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The last straw for mixed ensemble and electronis.

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THE LAST STRAW

For Mixed Ensemble and Electronics

by

Nicholas Hall
B.A. Music, Western Kentucky University, 2011

A Thesis
Submitted to the Faculty of the
School of Music of the University of Louisville
for the Degree of

Master of Music
in Electronic Music Composition

School of Music
University of Louisville
Louisville, KY

May 2022

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For Mixed Ensemble and Electronics

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B.A. Music, Western Kentucky University, 2011

A Thesis approved on

May 5, 2022

by the following Thesis Committee

Thesis Director – Krzysztof Wolek

John Ritz

Rebecca Jemian

ACKNOWLEDGEMENTS

I would like to thank everyone who put up with me while I was in process of completing this thesis. I would especially like to think Dr. Wolek for all the various techniques I've learned and for patiently working with me as I drifted in and out fulfilling this process.

ABSTRACT

THE LAST STRAW

NICHOLAS HALL

MAY 5, 2022

The Last Straw was composed for mixed ensemble and electronics. The main idea behind this piece is twofold: a) the treatment of the pitches, articulations, and dynamics shared between instruments and how they propagate out of phase closely resembles what I would have programed on various standalone synthesizer, and b) the processing itself is treated how I would manipulate various parameters on said synthesizers to achieve different sonic modulations. All instruments are amplified through a 4.1 sound system (4 loudspeakers and subwoofer) which is setup in a circle (see the **performance layout** page viii). Through processing via Max/MSP, the sound sources projecting from the speakers are smoothly panned in a circle (ambisonics), as if the sound is going around and round at various point in the piece. All instruments are also processed through effects (delay, reverb, and flange) which are treated as separately panned sources. The Max/MSP patch can be viewed from the following link, https://louisville.box.com/s/4q8o4vqauqvzpkmlm34wxkwt9872z4m5. The file containing the complete contents for the patch is labeled "Master_Patch v.6maxpat".

The piece consists of three sections (A'- B' - C') which seamlessly elide together. The pitch framework underlying the A' and B' sections derives from the E minor

pentatonic scale with a minor second in place of the third (F instead of G – E, F, A, B, D). The A' section centers around the last 4 notes of that scale, not to resolve down to E until the B' section. This resolve is even more reinforced by the crystal bowls, which do not strike or sustain an E until the latter half of the B' section. As well as an almost agonizingly slow tonal shift occurring from A' to B', the desolate and droning sound world of the A' section (*I. Seemingly without meter*) is disrupted by rhythmic density at the beginning of the B' section (*II. Slow but chaotic*). There is intense interplay between segments of the B' section, as if to both harmonically and rhythmically eclipse and converge back into phase (*III. Coming back into phase* → *IV. Slowly going out of phase*) and depart into turbulent chaos (*V. Terminally out of phase*). The B' section ends with all pitch material shifted upwards in some cases many octaves, and rhythmically in less murky waters (*VI. Somewhat resolved*). The last segment of the B' section elides with C', and the tonal kaleidoscope is turned to G minor territory. Though it is a subtle transition, it is a jarring refreshment that propels the relentless tonal and rhythmic turbulence with sharply bowed open strings, dynamically enveloping woodwinds, and challenging hemiolas (*VII. Forcing change*). The rhythms in the post-minimalist C' section are representative of a well-engineered machine with the internal hemiolas of 3/4 over 4/4 over 7/16 and phrasal hemiolas of 3, 4, and 6 churning and hinting at a drastic forthcoming change of scenery and things coming to a head (*VIII. Mechanistic* → *IX. With certitude*). This change brings about a more rhythmically and tonally straight-forward setting which fades away softly with what I hope leaves a sense of melancholia for any listener of the piece.

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INSTRUMENTATION

Violin

Flute

Viola

Oboe

Violoncello

Bb Clarinet

Double Bass

Bassoon

Crystal Bowls (E4, F4 & 5, G4, B4, C5, Db5)

NOTES

 transition from one technique to another (i.e. from sul tasto to sul Ponticello).

increase or decrease tremolo speed.

÷ lightly grab the rim of the crystal bowl(s) with the thumb and index finger.

increase or decrease the range of pitch vibrato.

▲ execute with air.

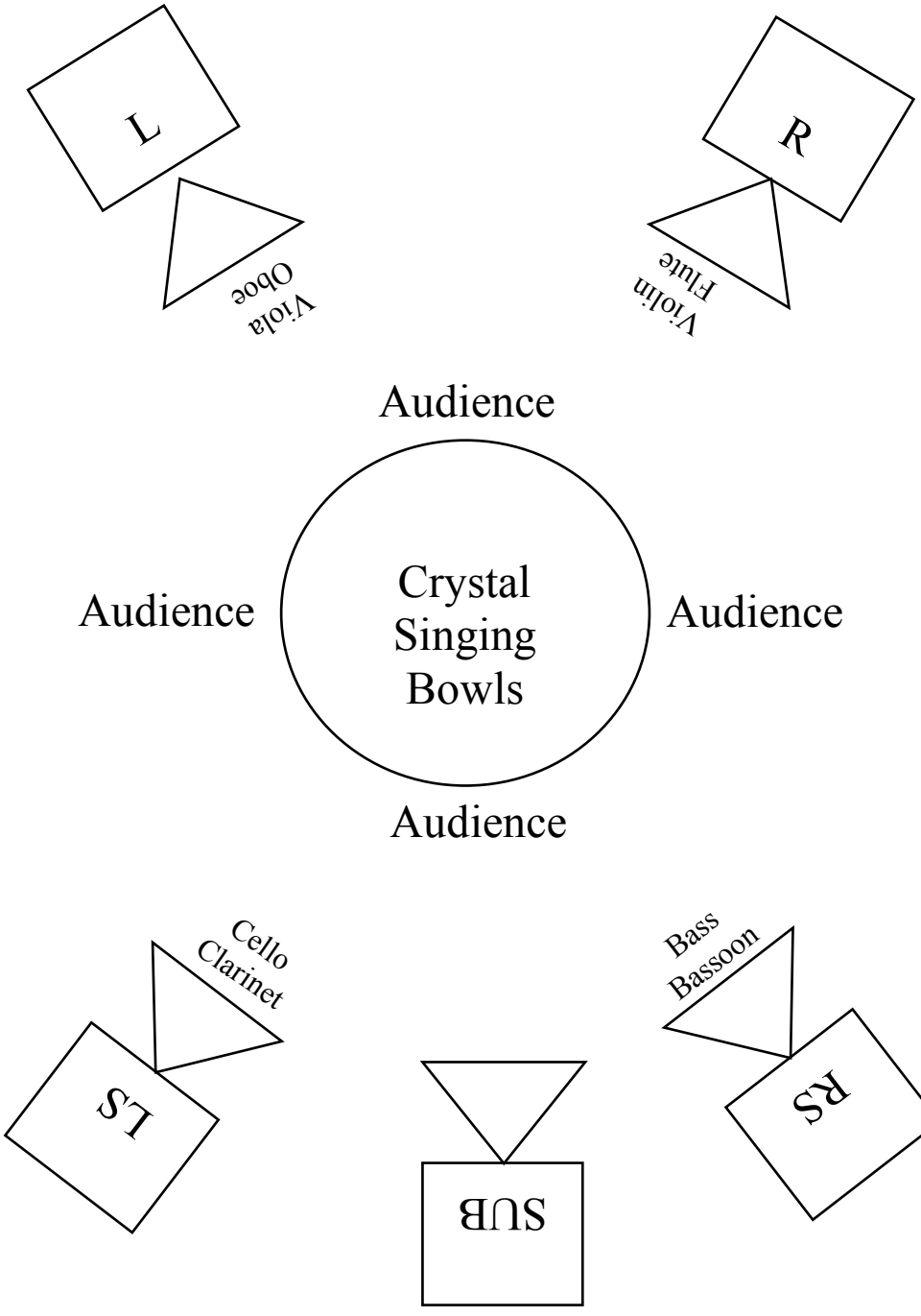
rub a suede mallet around the circumference of the bowl, achieving a sustained sound.

strike the bowl with a soft mallet.

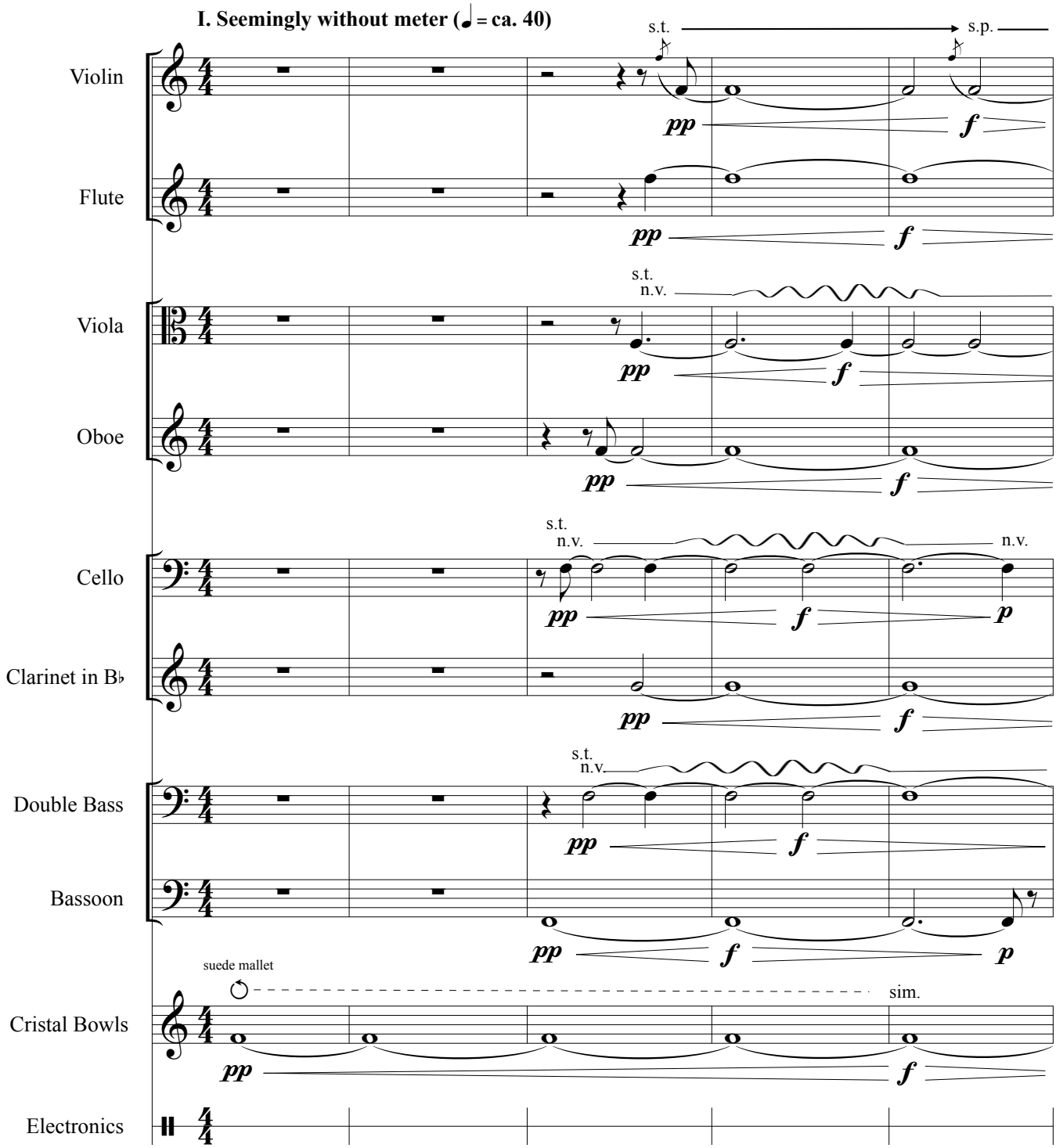
Ca. 27-28 minutes

Transposing Score.

PERFORMANCE LAYOUT



The Last Straw



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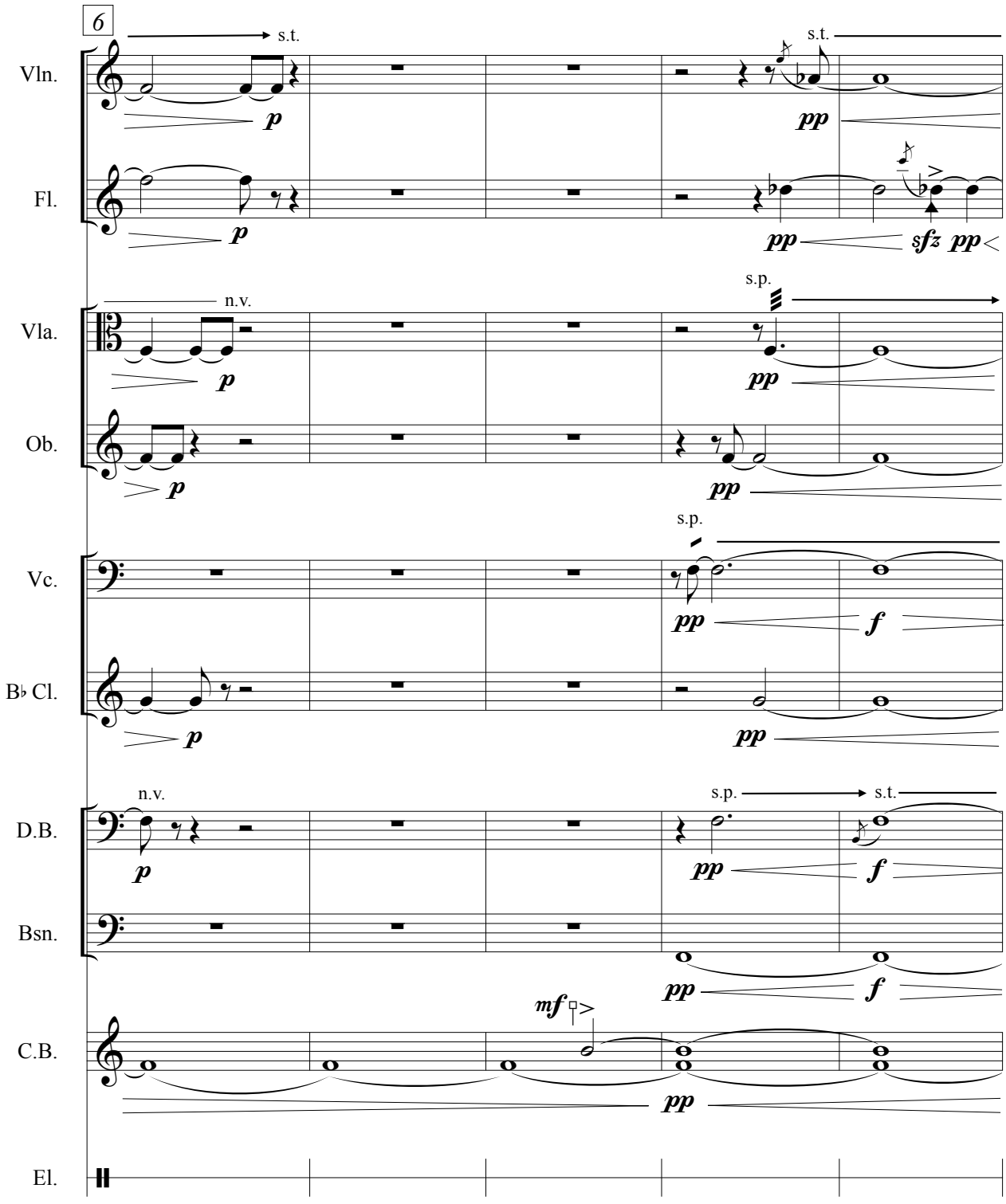
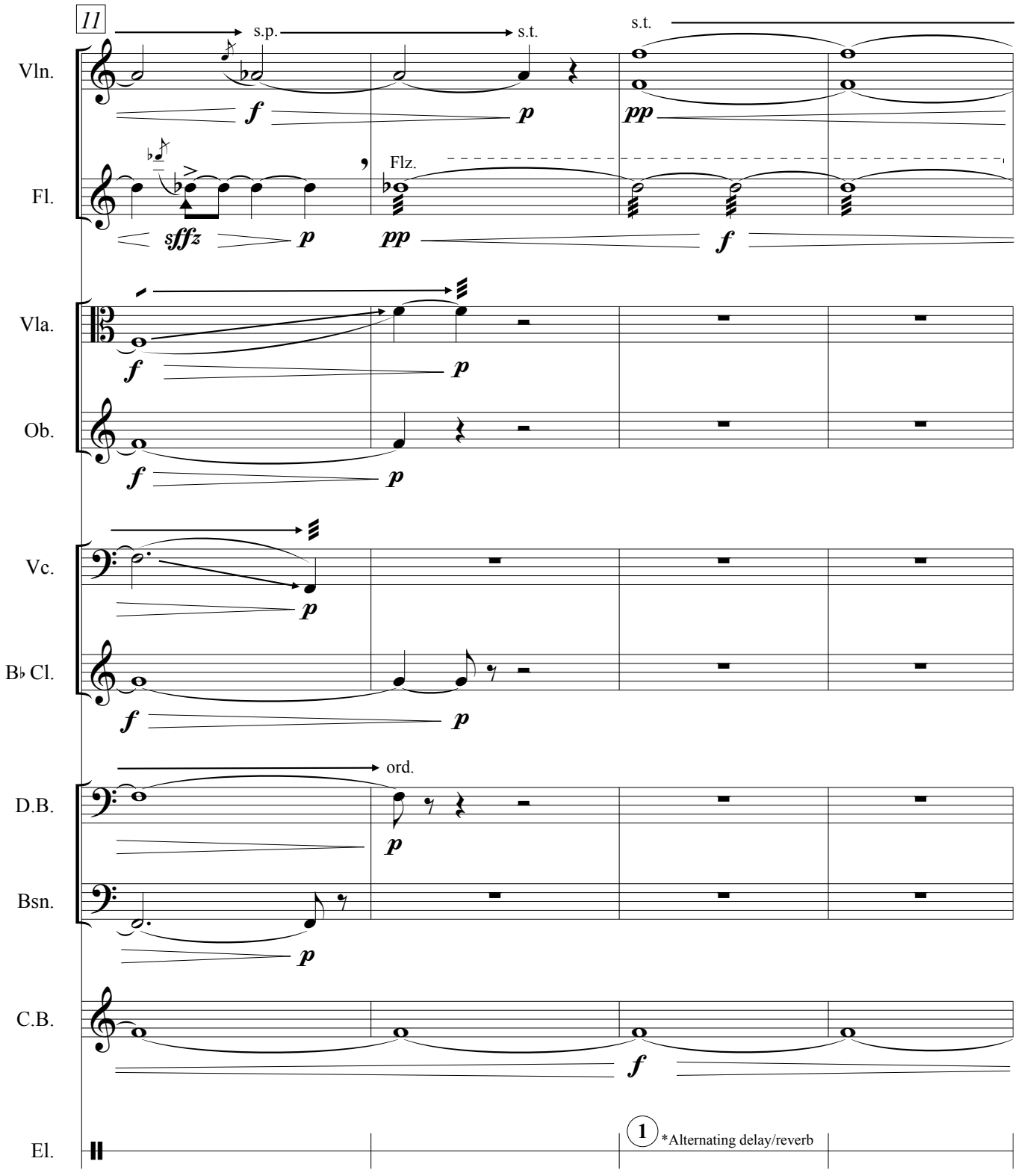

