)
ppp

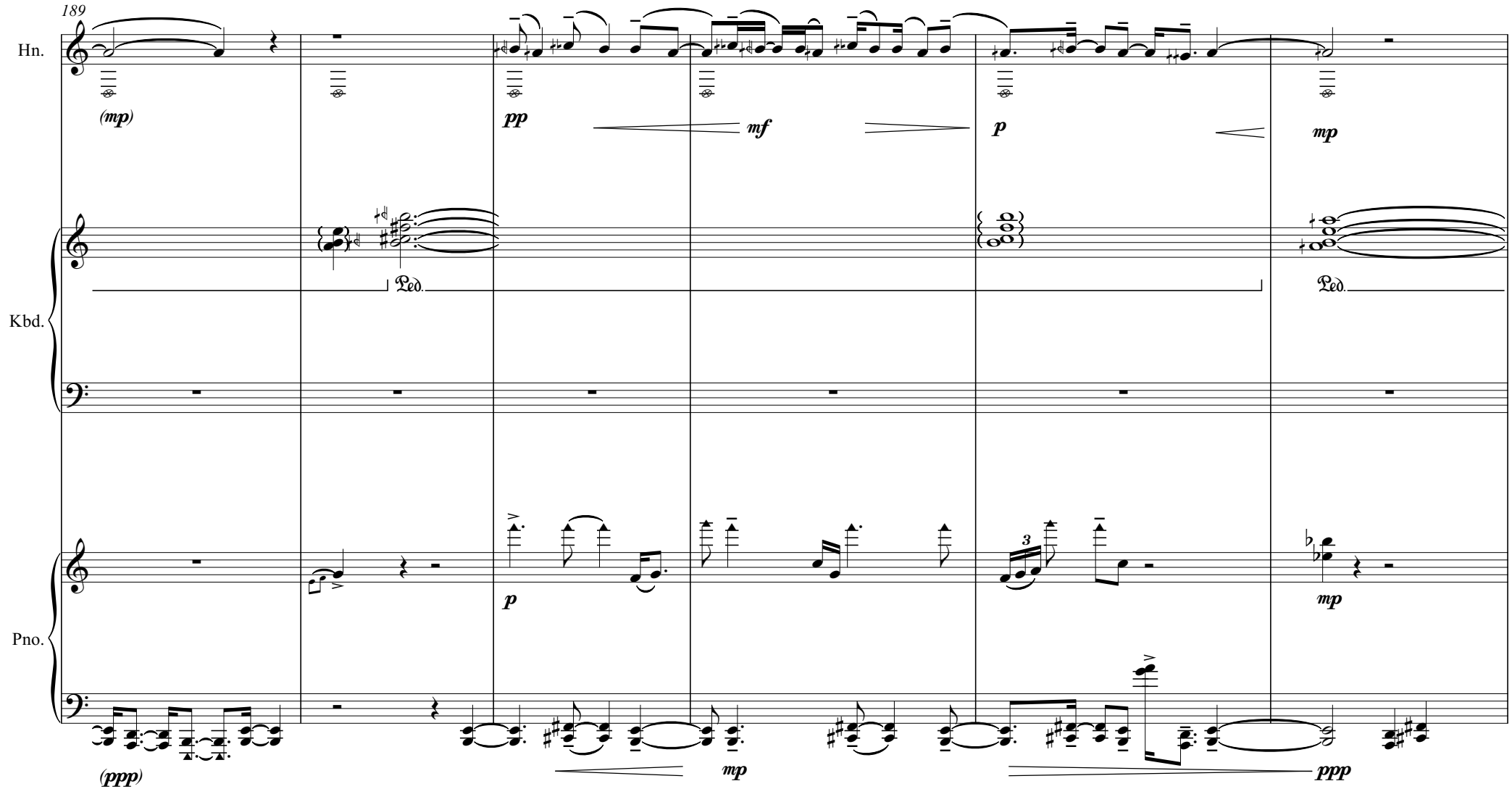

165
Hn.
pp
(pp)
Kbd.
Ped.
Pno.
mp
mp ppp
(ppp)
ppp

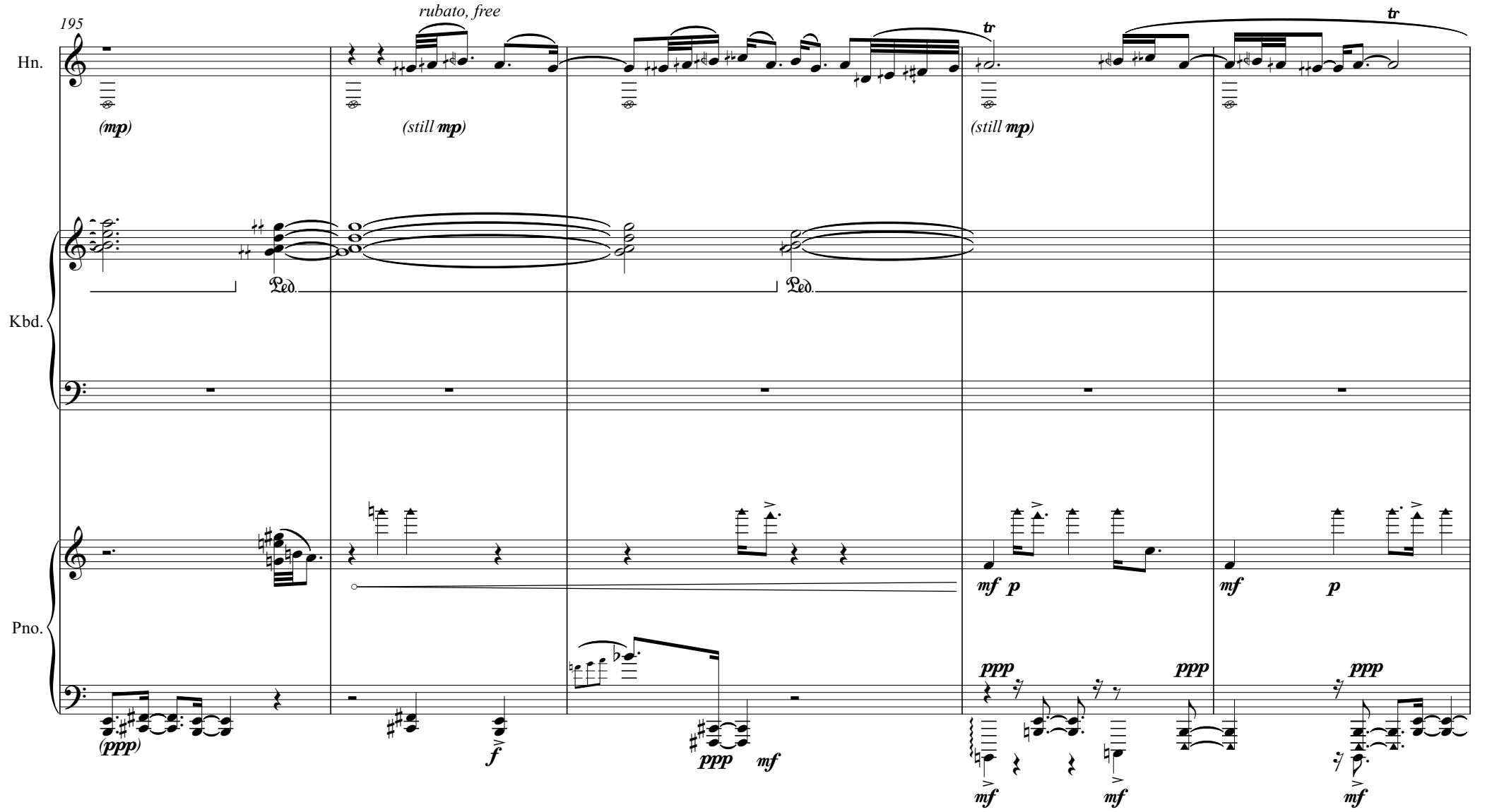

170
Hn.
Kbd.
Pno.
p
Ped.
pp
mp
pp
mp
pp
tr
mp
ppp
ppp

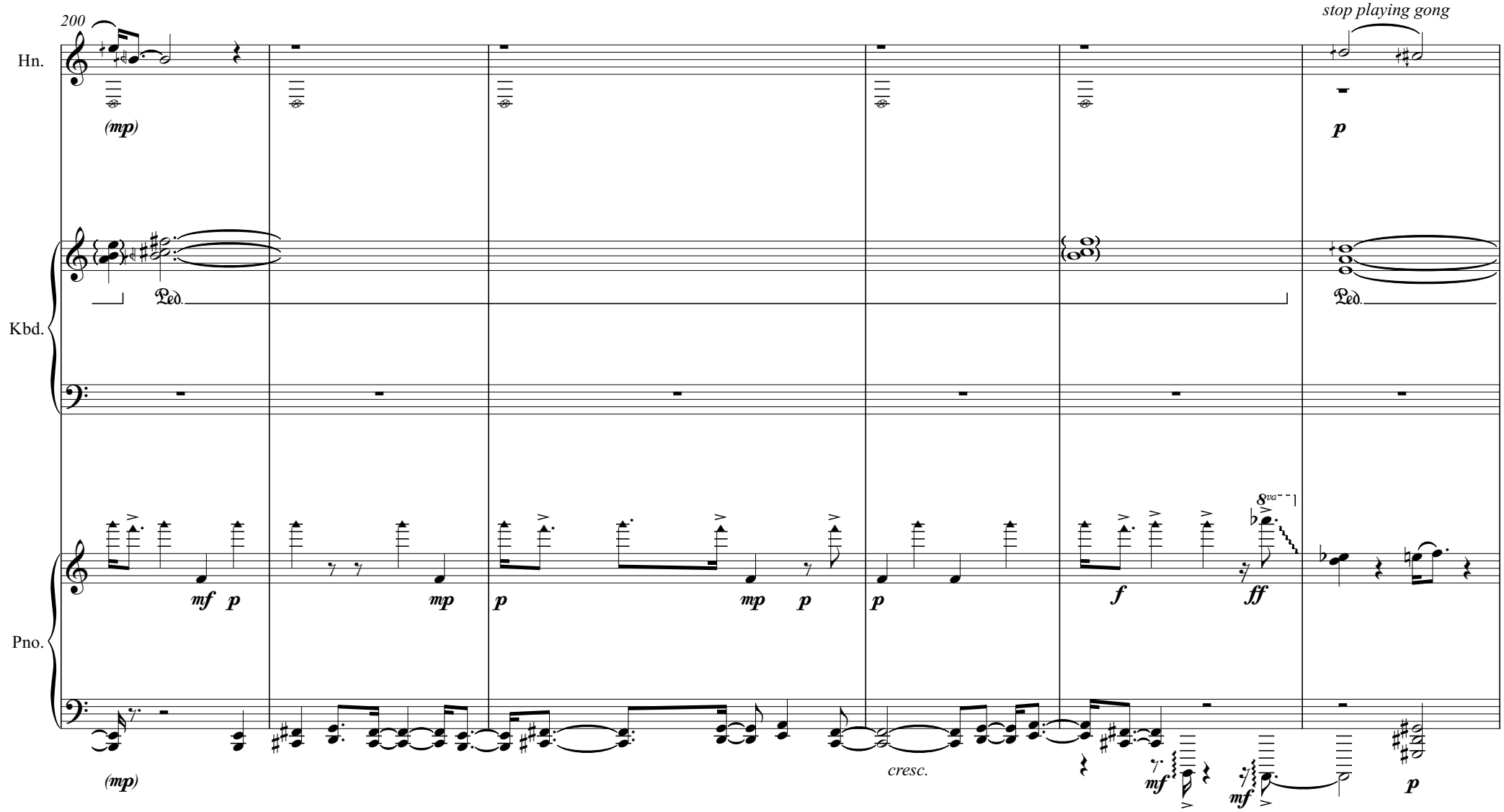

174
Hn.
Kbd.
Pno.
tr
*
Ped.
ppp
poco cresc.

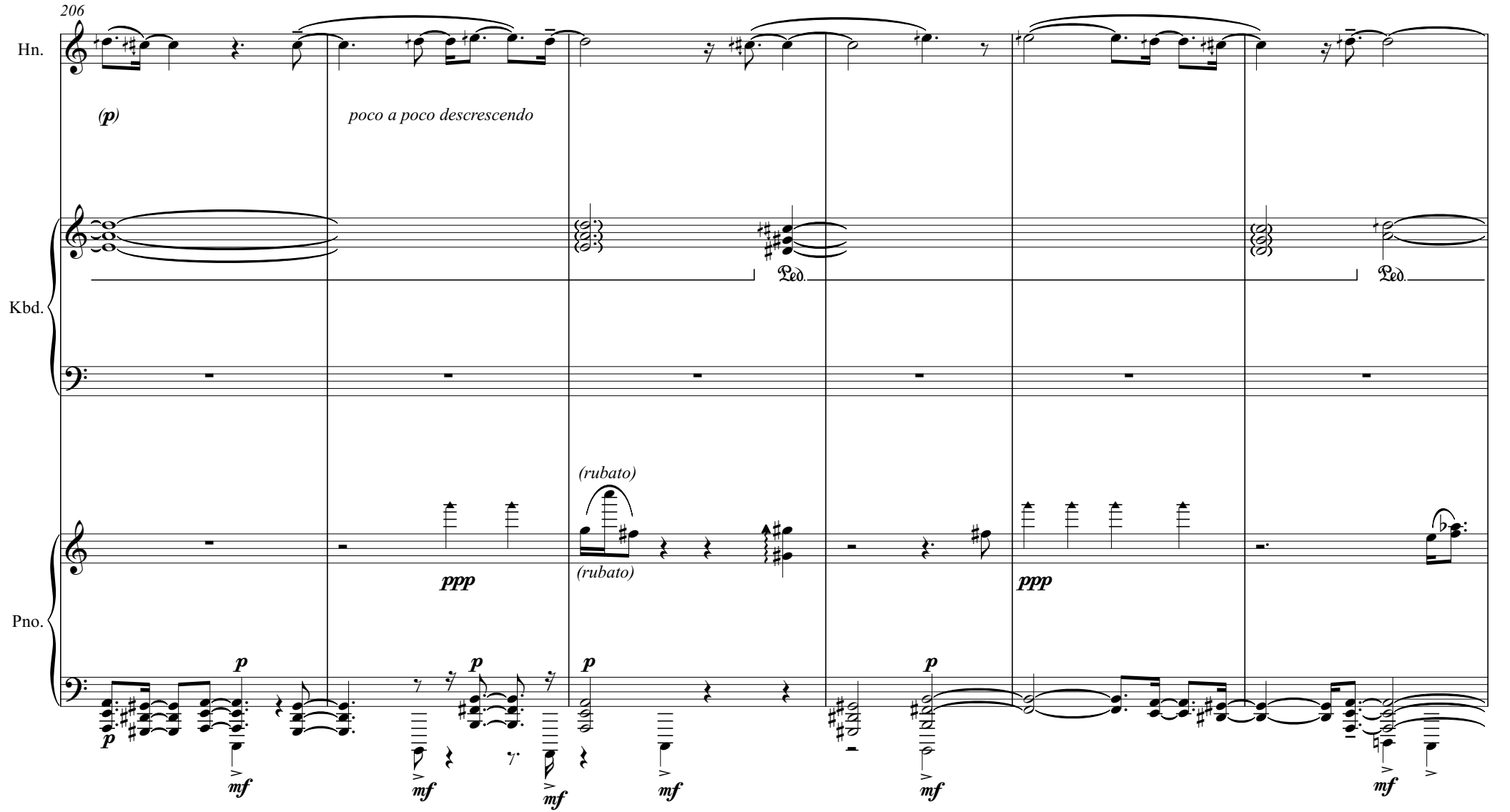

177
Hn.
(p)
(p)
(p)