6
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
n.v.
s.p.
p
pp
sfz
f
mf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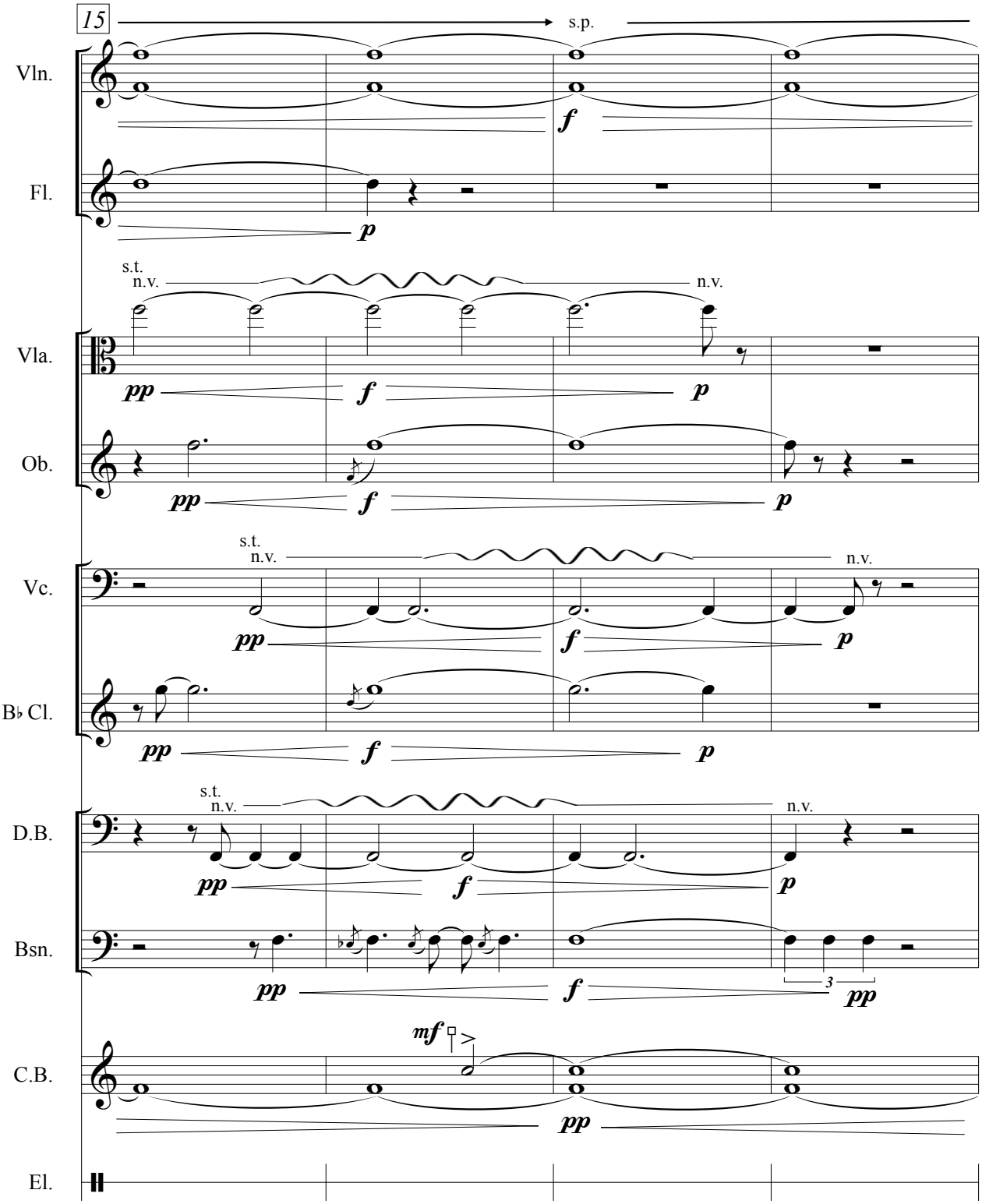
Vln.
s.p.
s.t.
s.t.
f
p
pp
Fl.
Flz.
sffz
p
pp
f
Vla.
f
p
Ob.
f
p
Vc.
p
B♭ Cl.
f
p
ord.
D.B.
p
Bsn.
p
C.B.
f
El.
1
*Alternating delay/reverb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Fl.
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Ob.
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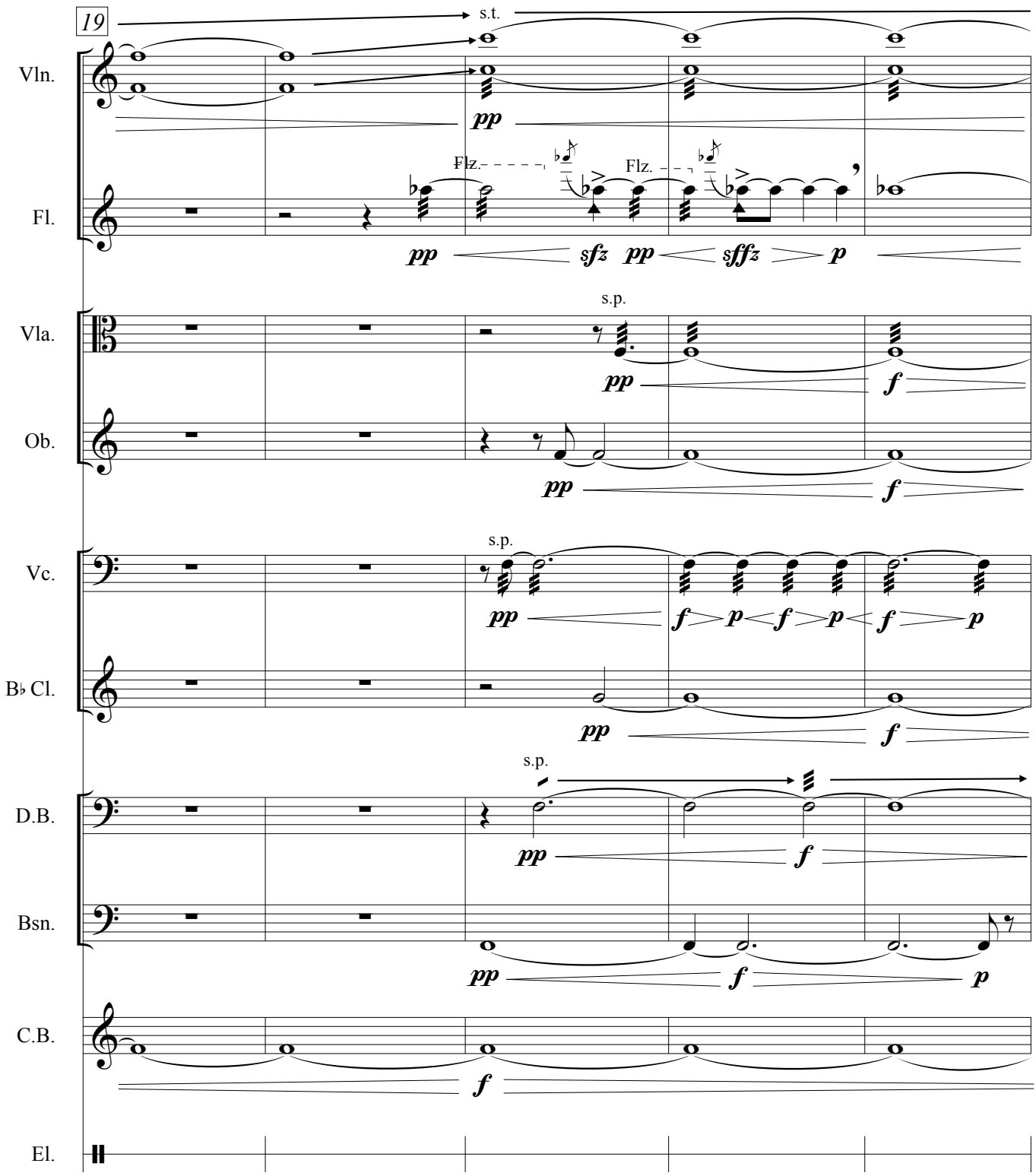
C.B.
El.
s.t.
n.v.
pp
f
p
mf
3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Vln.
pp
Flz.
Flz.
Fl.
pp
sfz
pp
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p
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f
Ob.
pp
f
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Vc.
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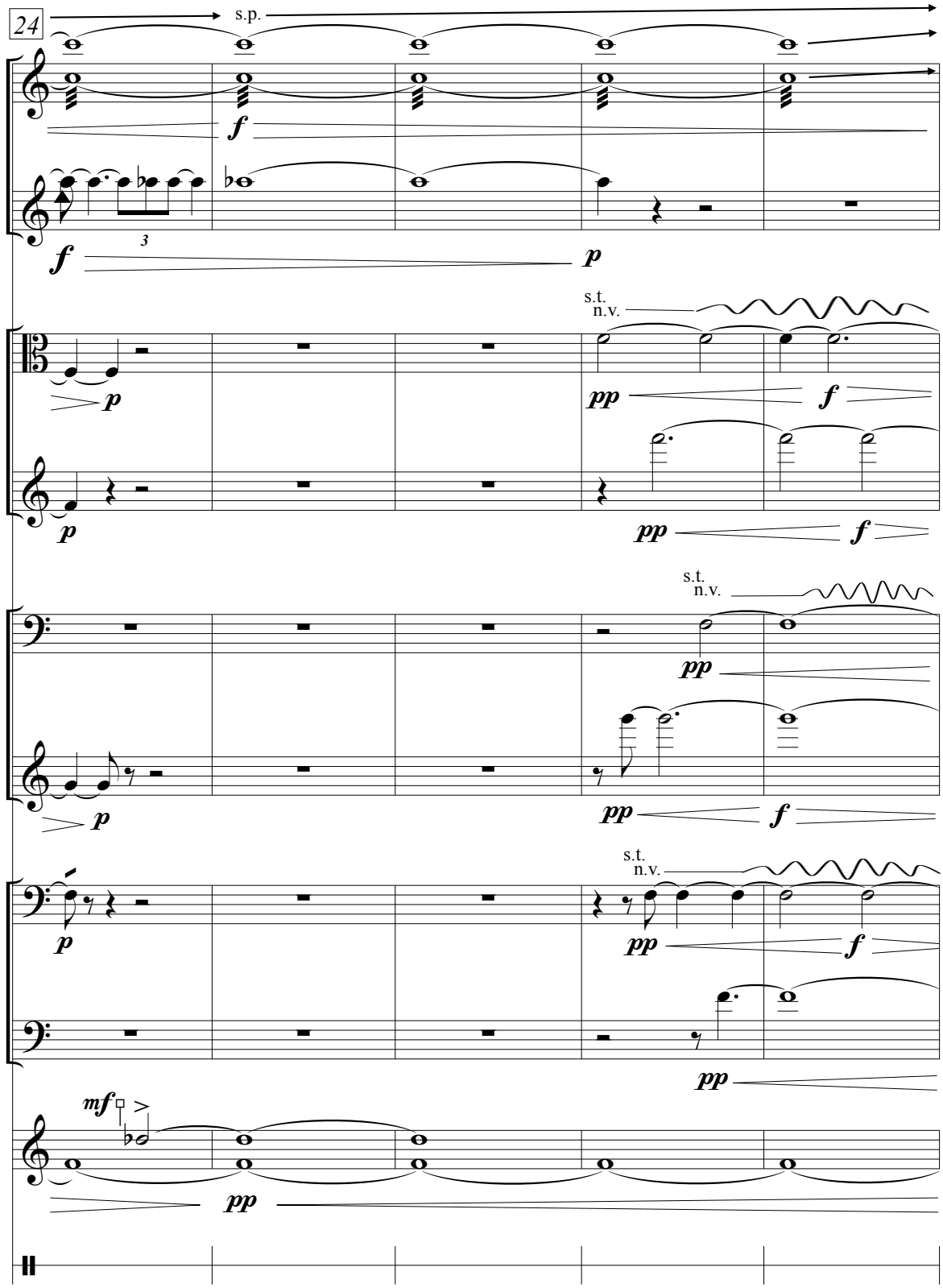
C.B.
f
El.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El.
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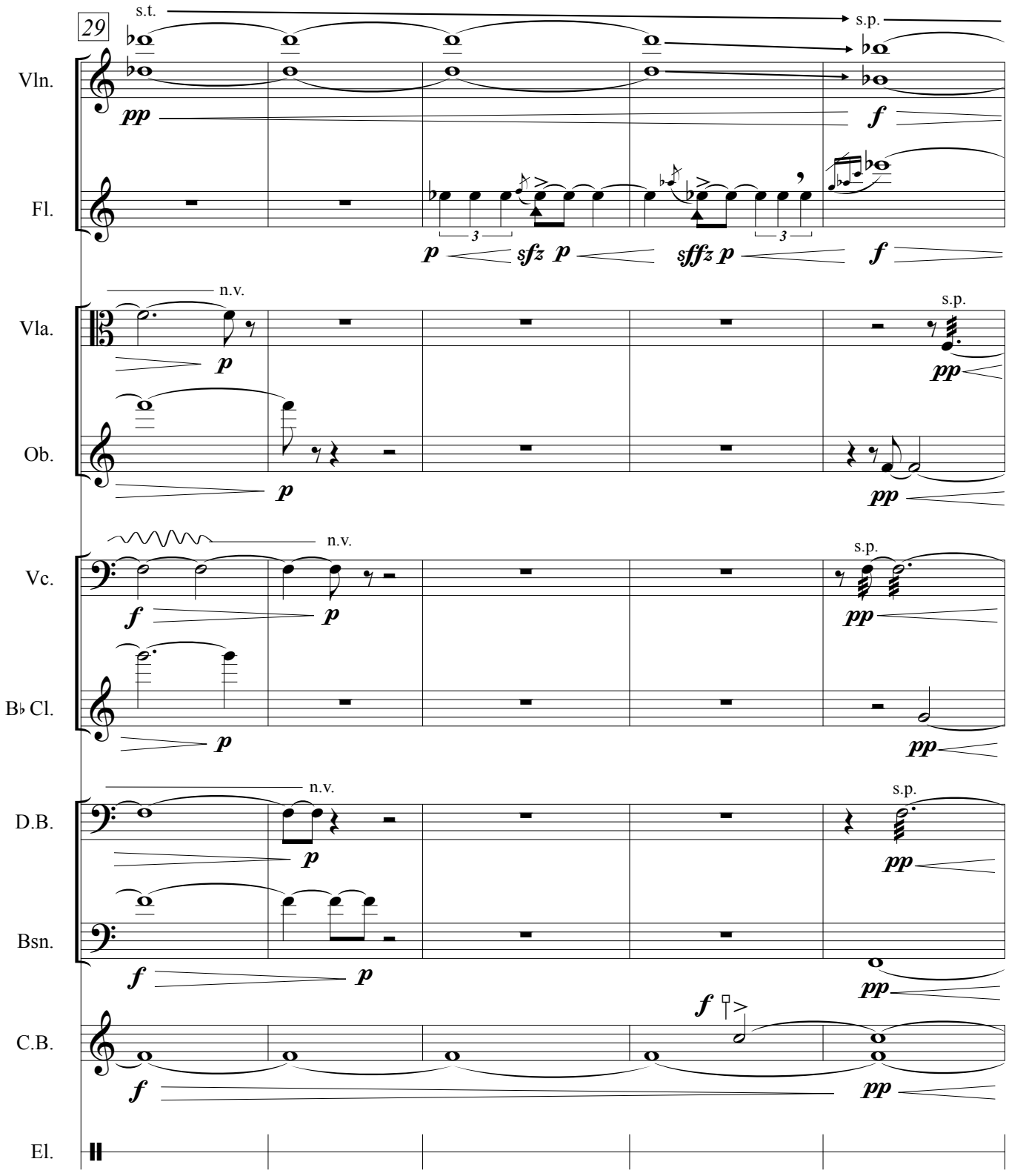
n.v.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Vln.
pp
f
Fl.
p sfz p
sffz p
f
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Vla.
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pp
Ob.
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pp
n.v.
Vc.
f
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s.p.
pp
B♭ Cl.
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pp
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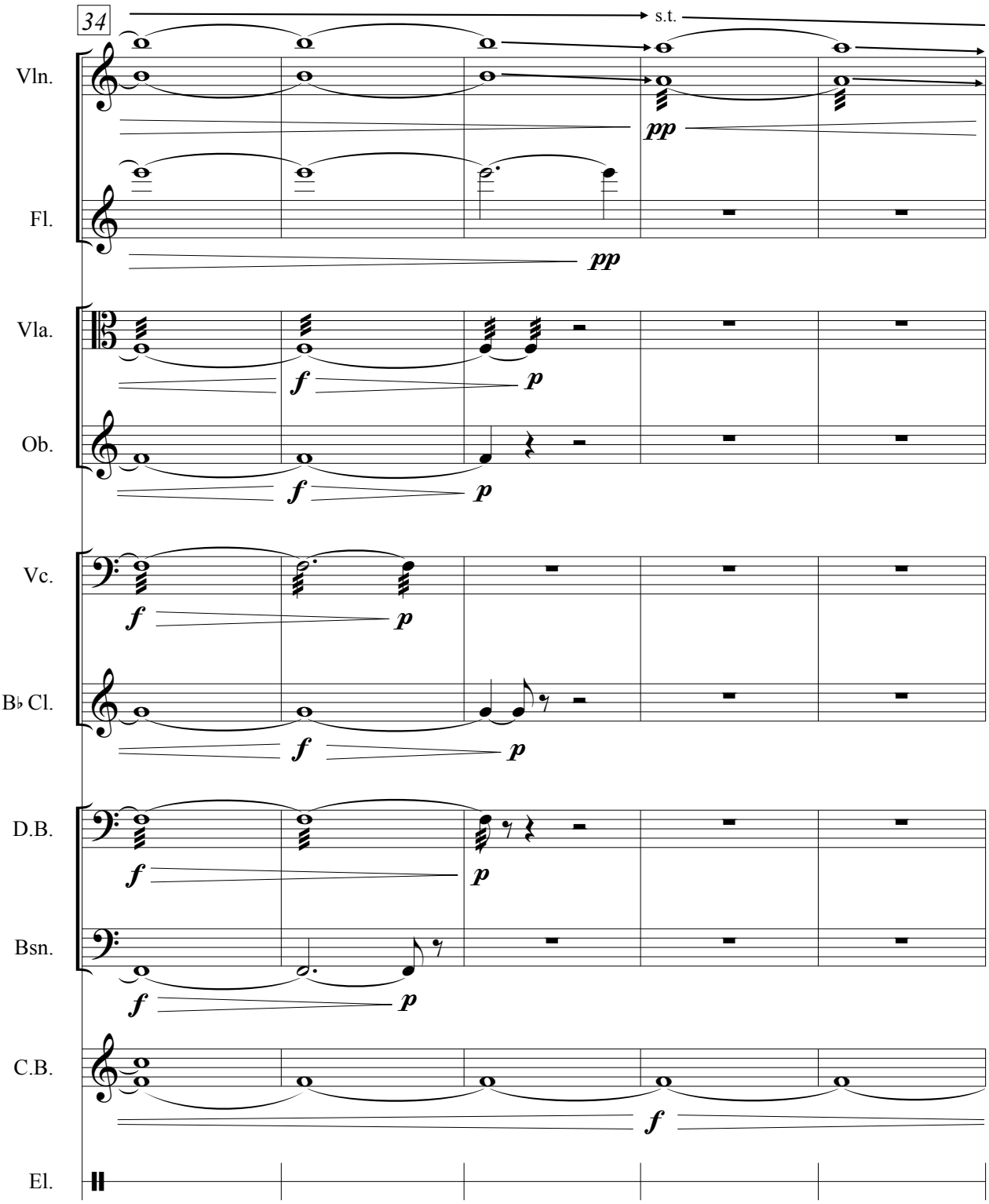
pp
C.B.
f
f
pp
El.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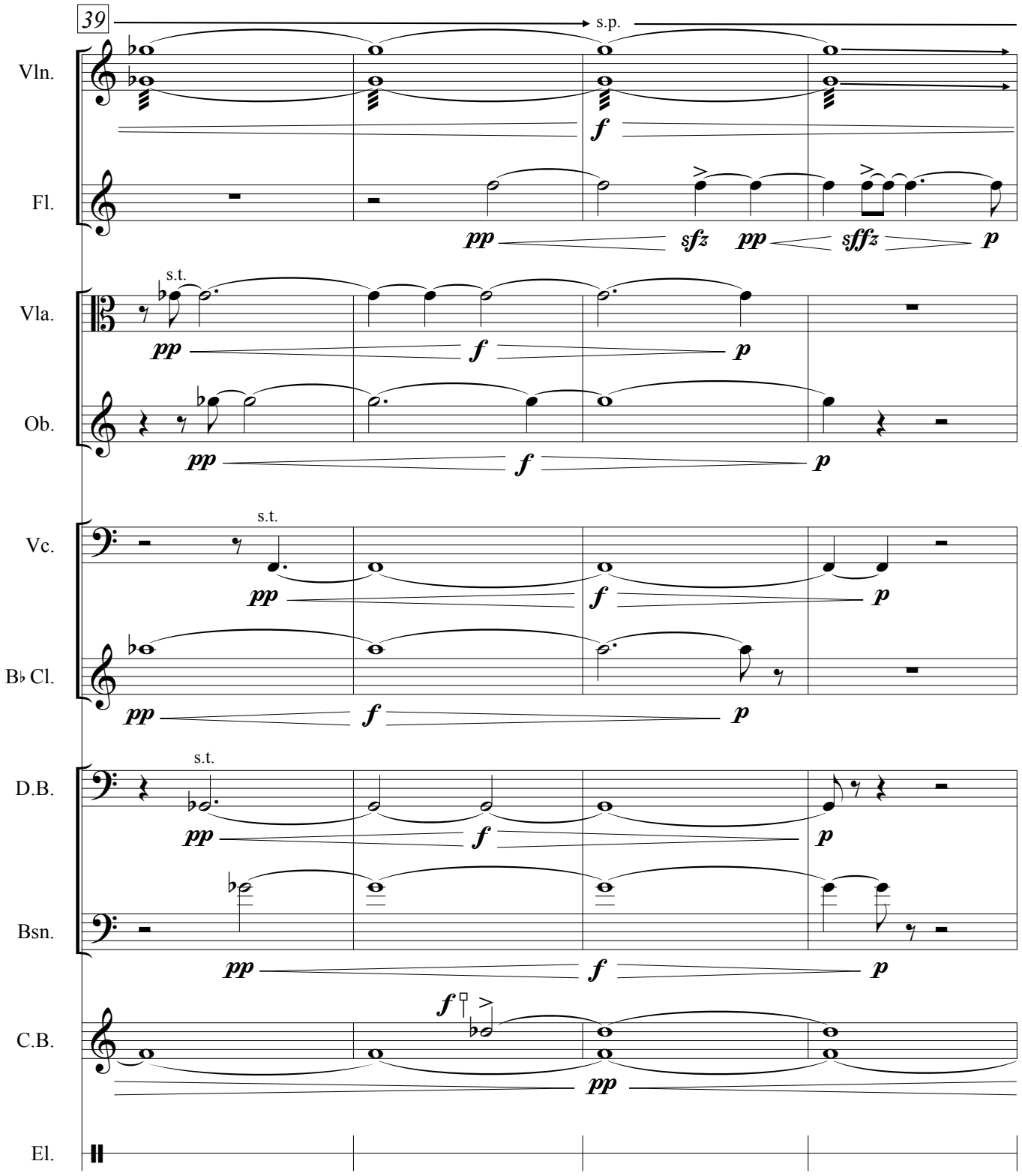
f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s.p.
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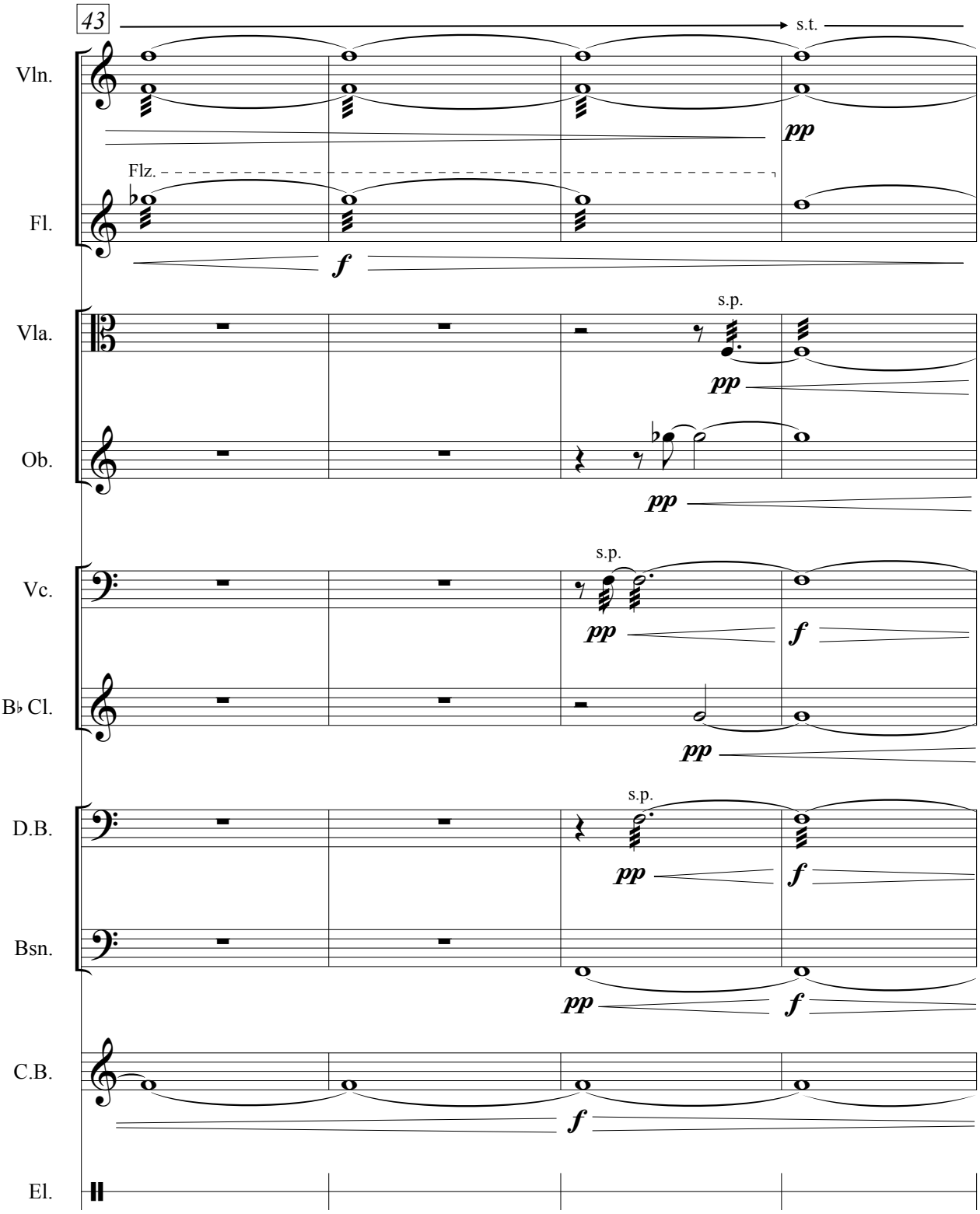
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Fl.
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s.p.
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Ob.
pp
s.p.
Vc.
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B♭ Cl.
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pp
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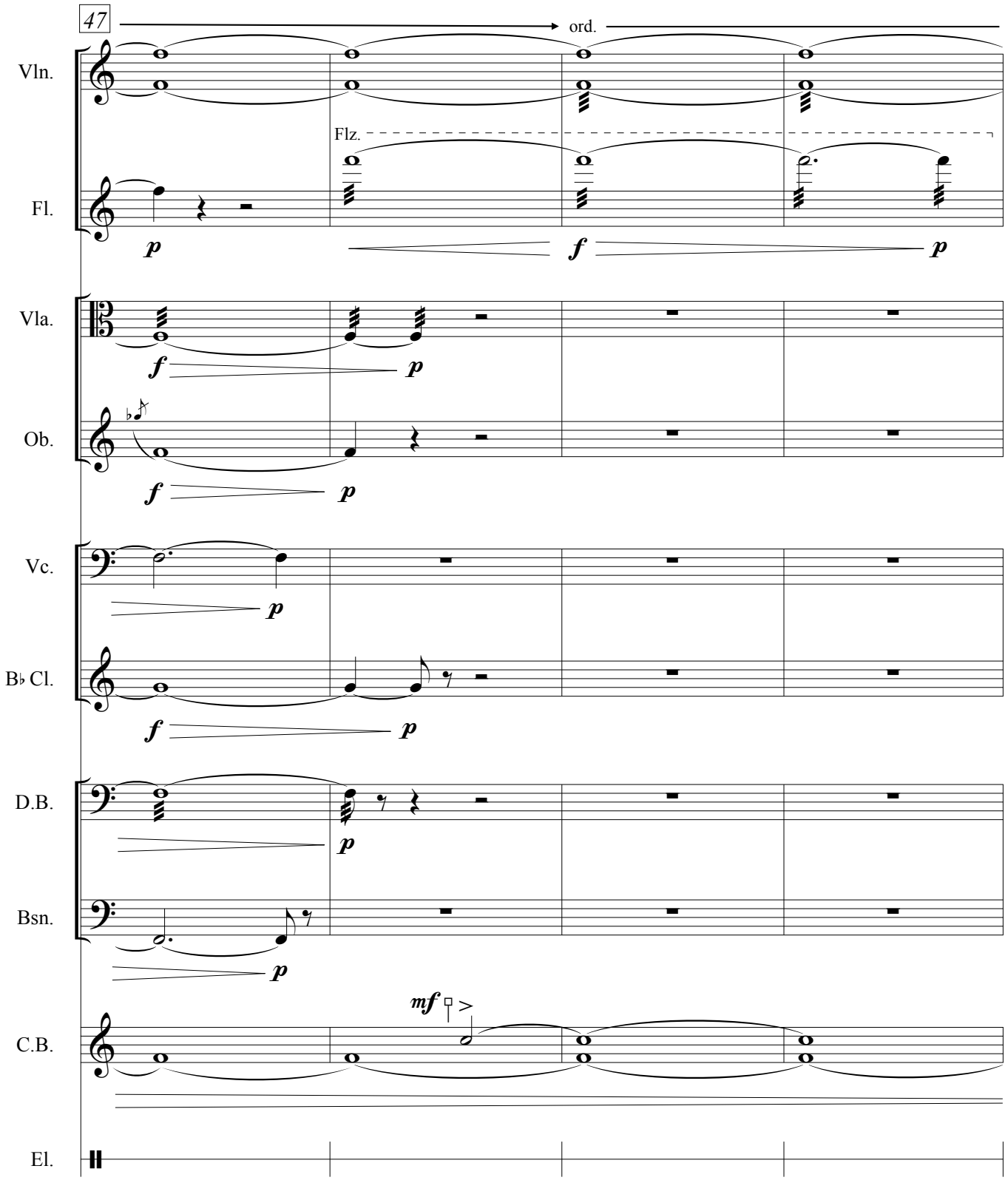
C.B.
f
El.