poco cresc.
mf
Kbd.
Ped.
Pno.
mp
poco cresc.
mf
f
mf
f
8va
p
(ppp)
f
ppp
mf
ppp

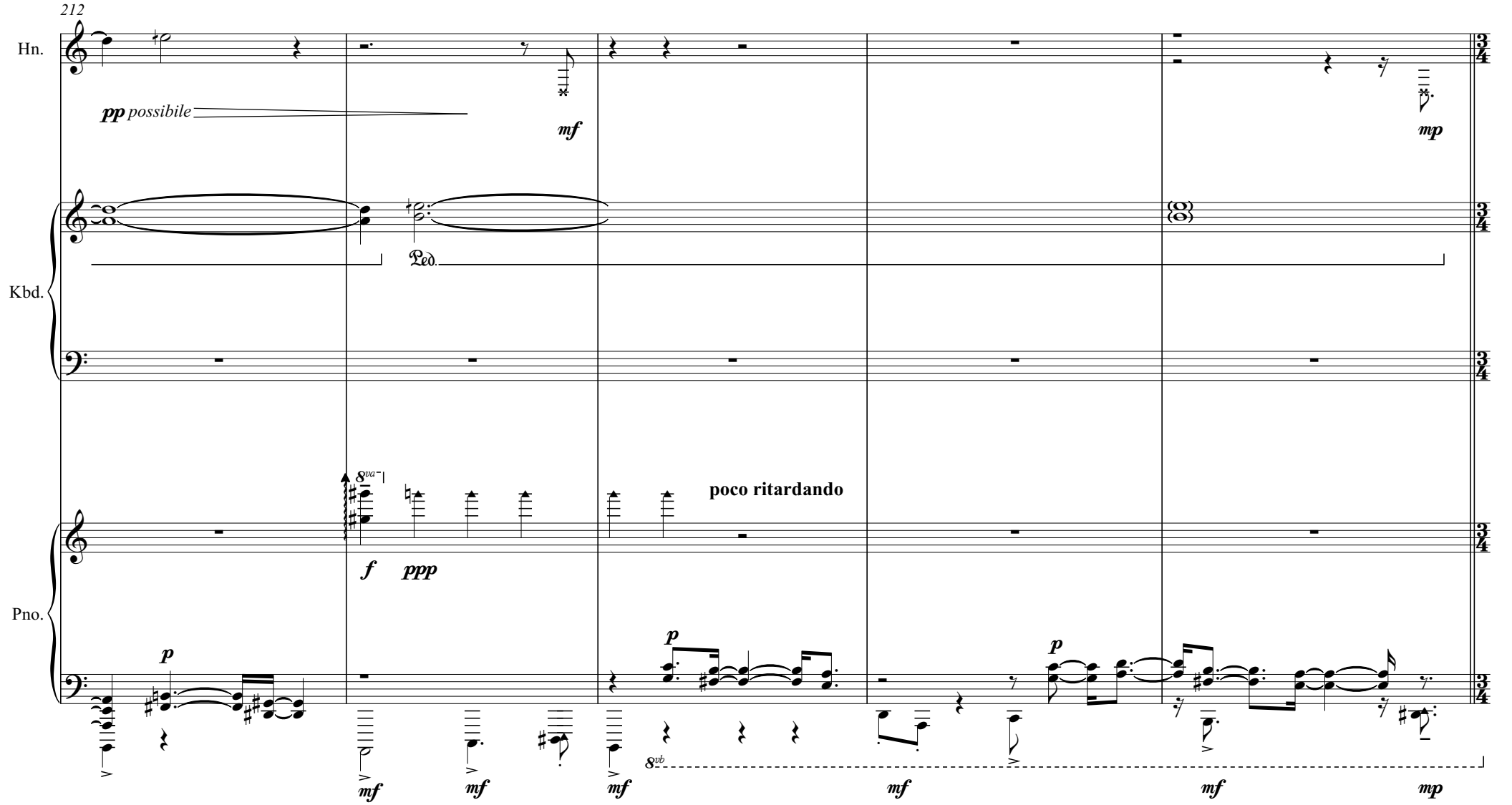

183
Hn.
(mp)
Kbd.
Ped.
Ped.
Pno.


189
Hn.
(mp)
pp
mf
p
mp
Kbd.
Ped.
Ped.
Pno.
p
3
mp
(ppp)
mp
ppp


195
rubato, free
Hn.
(mp)
(still mp)
(still mp)
tr
tr
Kbd.
Ped.
Ped.
Pno.
mf p
mf p
(ppp)
f
ppp mf
ppp
ppp
ppp
mf
mf
mf

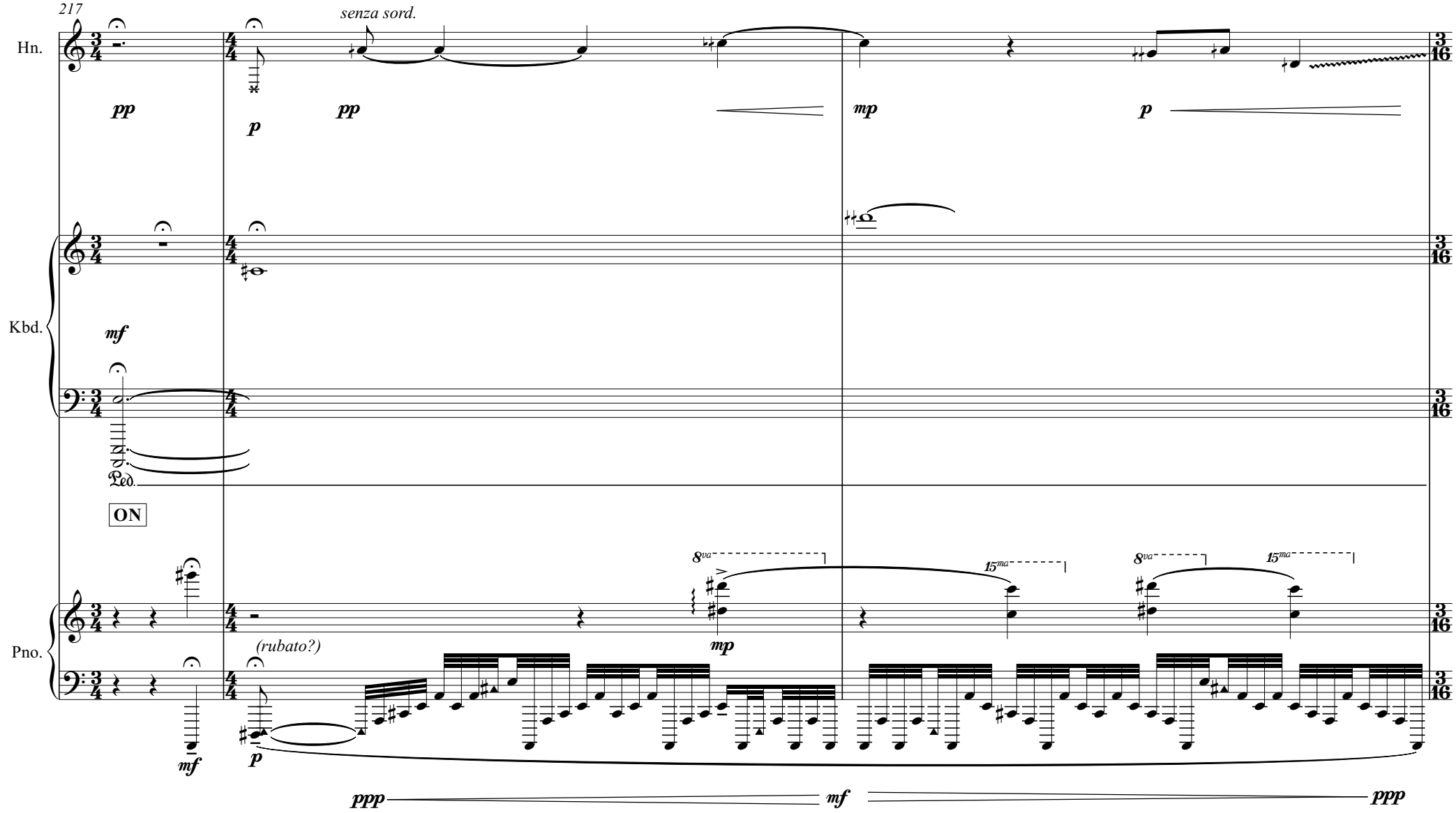

200
stop playing gong
Hn.
(mp)
p
Kbd.
Ped.
Ped.
Pno.
8va
mf p
mp
p
mp p
p
f
ff
(mp)
cresc.
mf
mf
p