47
ord.
Vln.
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Fl.
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p
Ob.
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B♭ Cl.
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Bsn.
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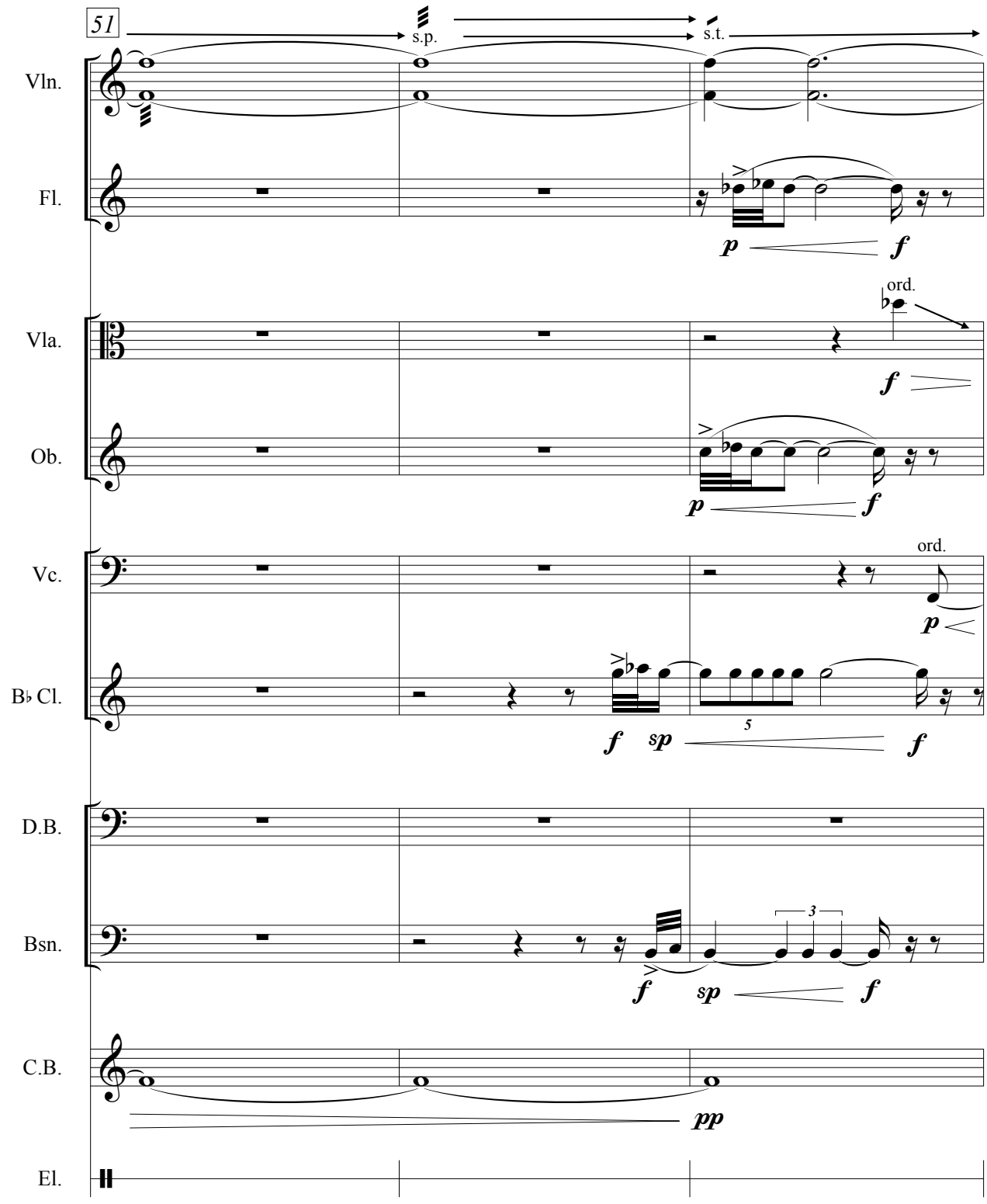
C.B.
El.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f
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Ob.
p
f
Vc.
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p
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f
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D.B.
Bsn.
3
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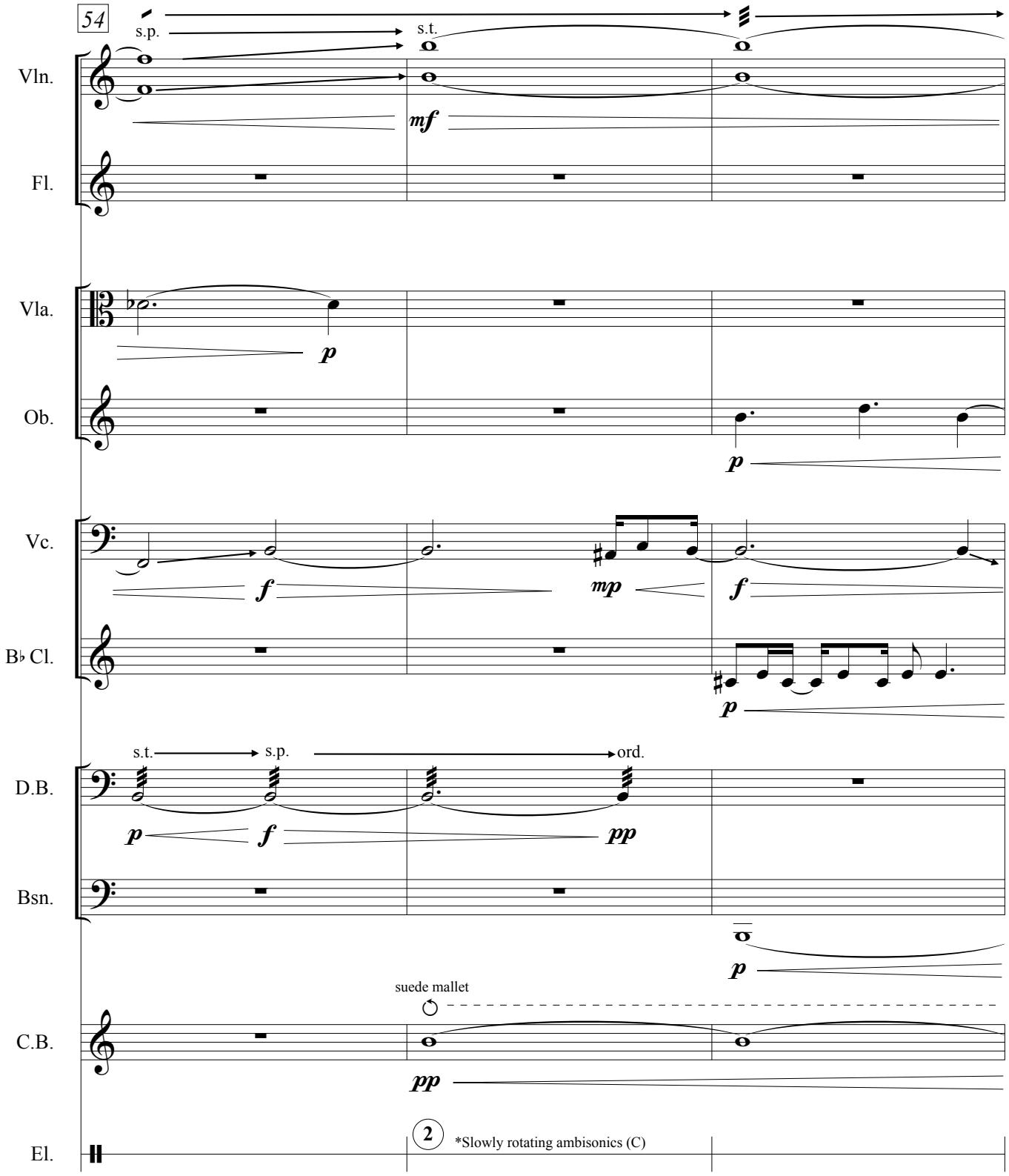
sp
f
C.B.
pp
El.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s.p.
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Vln.
mf
Fl.
Vla.
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p
Vc.
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mp
f
B♭ Cl.
p
s.t.
s.p.
ord.
D.B.
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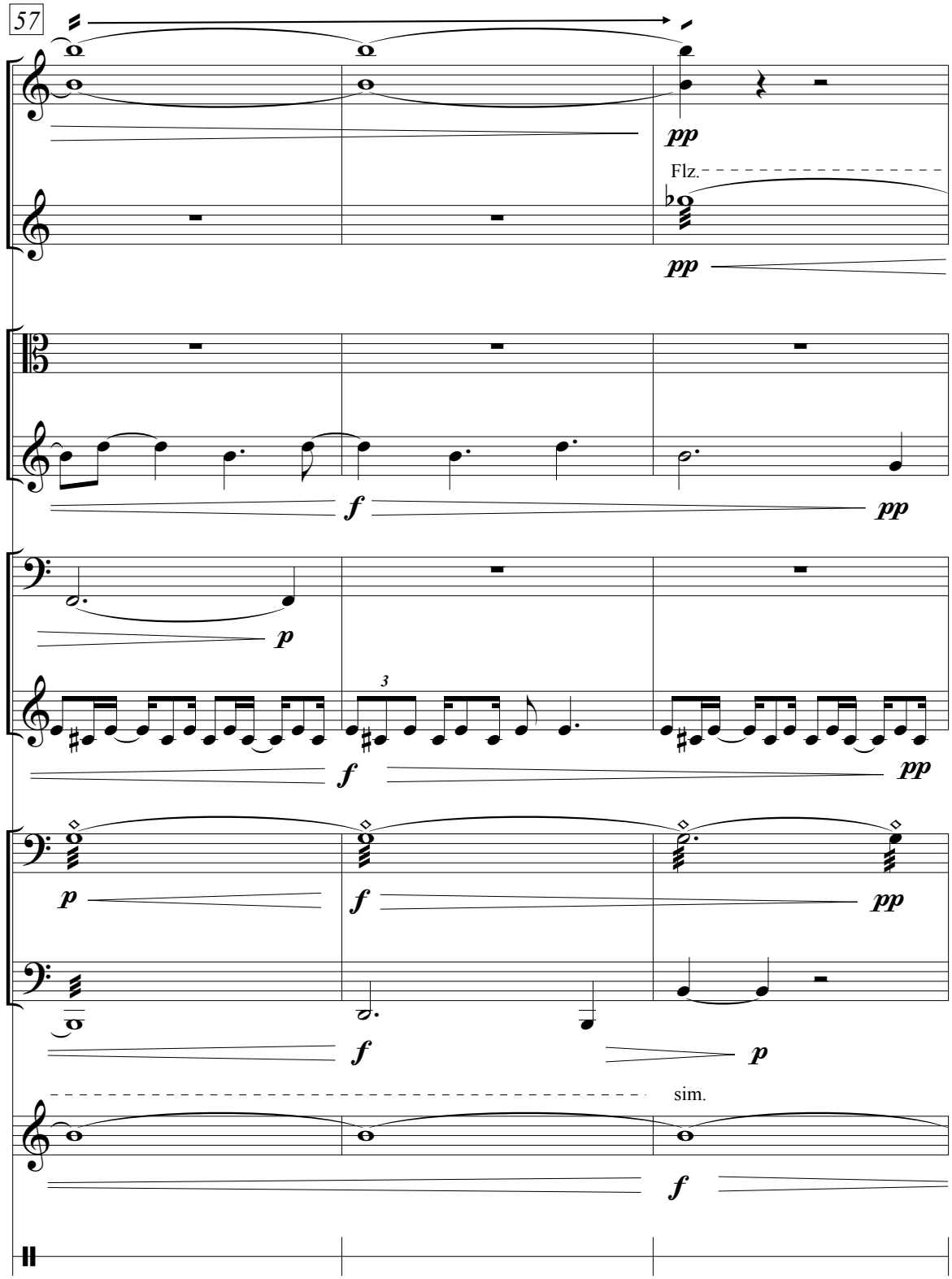
pp
Bsn.
p
suede mallet
C.B.
pp
2
*Slowly rotating ambisonics (C)
El.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Vln.
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Flz.
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Vc.
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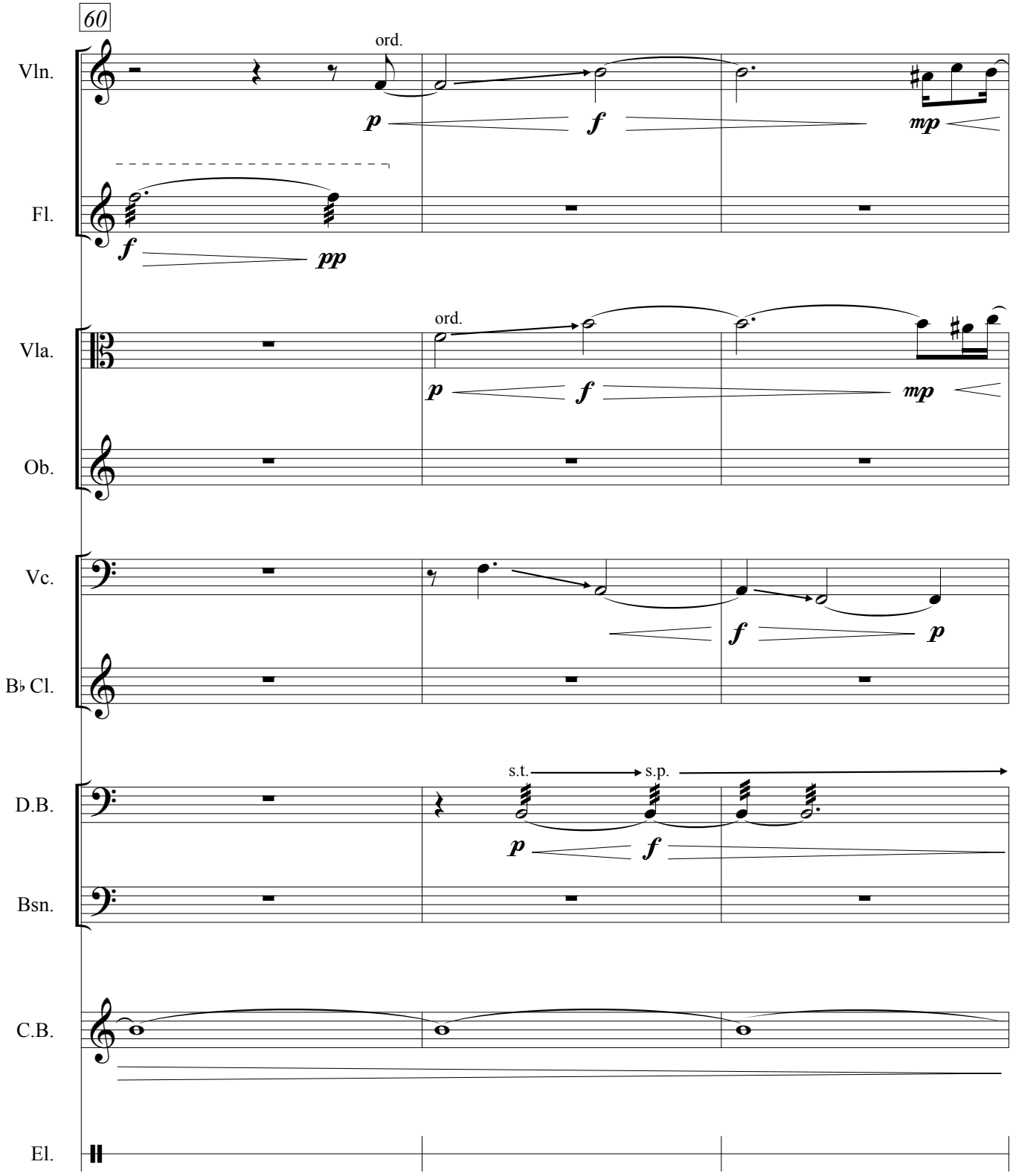
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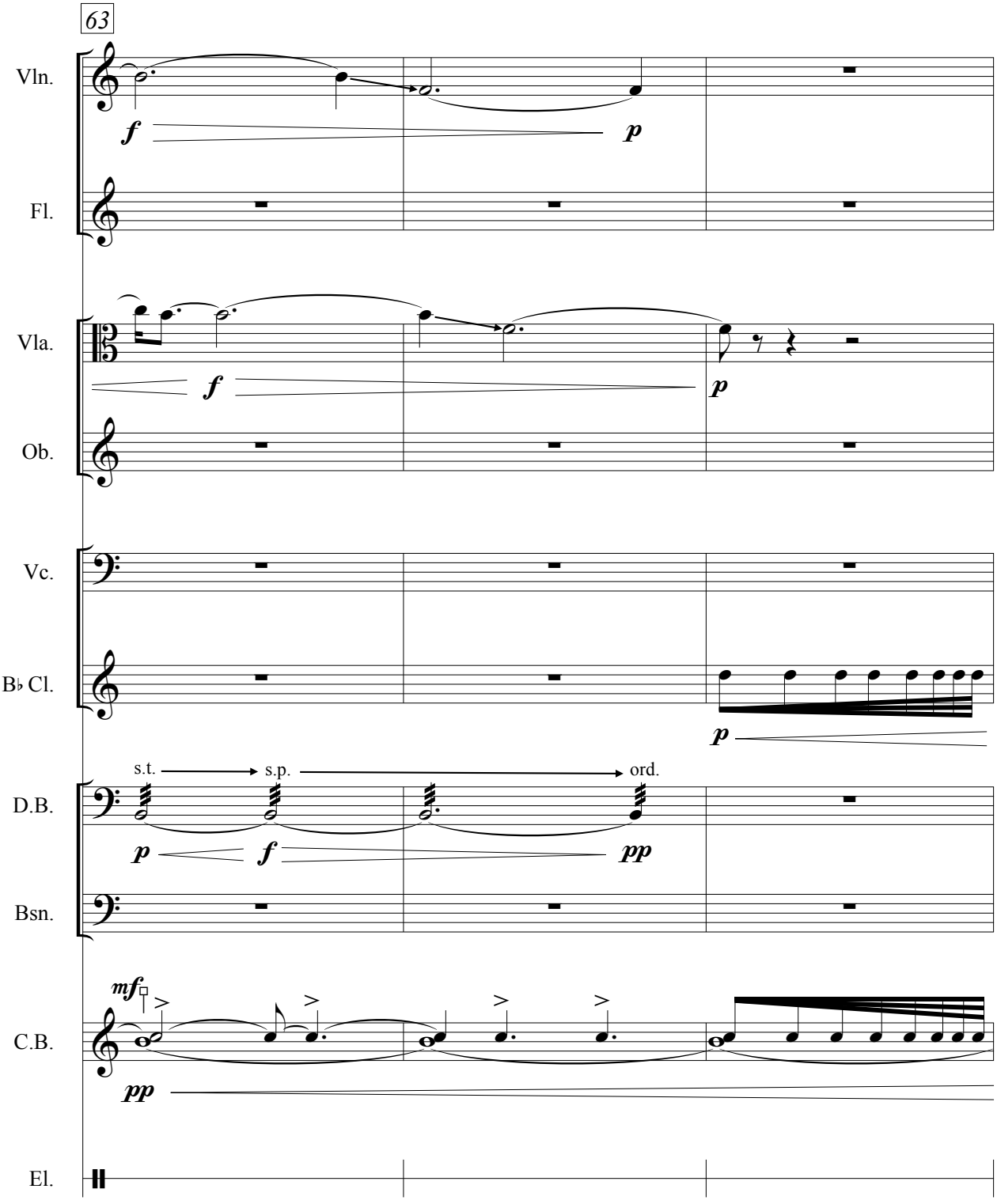
63
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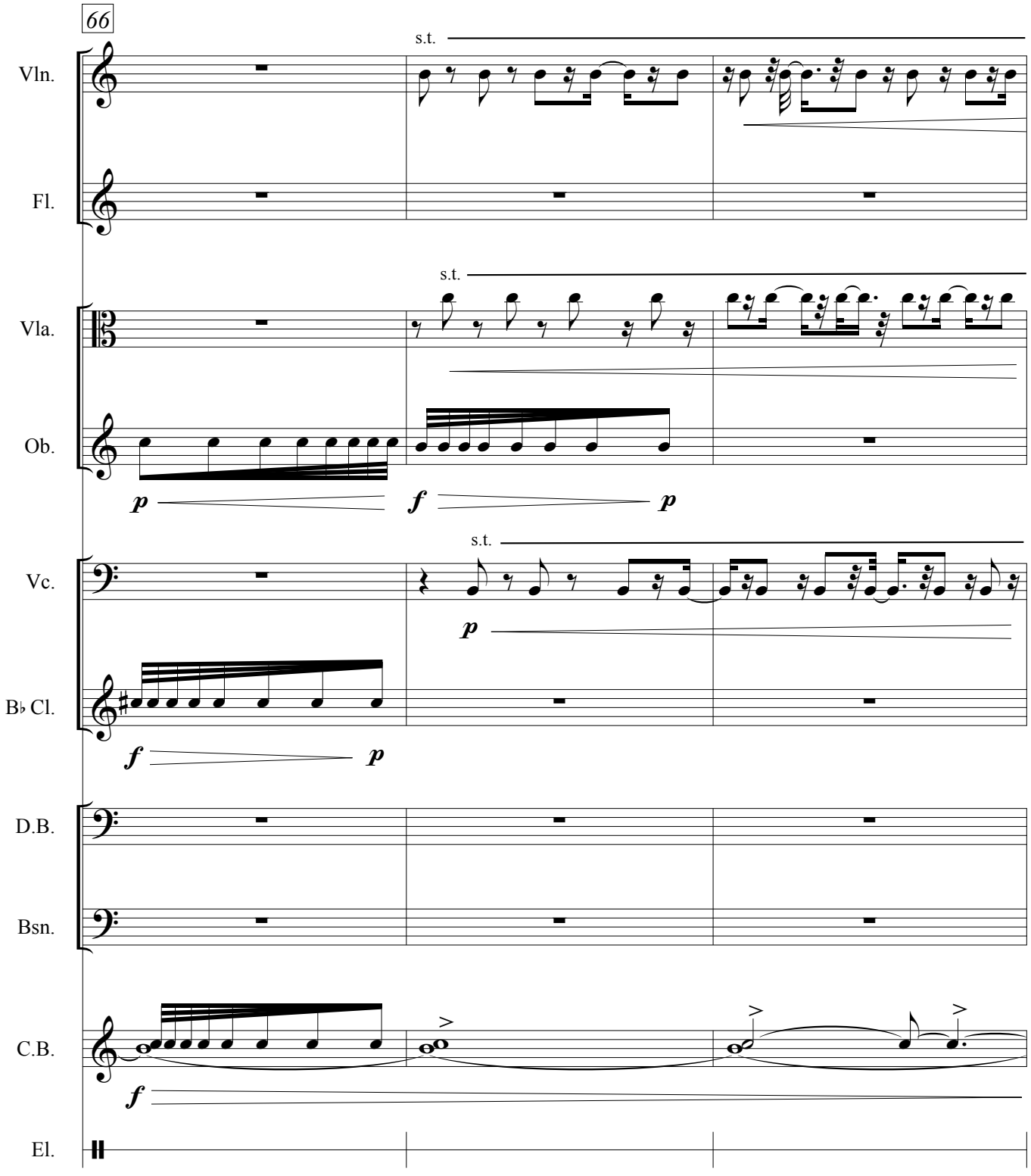
s.t.
s.p.
ord.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Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
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C.B.
El.
s.t.
s.t.
s.t.
p
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p
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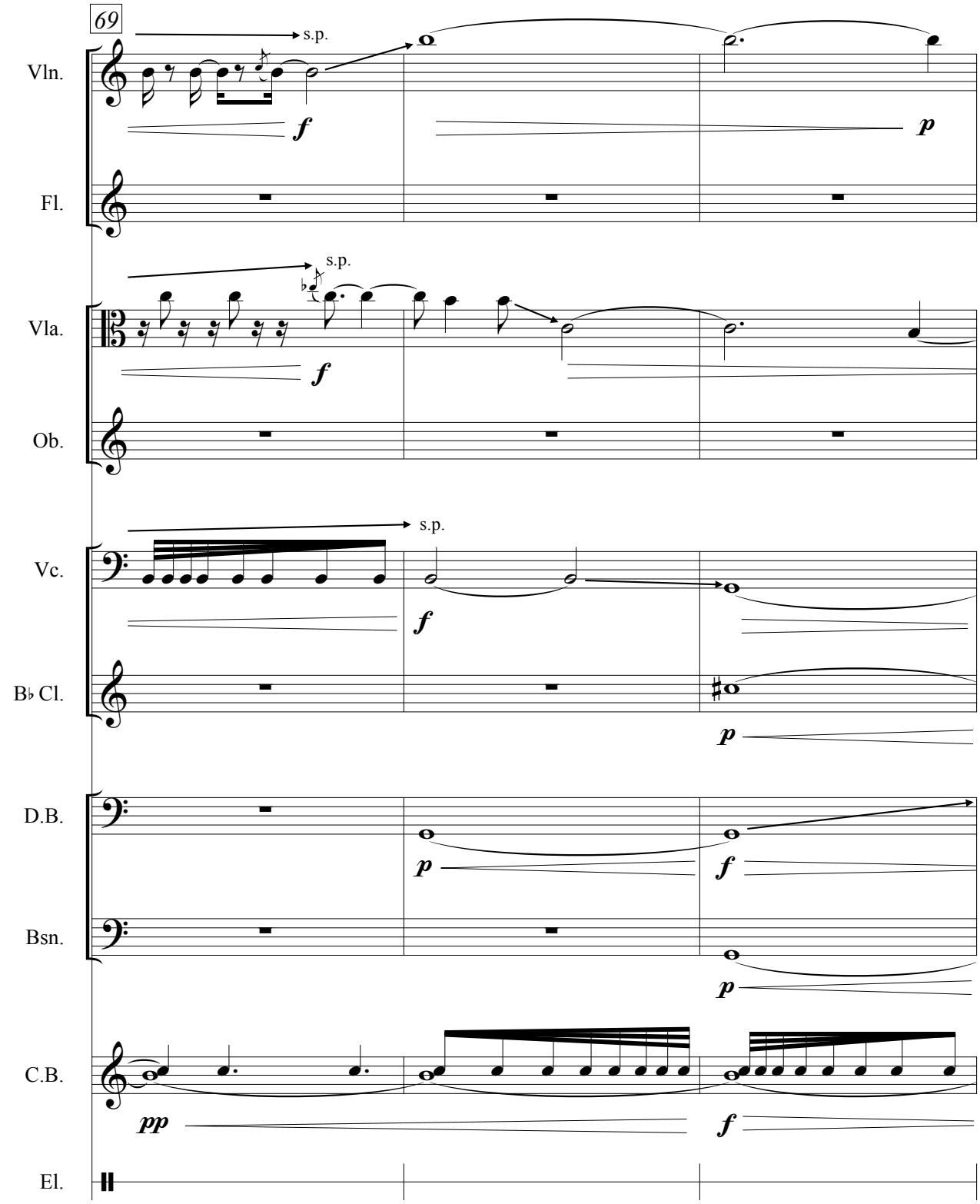
f
p
f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Vln.
s.p.
f
p
Fl.
Vla.
s.p.
f
Ob.
Vc.
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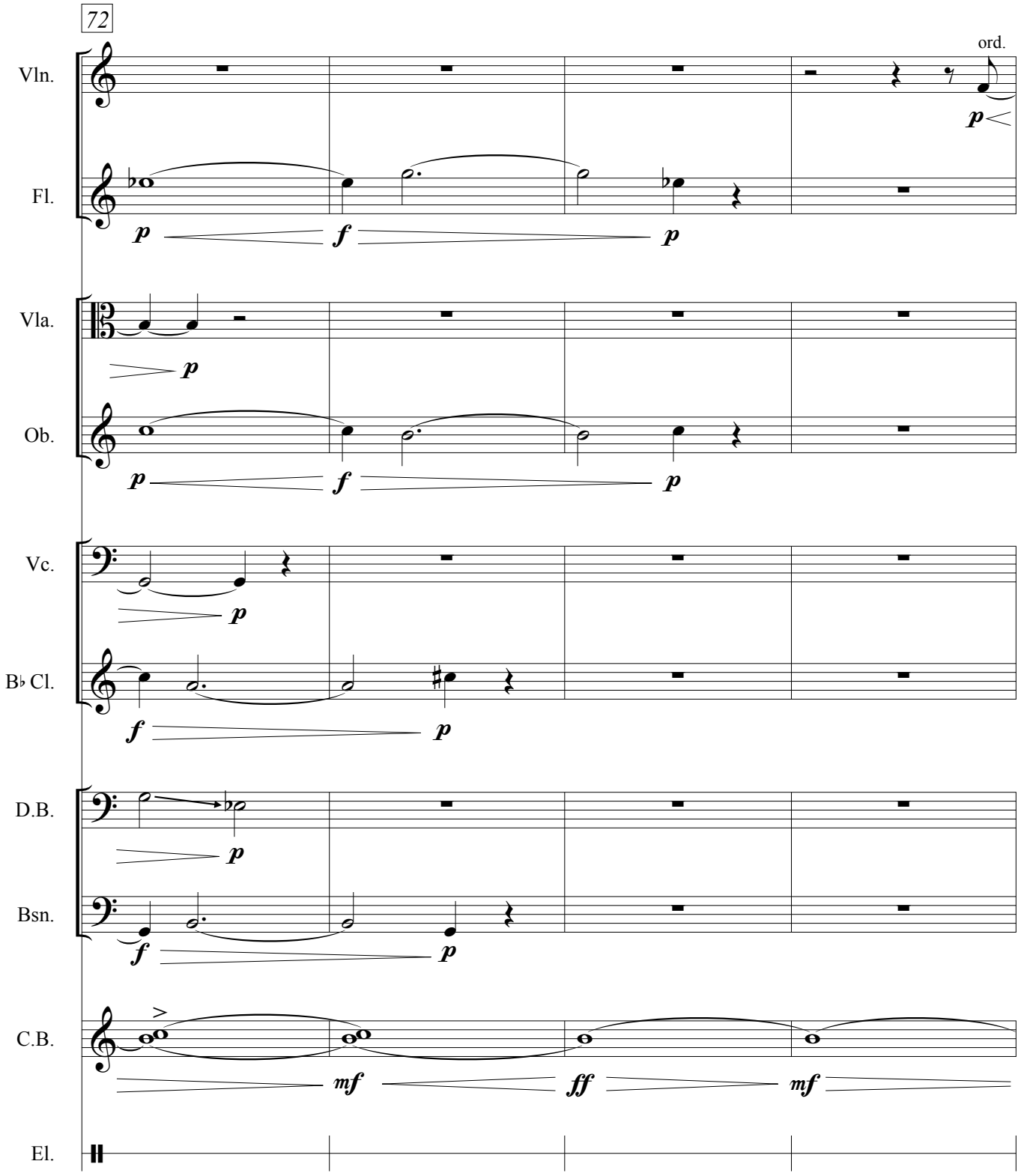
f
B♭ Cl.
p
D.B.
p
f
Bsn.
p
C.B.
pp
f
El.