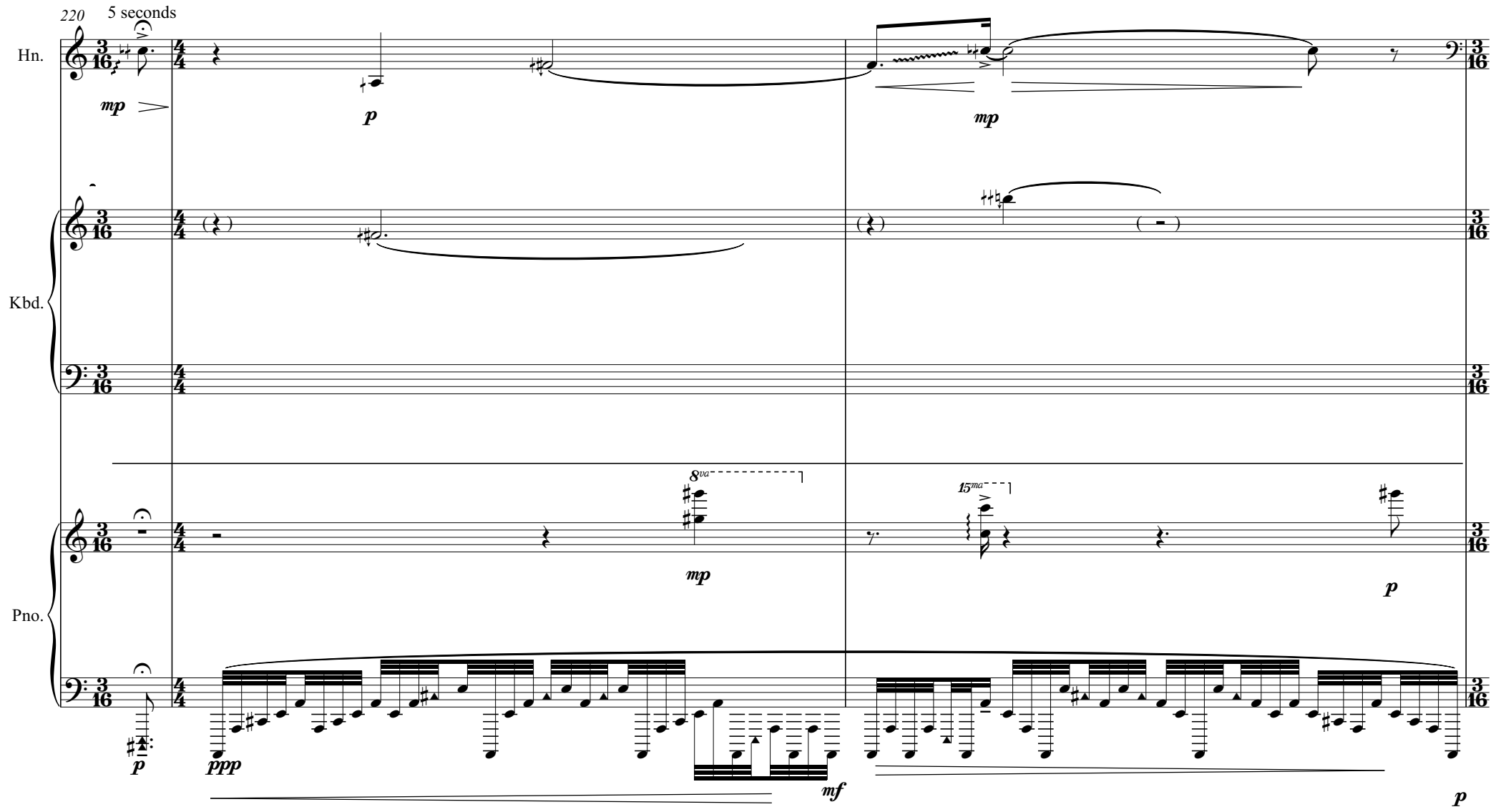

206
Hn.
(p)
poco a poco descrescendo
Kbd.
Ped.
Ped.
(rubato)
(rubato)
Pno.
ppp
ppp
p
mf

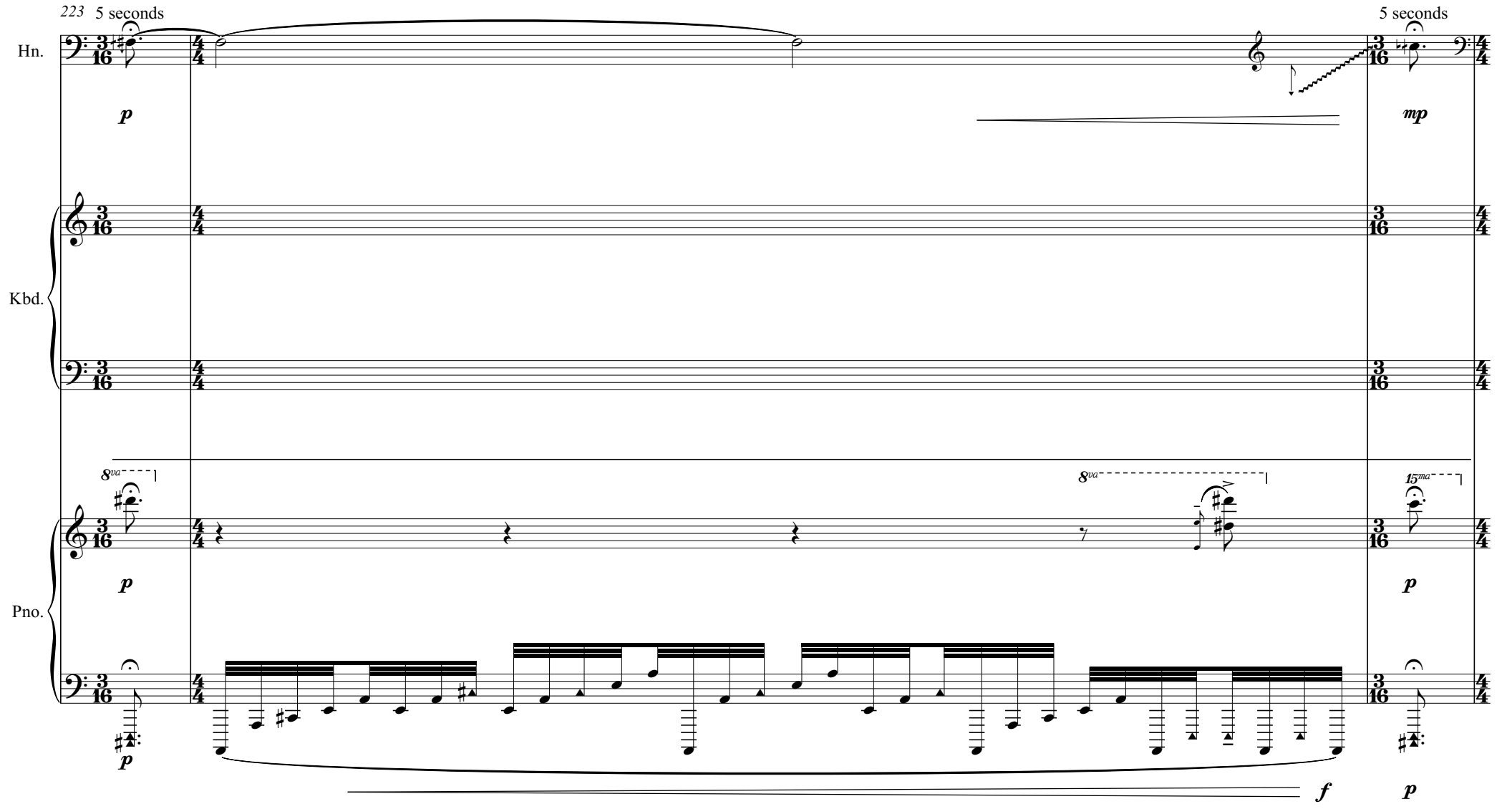

212
Hn.
pp possibile
mf
mp
Kbd.
Ped.
Pno.
8va
f
ppp
poco ritardando
p
p
mf
mf
mf
8vb
mf
mf
mp

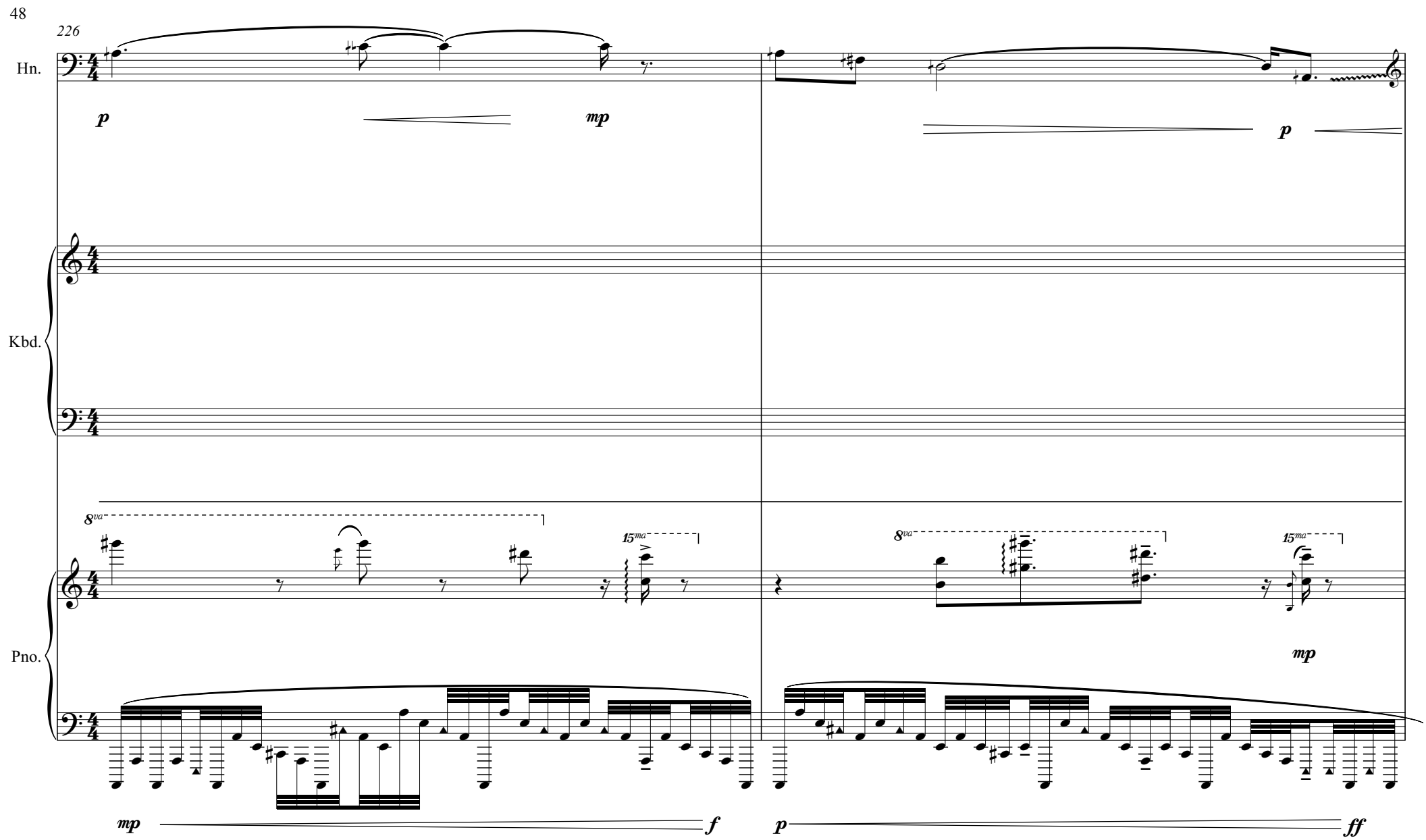
## VII. L'aube

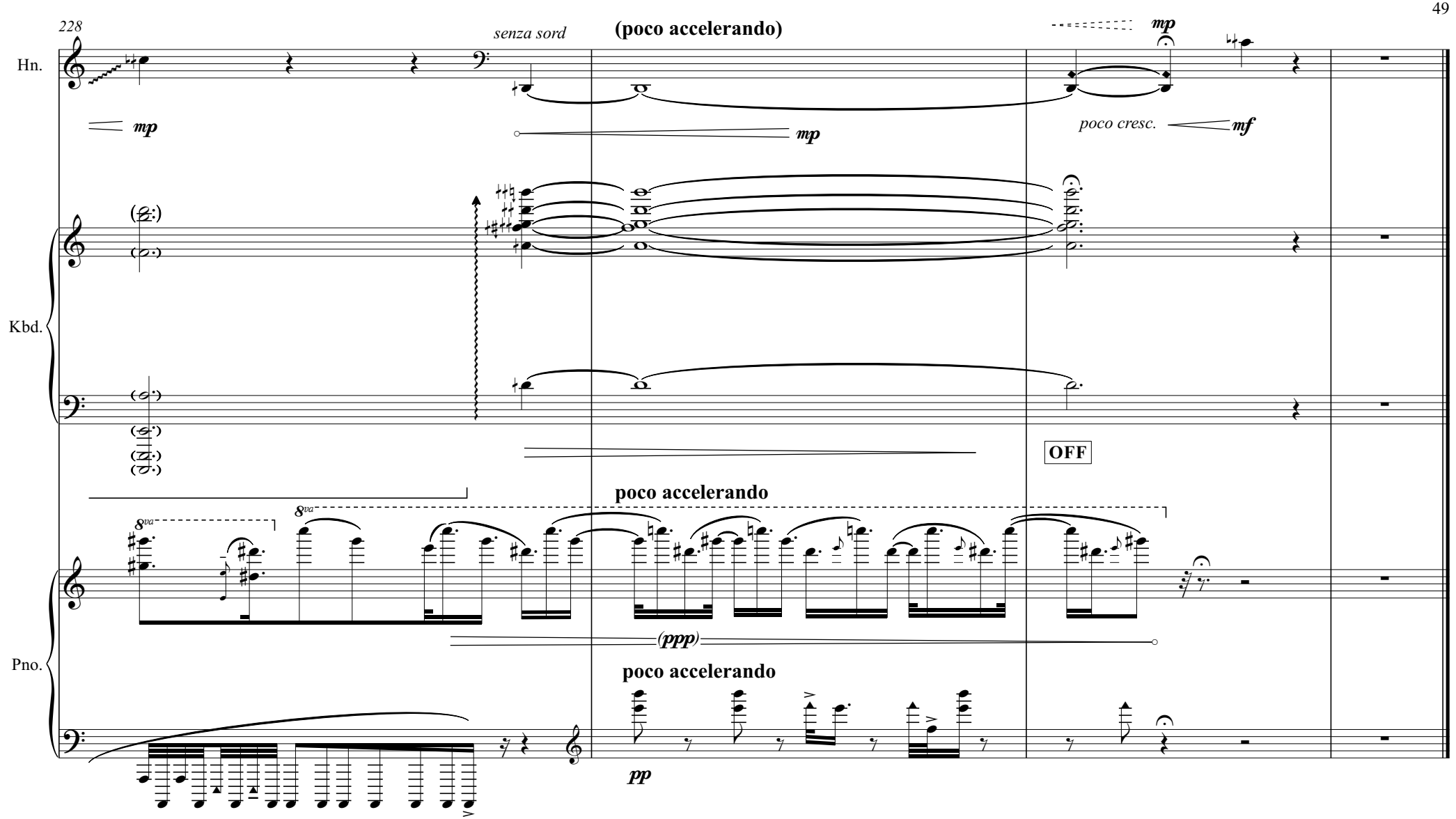
**Lento, poco rubato, ♩=55**




220
5 seconds
Hn.
Kbd.
Pno.
mp
p
mp
8va
mp
15ma
p
p
ppp
mf
p


223
5 seconds
5 seconds
Hn.
Kbd.
Pno.
p
mp
8va
15ma
f


226
Hn.
p
mp
p
Kbd.
Pno.
8va
15ma
8va
15ma
mp
mp
f
p
ff


228
senza sord
(poco accelerando)
mp
Hn.
mp
mp
poco cresc.
mf
Kbd.
OFF
poco accelerando
8va
8va
(ppp)
Pno.
poco accelerando
pp