72
Vln.
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Fl.
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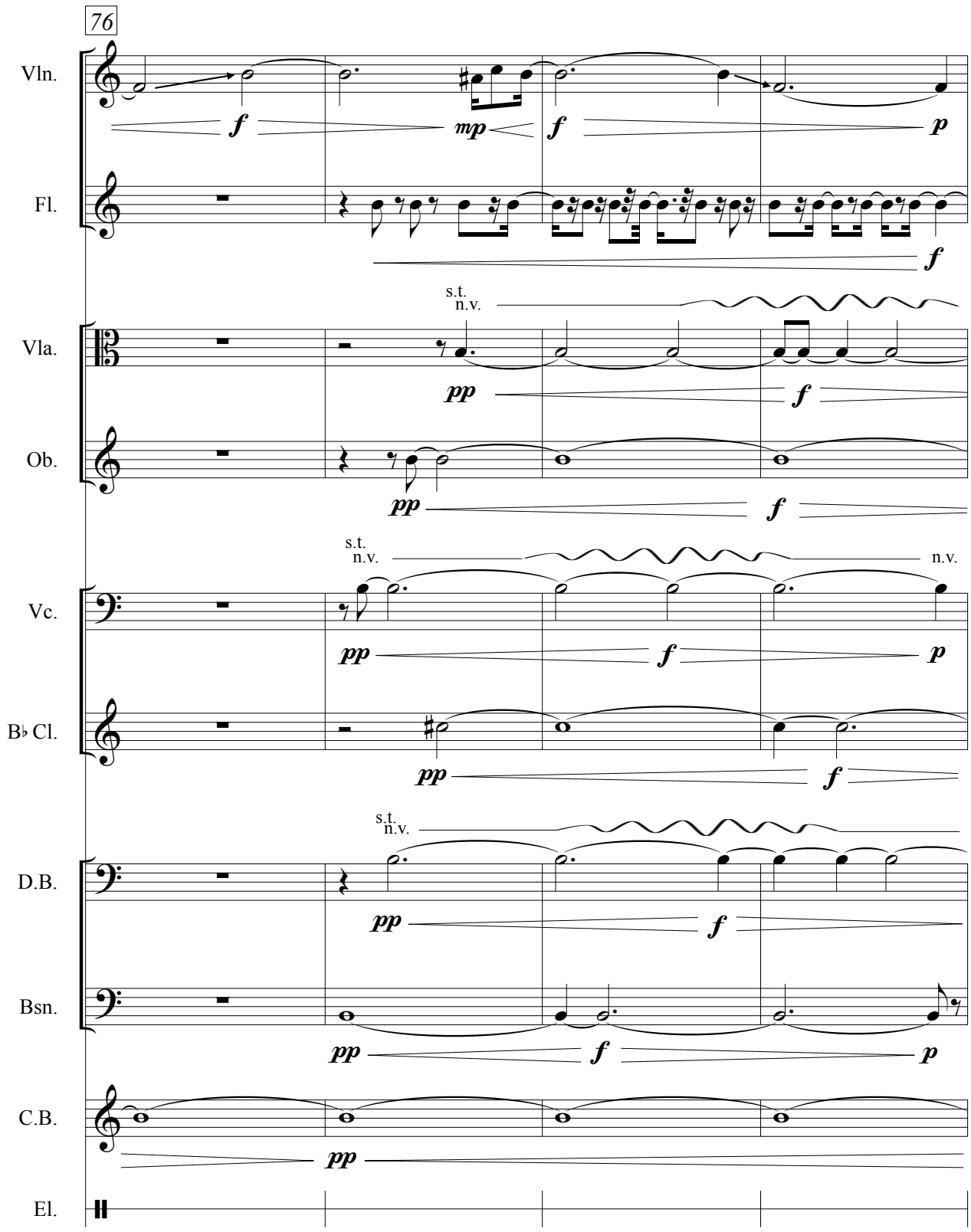
C.B.
El.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Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
n.v.
f
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p
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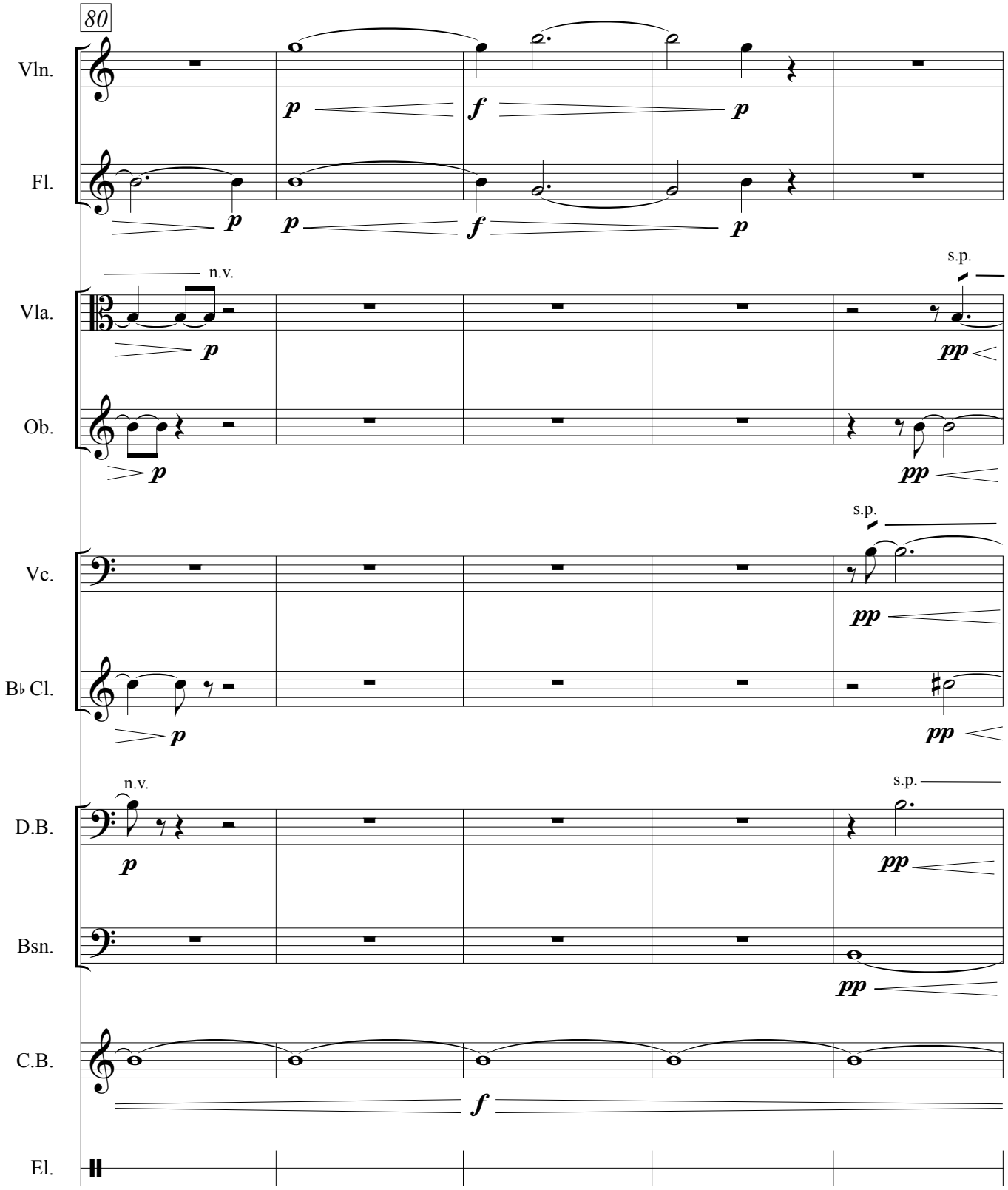
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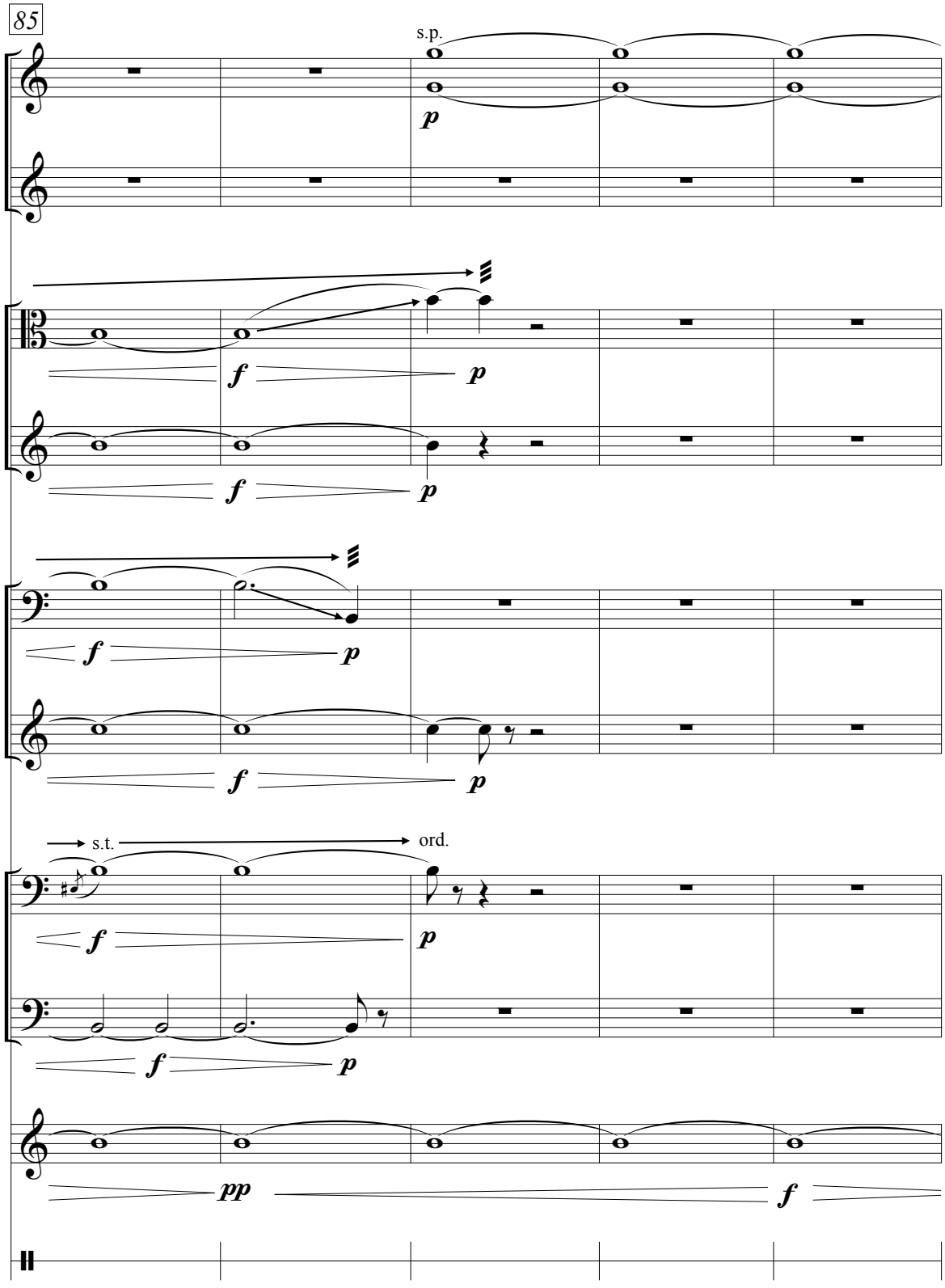
85
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p
Fl.
Vla.
f
p
Ob.
f
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Vc.
f
p
B♭ Cl.
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s.t.
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Bsn.
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C.B.
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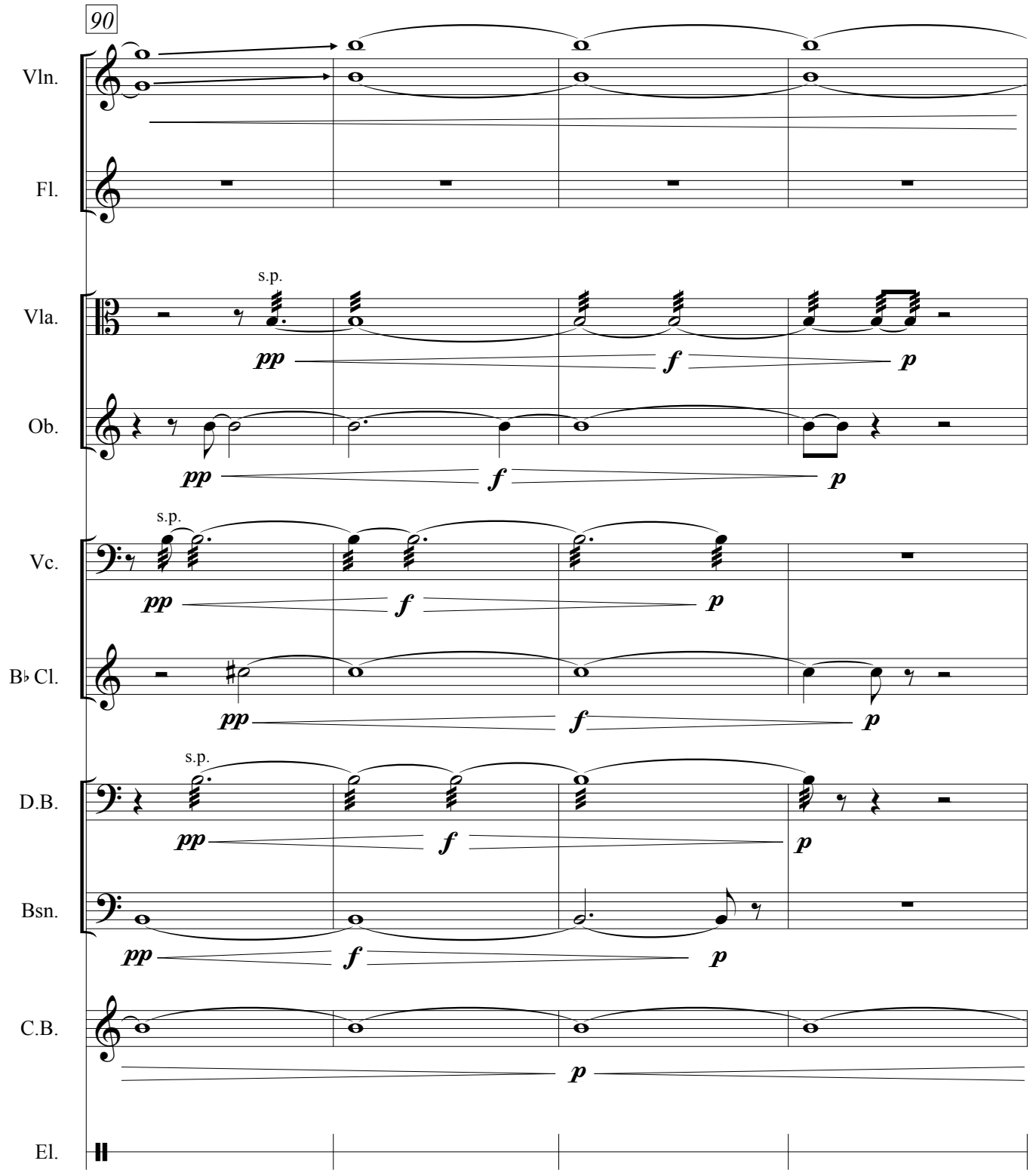
El.


90
Vln.
Fl.
Vla.
s.p.
pp
f
p
Ob.
pp
f
p
Vc.
s.p.
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B♭ Cl.
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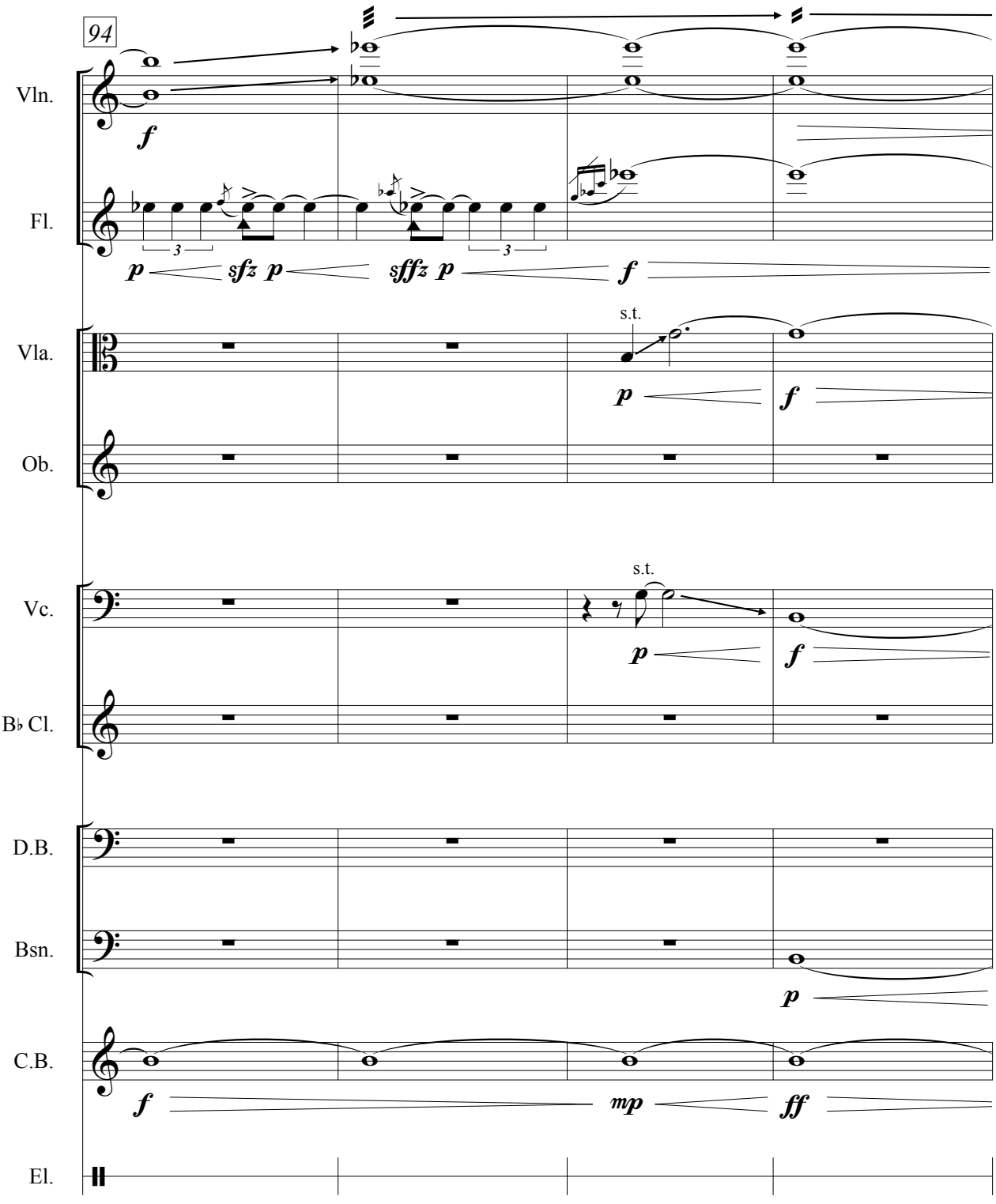
C.B.
p
El.


94
Vln.
Fl.
Vla.
Ob.
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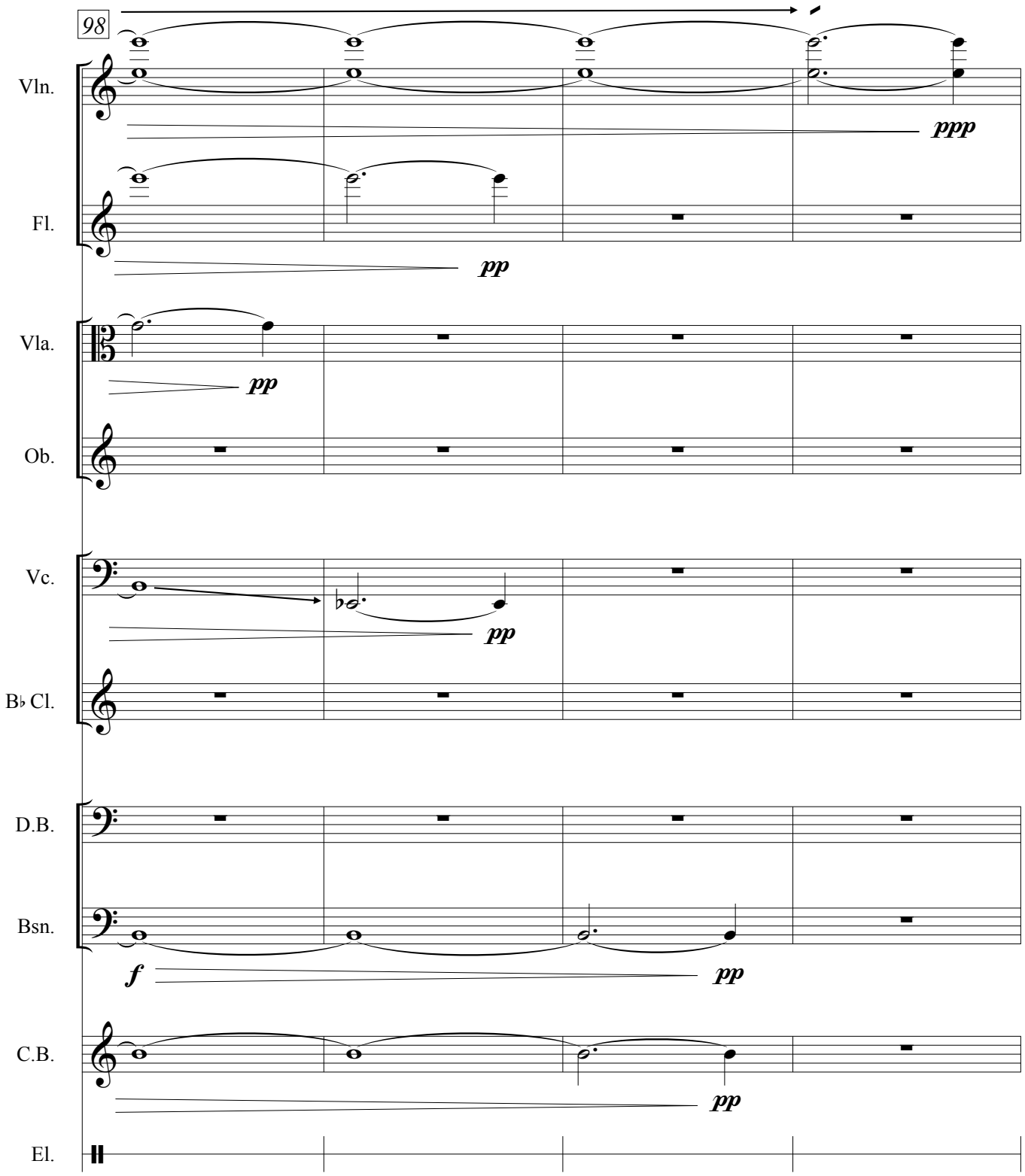
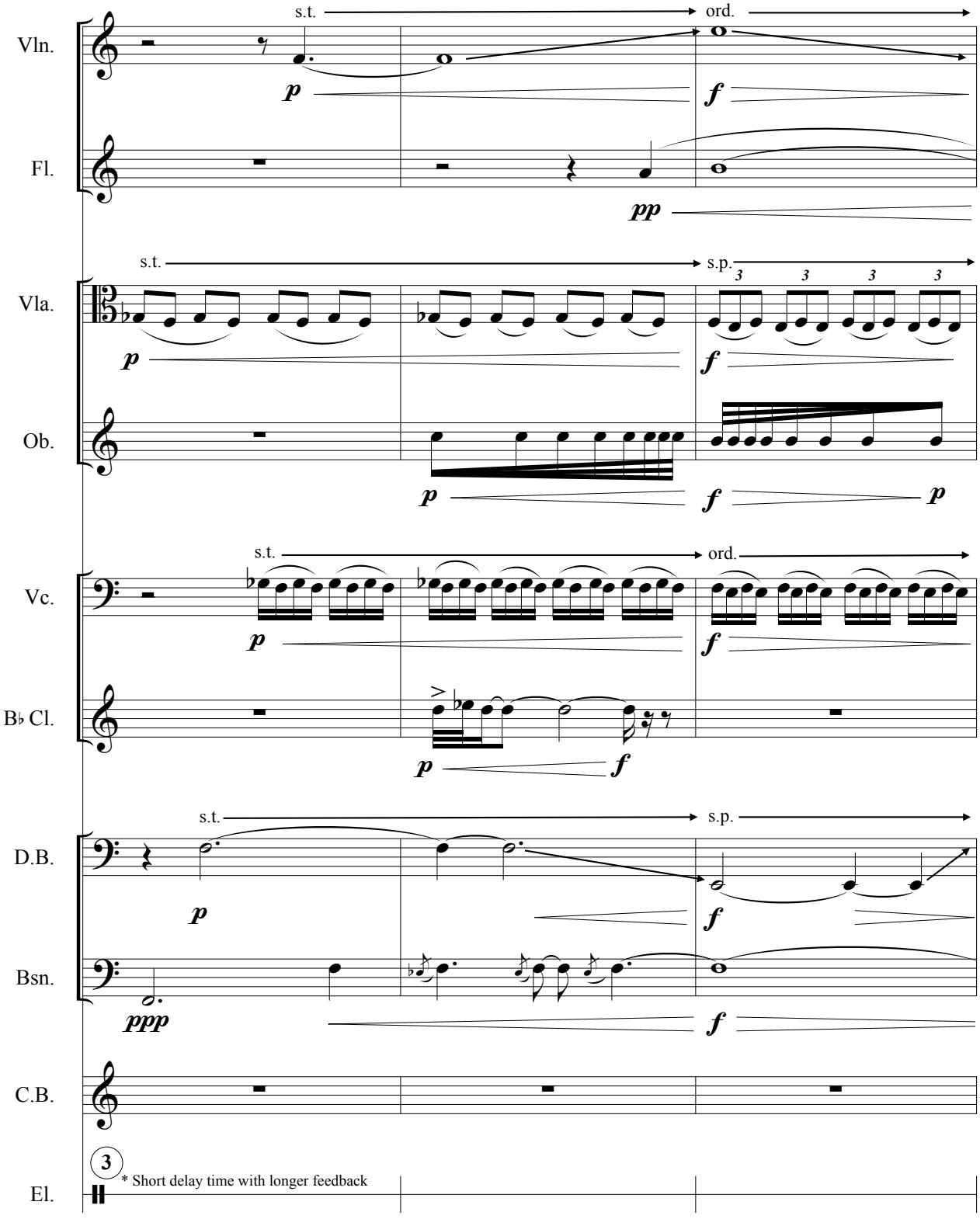
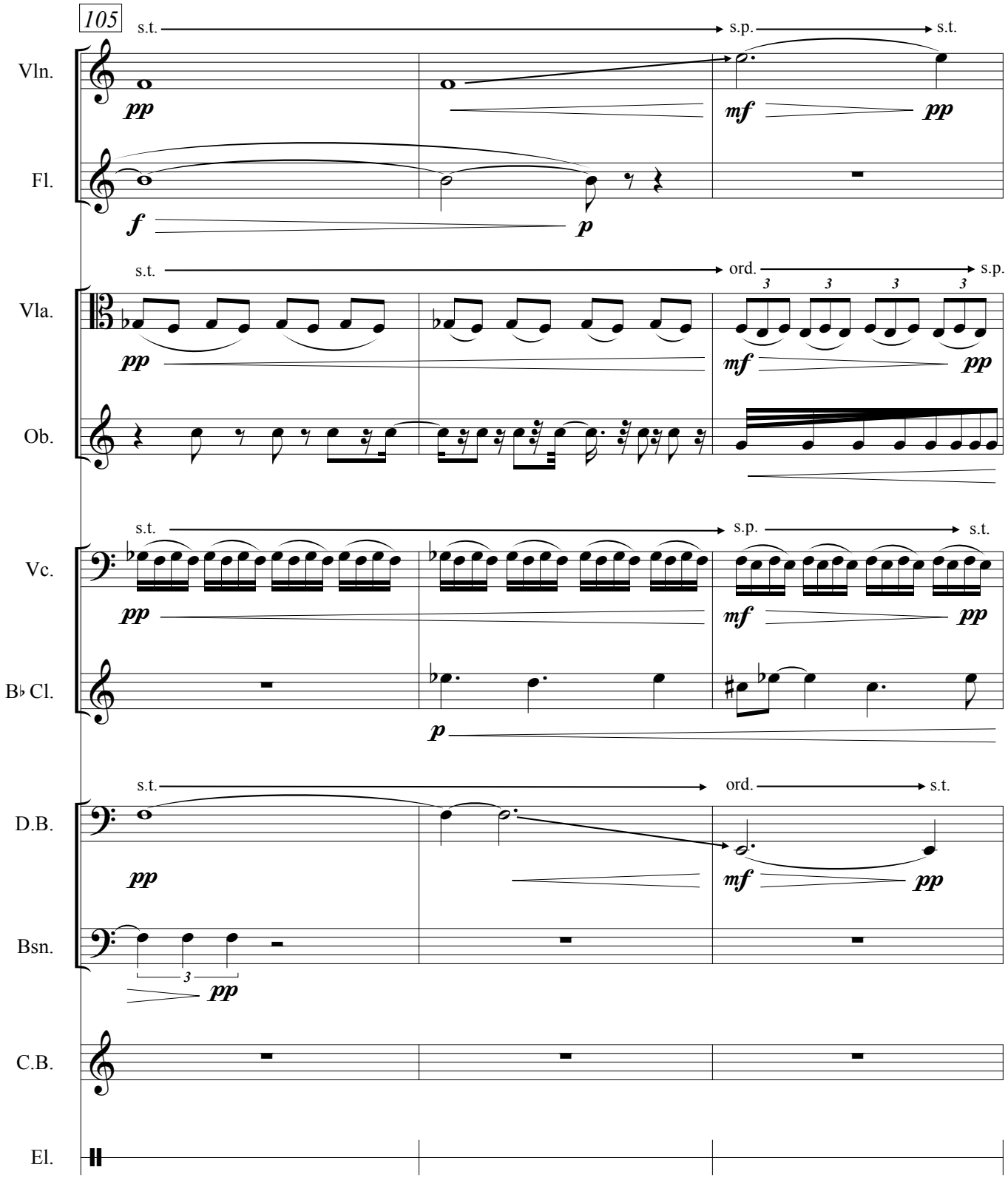
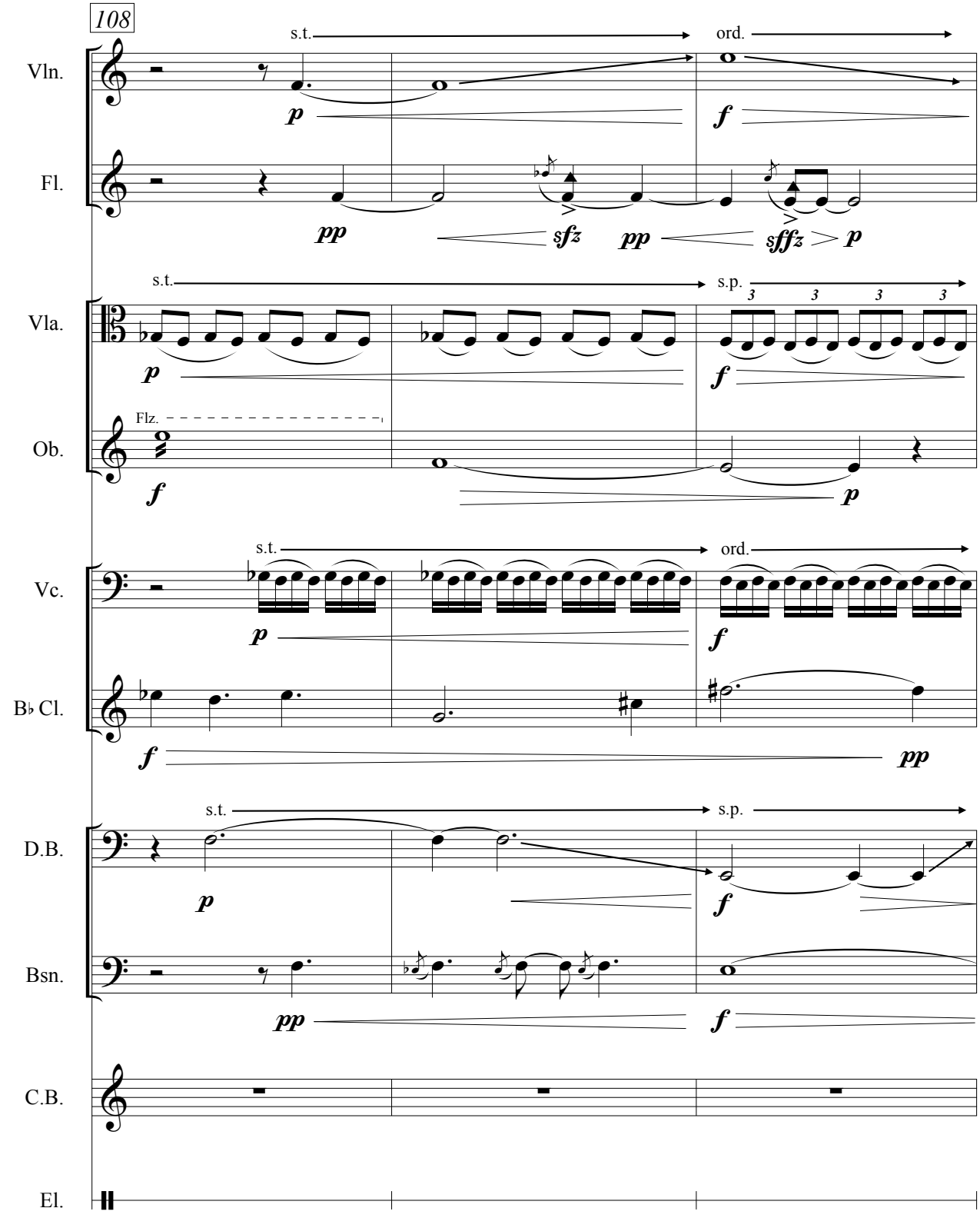
D.B.
Bsn.
C.B.
El.
s.t.
s.t.

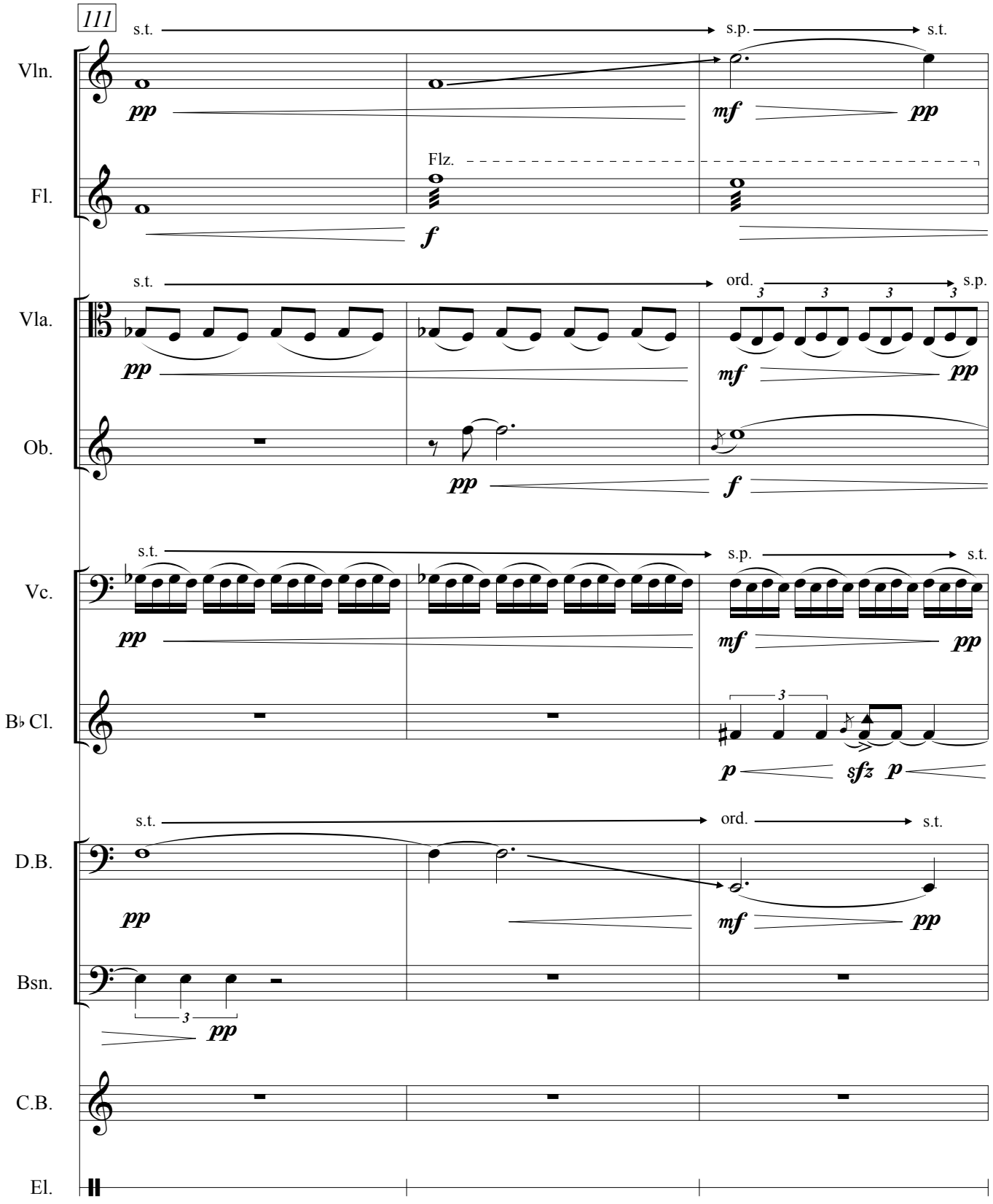

98
Vln.
ppp
Fl.
pp
Vla.
pp
Ob.
Vc.
pp
B♭ Cl.
D.B.
Bsn.
f
pp
C.B.
pp
El.

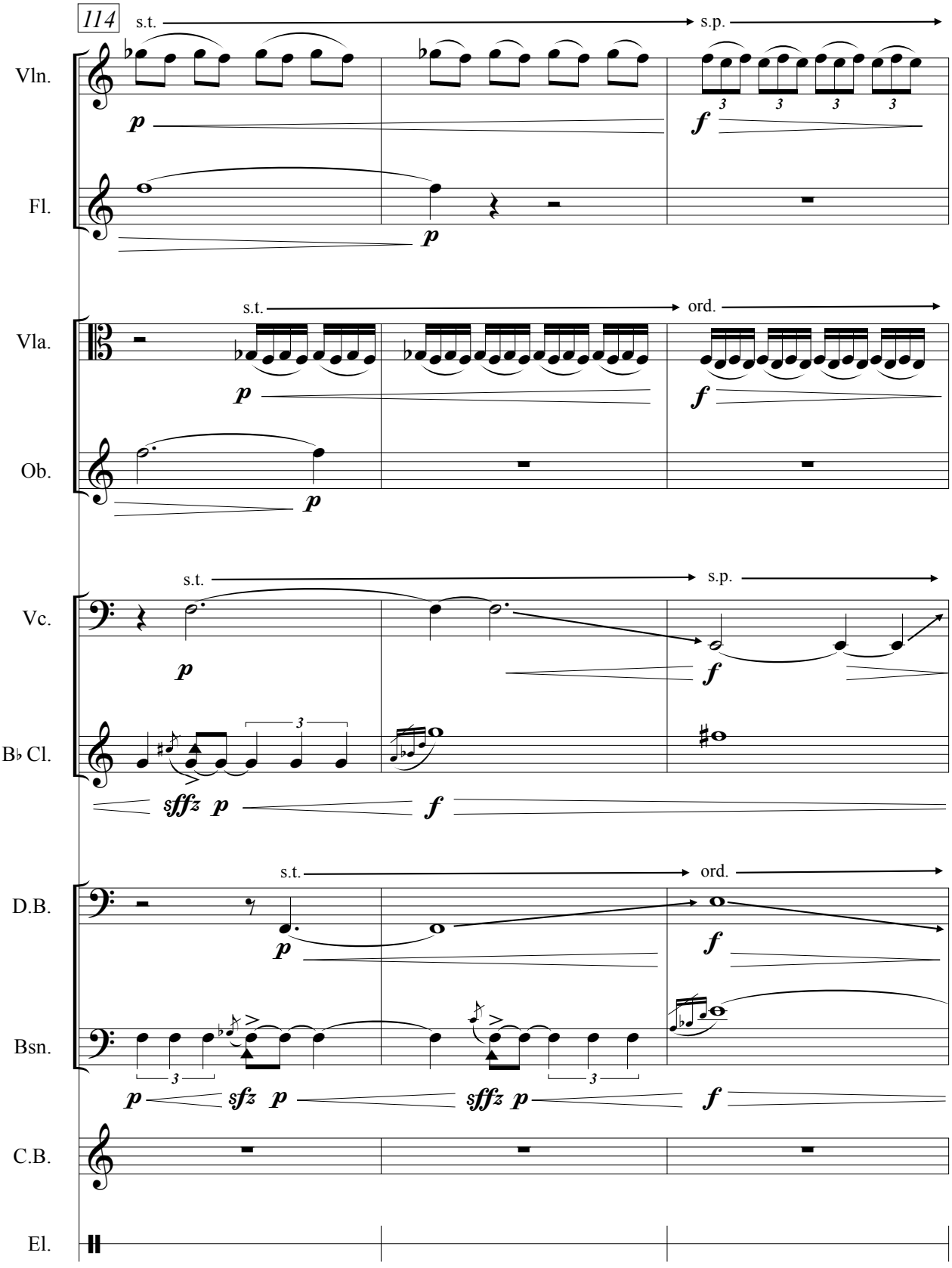
II. Slow but chaotic (♩ = ca. 60)

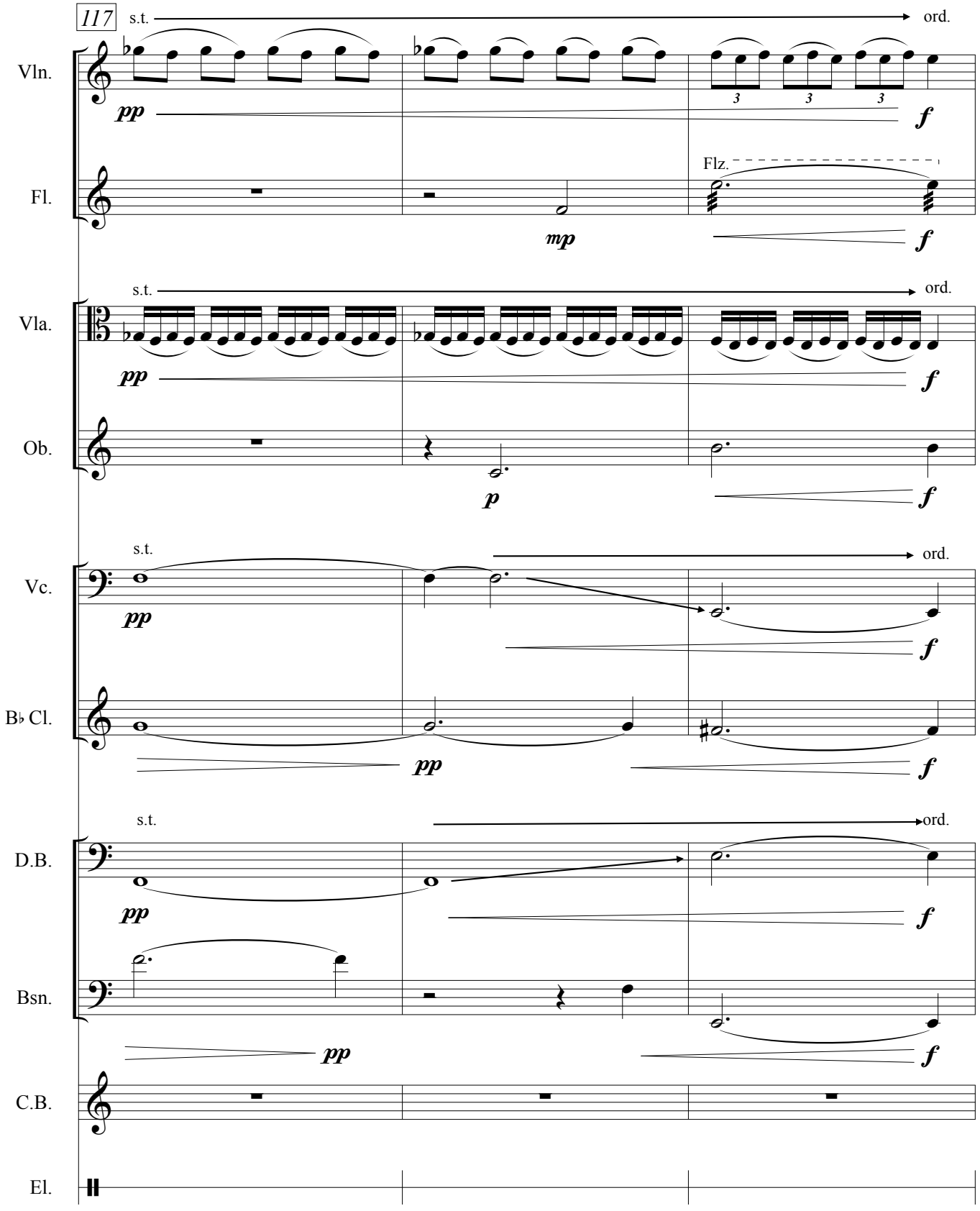


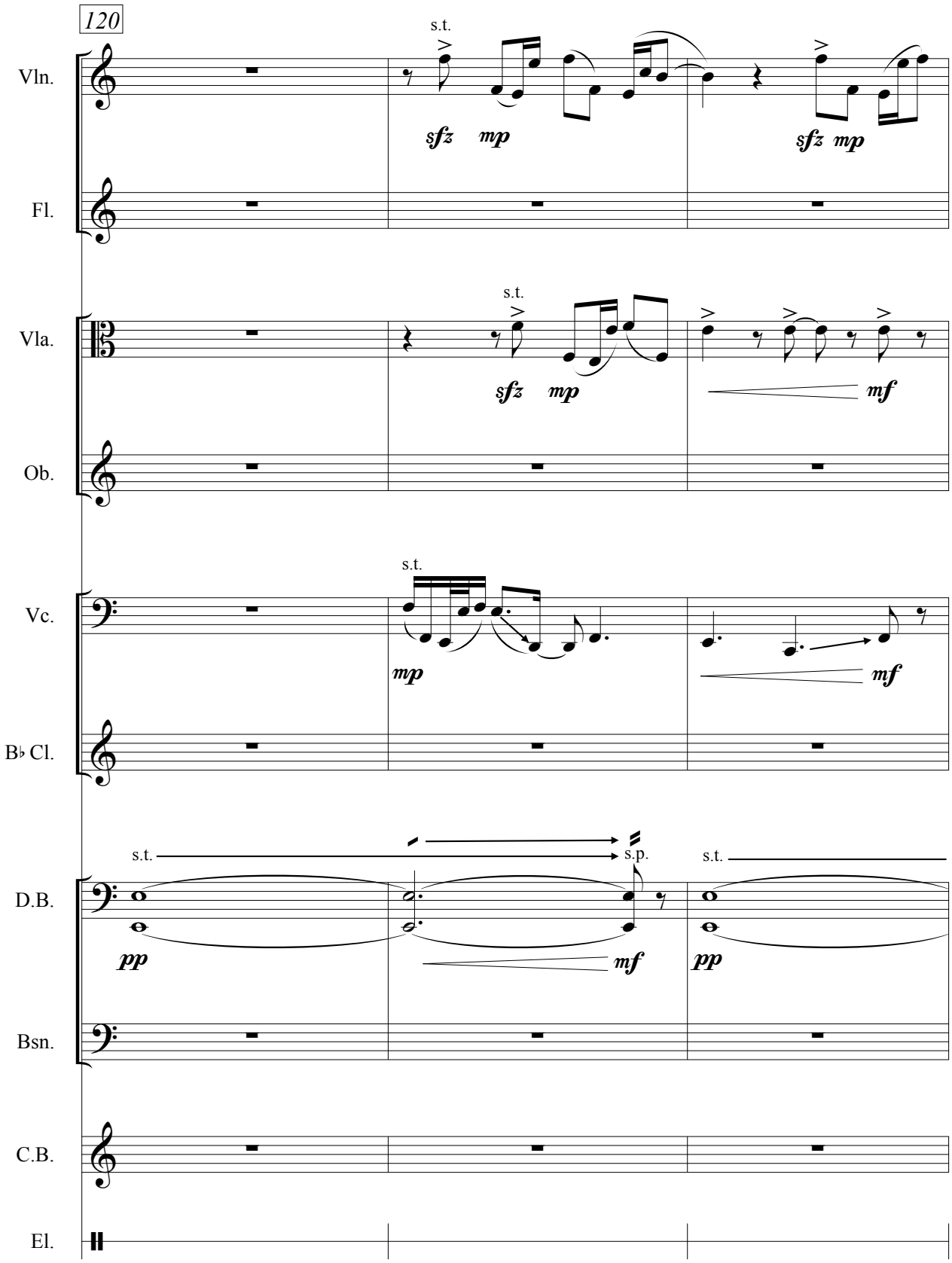

105
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
s.p.
ord.
pp
mf
f
p

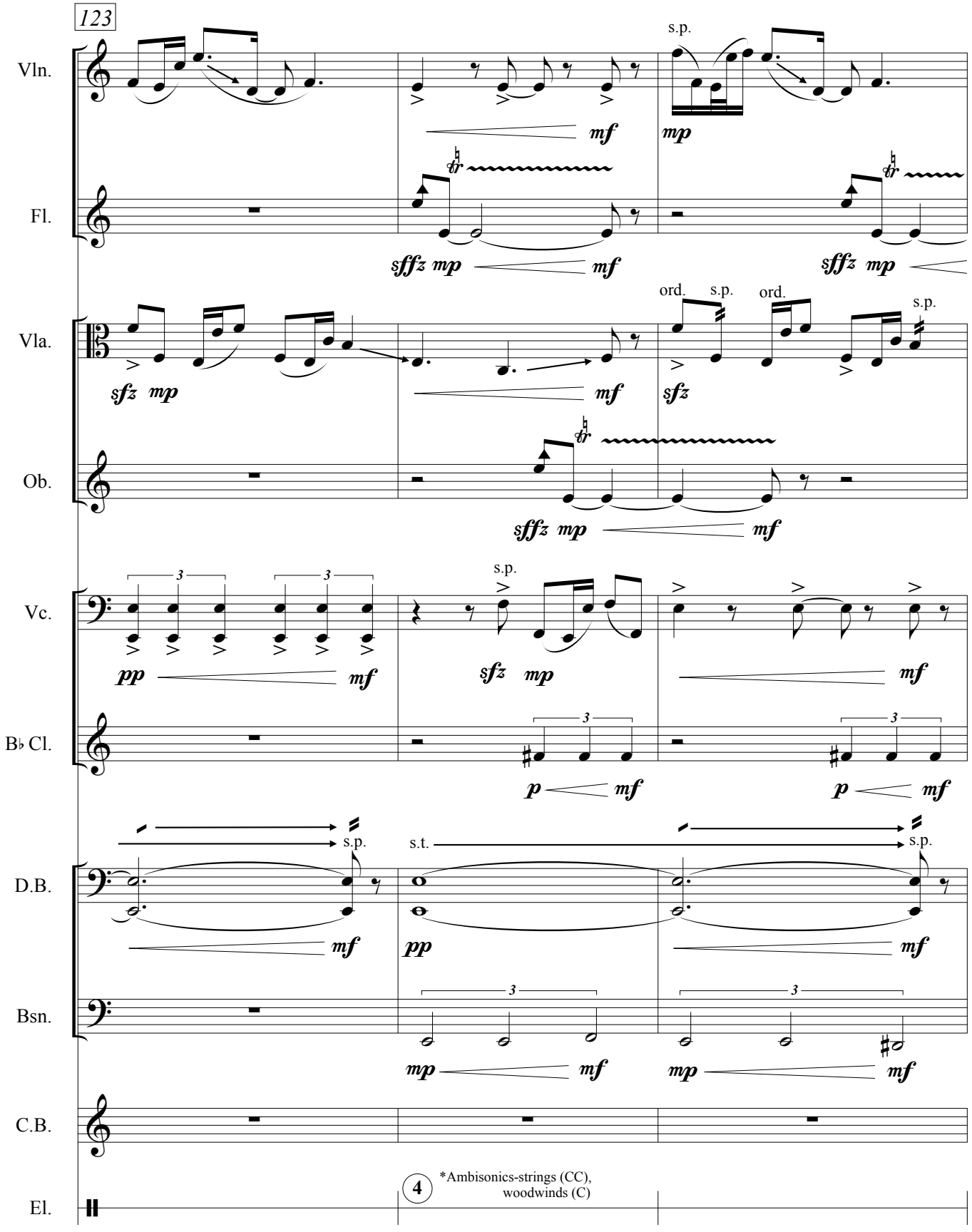

108
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
ord.
s.p.
Flz.
p
f
pp
sfz
sfffz
3

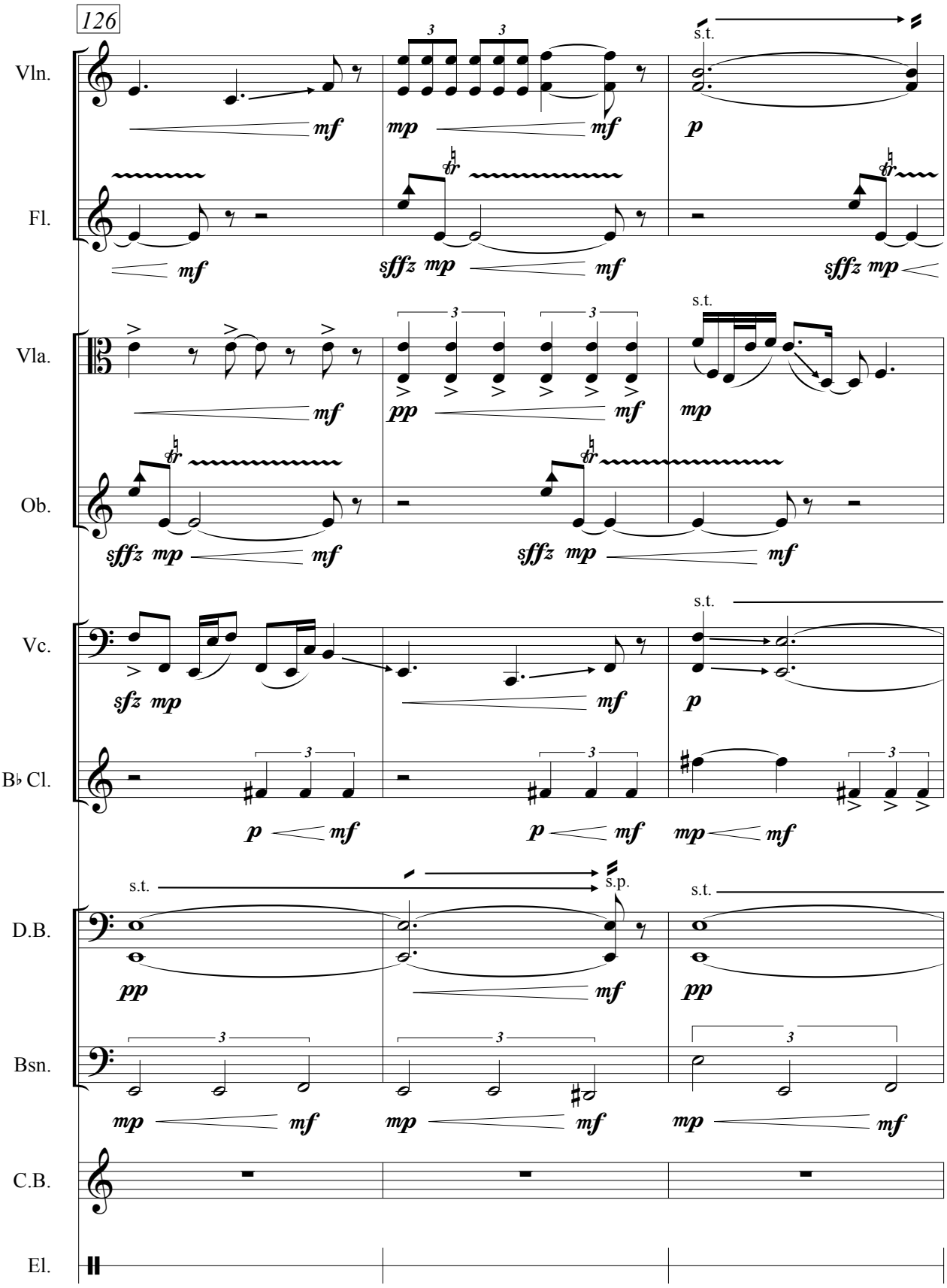

111
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
s.p.
ord.
Flz.
pp
mf
f
p
sfz
3

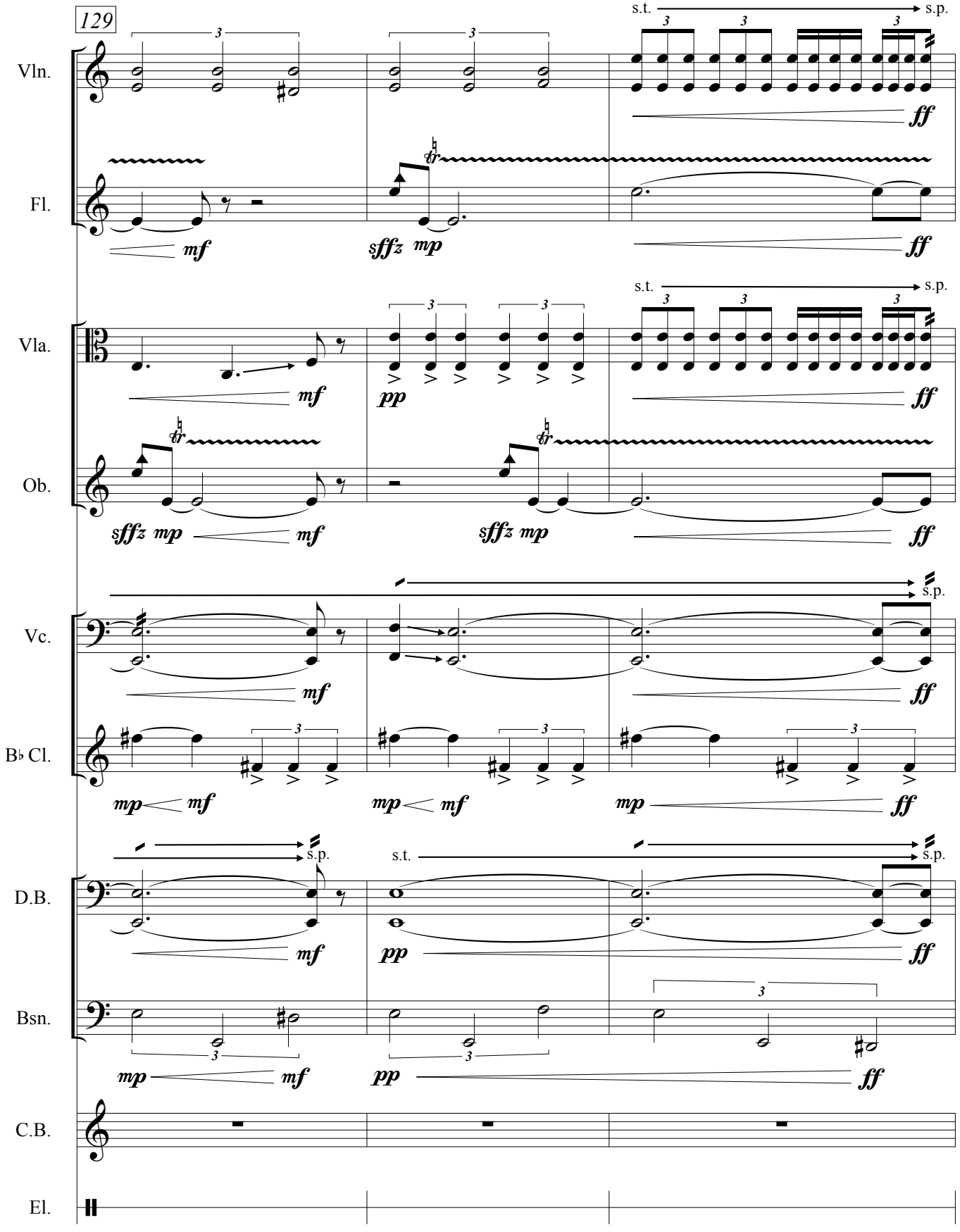

114
s.t.
s.p.
Vln.
p
f
Fl.
p
s.t.
ord.
Vla.
p
f
Ob.
p
s.t.
s.p.
Vc.
p
f
B♭ Cl.
sffz p
f
s.t.
ord.
D.B.
p
f
Bsn.
p
sfz p
sffz p
f
C.B.
El.

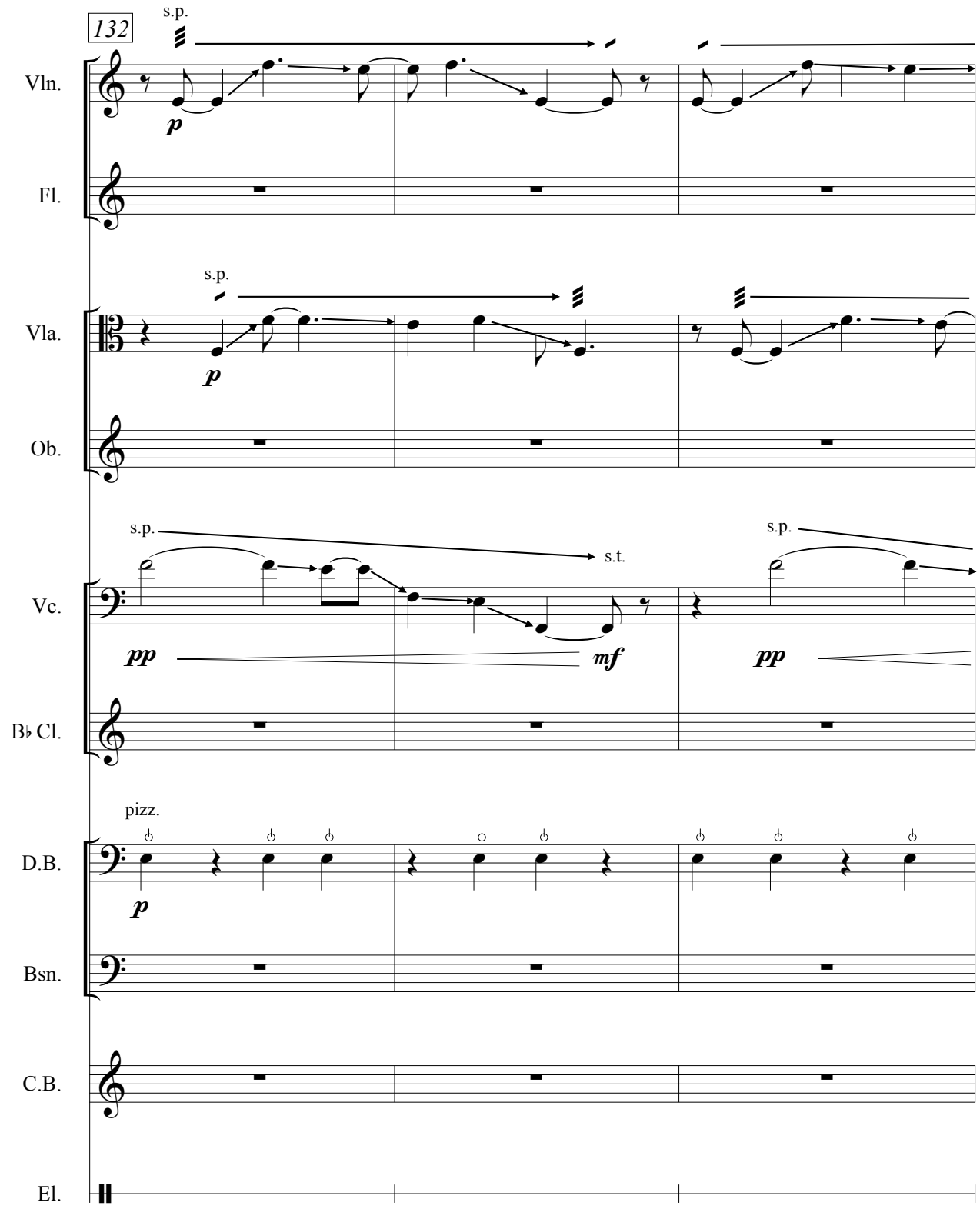

117
s.t.
ord.
Vln.
pp
f
Fl.
Flz.
mp
f
s.t.
ord.
Vla.
pp
f
Ob.
p
f
s.t.
ord.
Vc.
pp
f
B♭ Cl.
pp
f
s.t.
ord.
D.B.
pp
f
Bsn.
pp
f
C.B.
El.

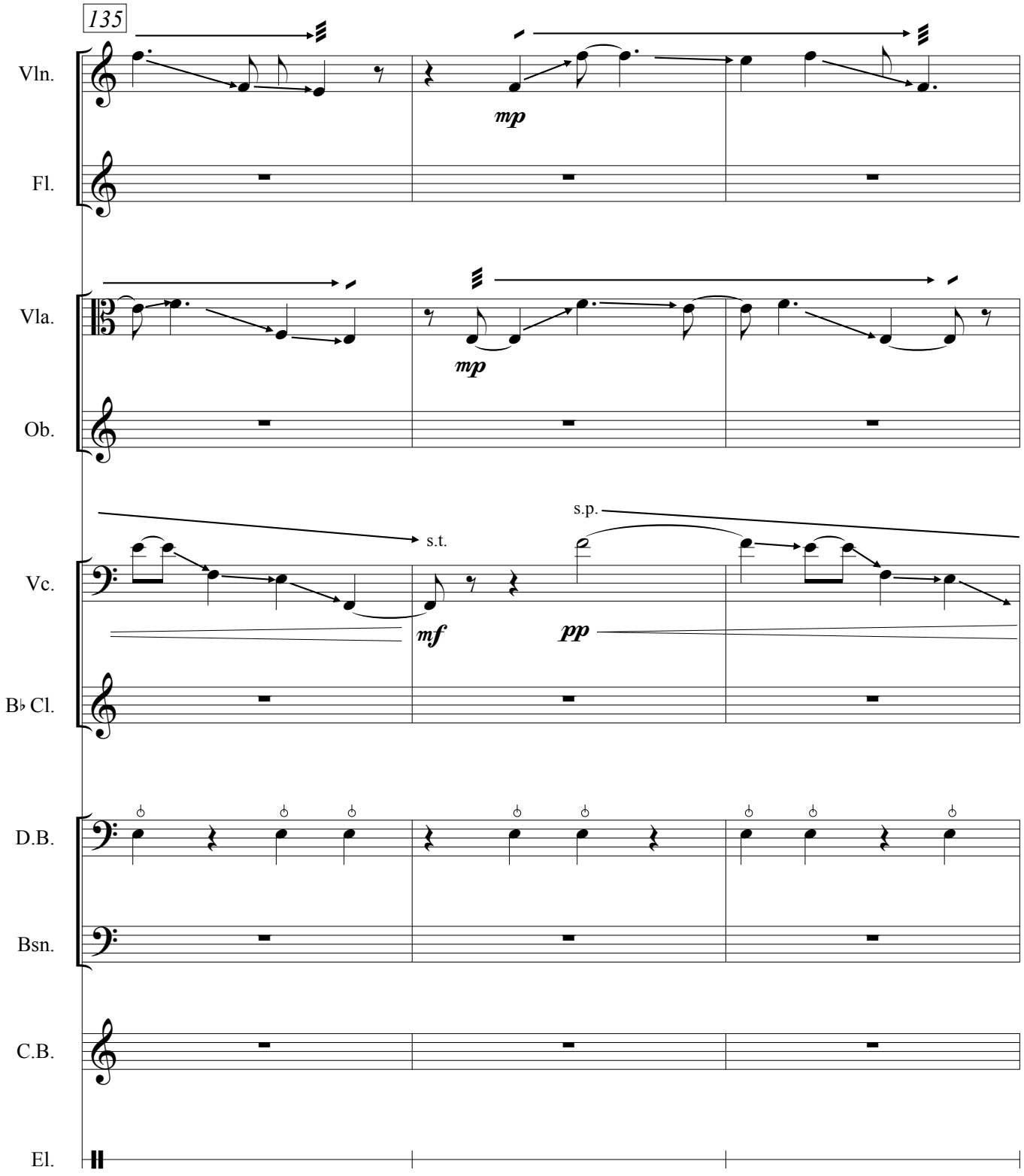

120
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
sfz mp
sfz mp
s.t.
sfz mp
mf
s.t.
mp
mf
s.t.
s.p.
s.t.
pp
mf
pp

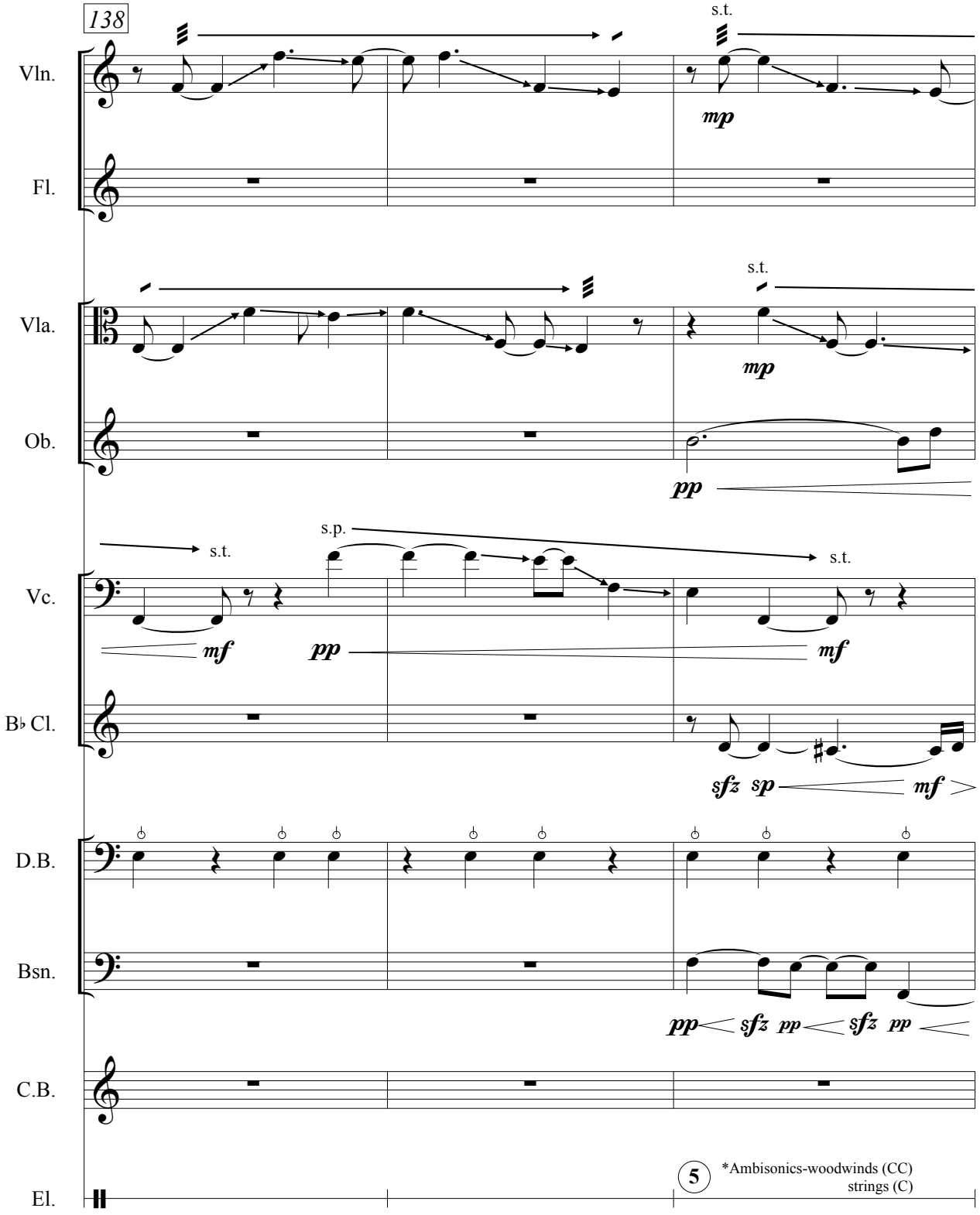

123
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.p.
ord.
s.t.
4
*Ambisonics-strings (CC), woodwinds (C)

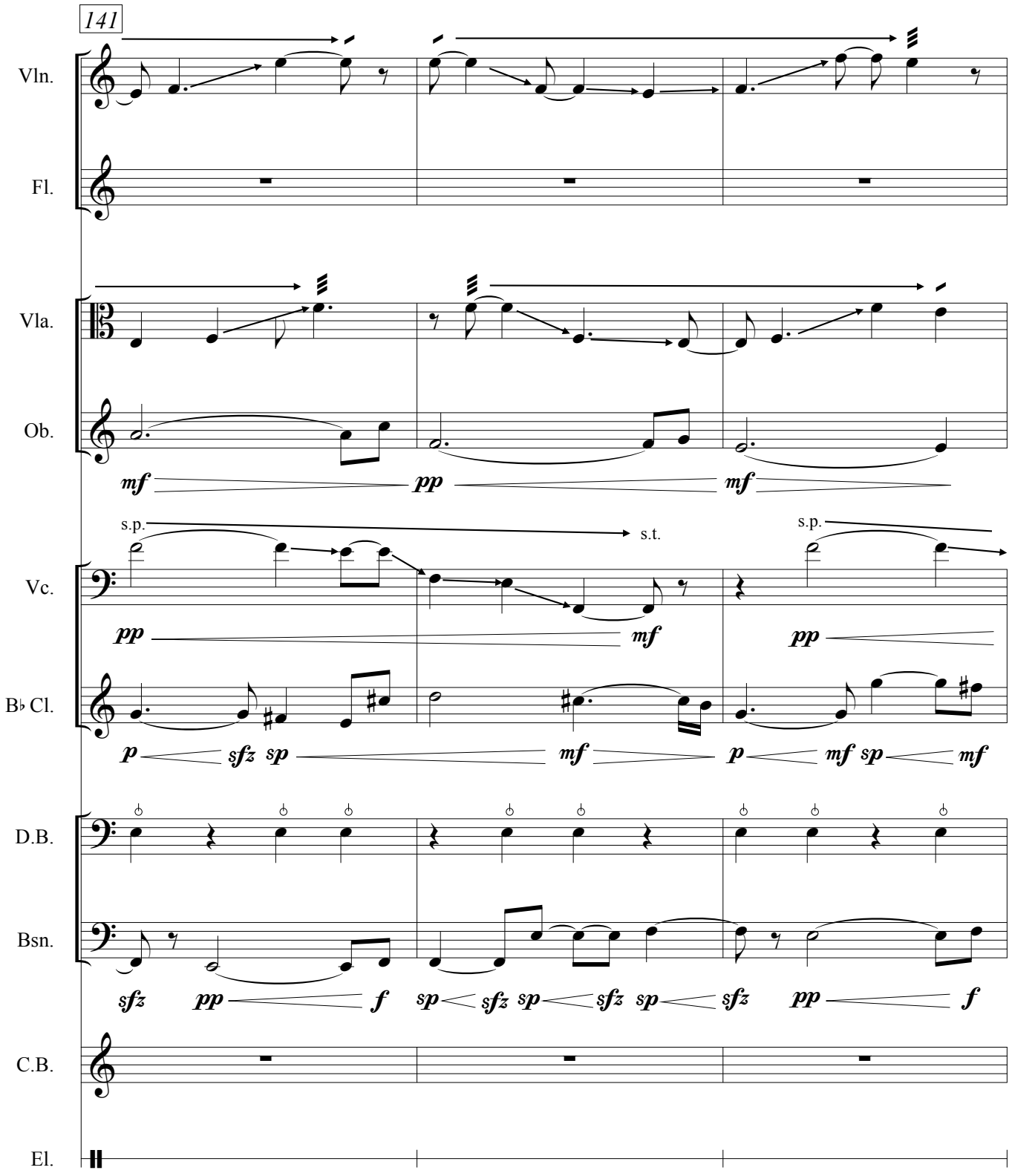

126
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
s.p.
mf
mp
p
pp
sffz
sfz
tr

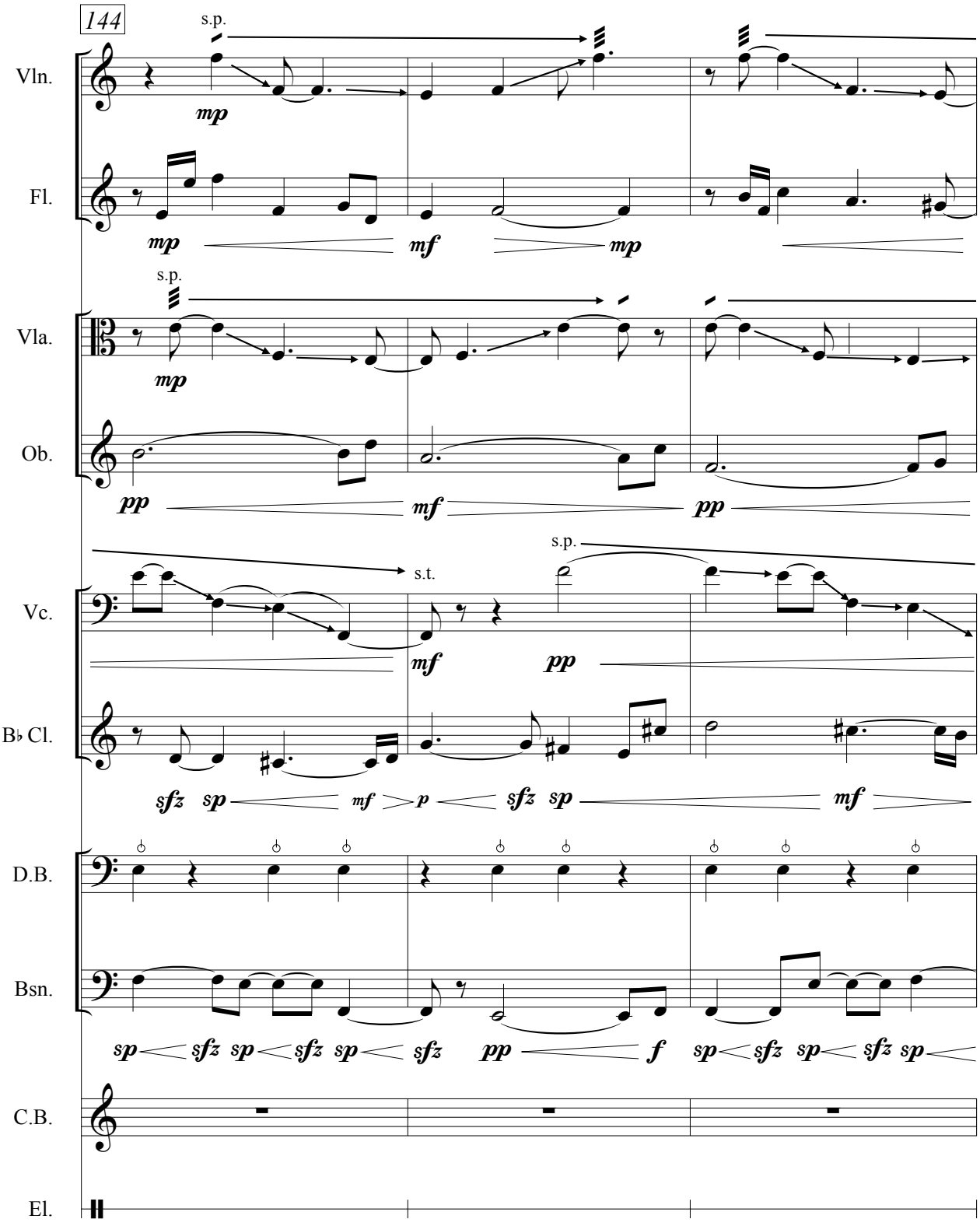

129
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
s.p.
mf
sffz mp
pp
ff
mp

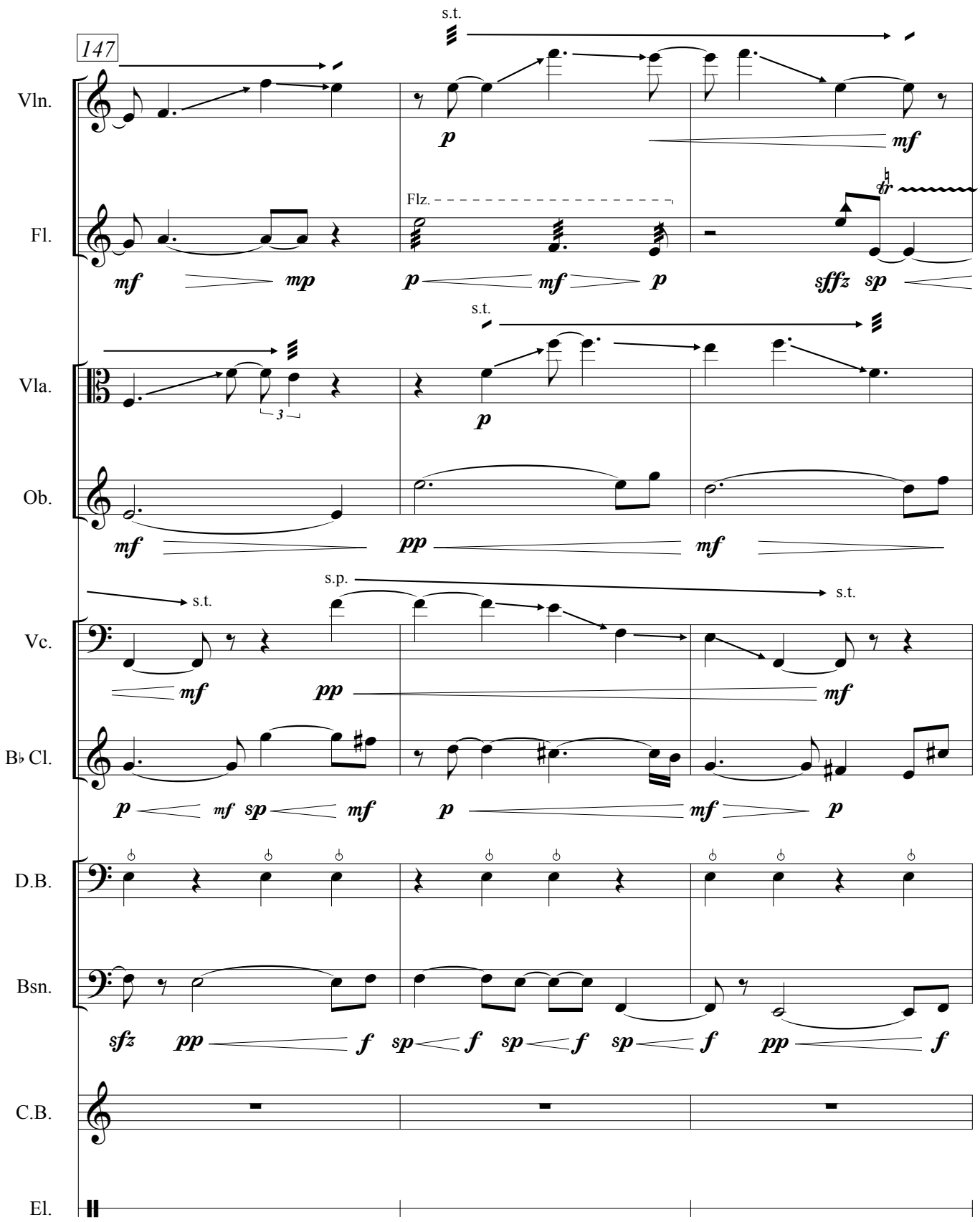

132
s.p.
Vln.
p
Fl.
s.p.
Vla.
p
Ob.
s.p.
s.t.
s.p.
Vc.
pp
mf
pp
B♭ Cl.
pizz.
D.B.
p
Bsn.
C.B.
El.

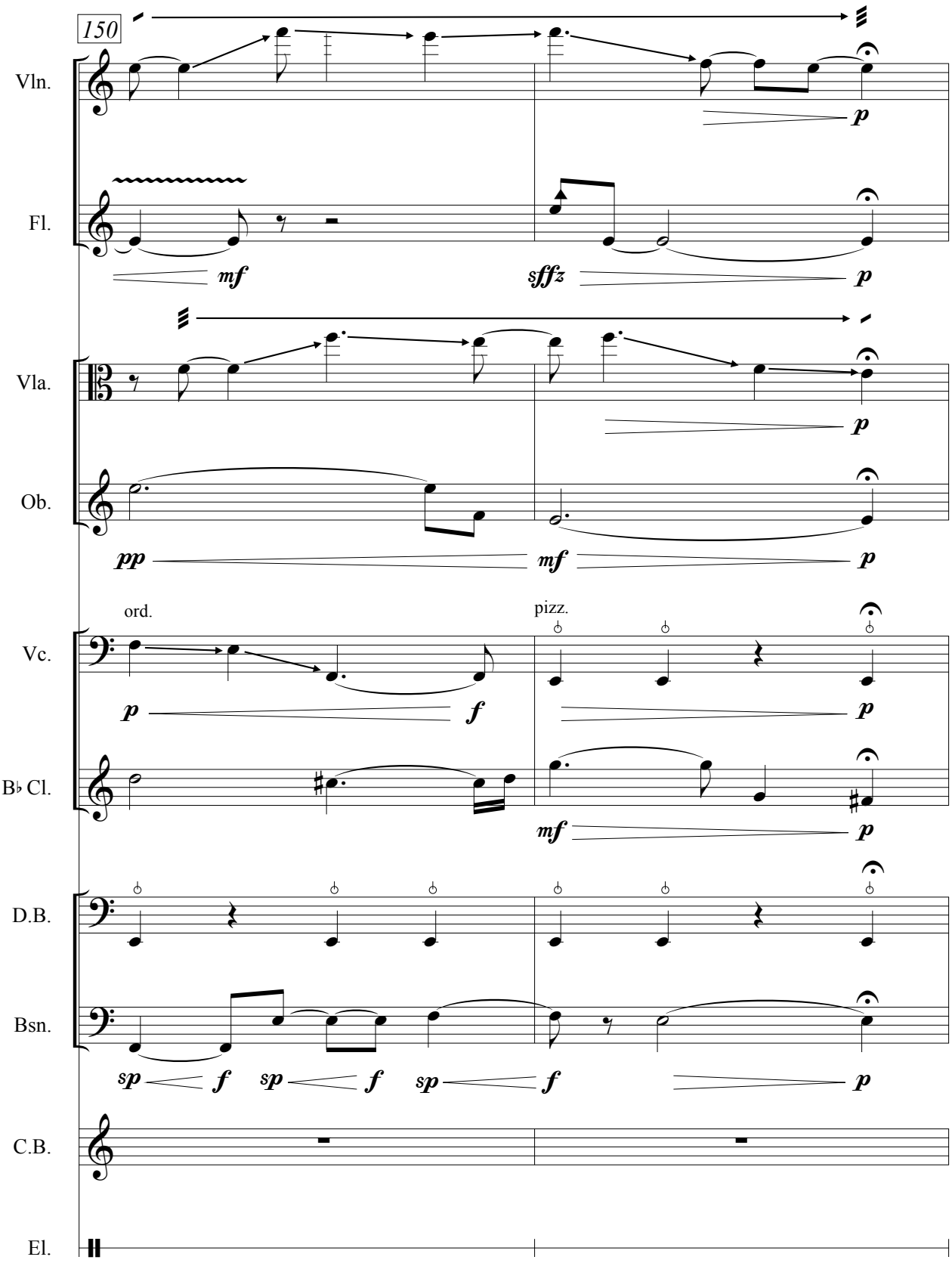

135
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
mp
mp
s.t.
mf
s.p.
pp

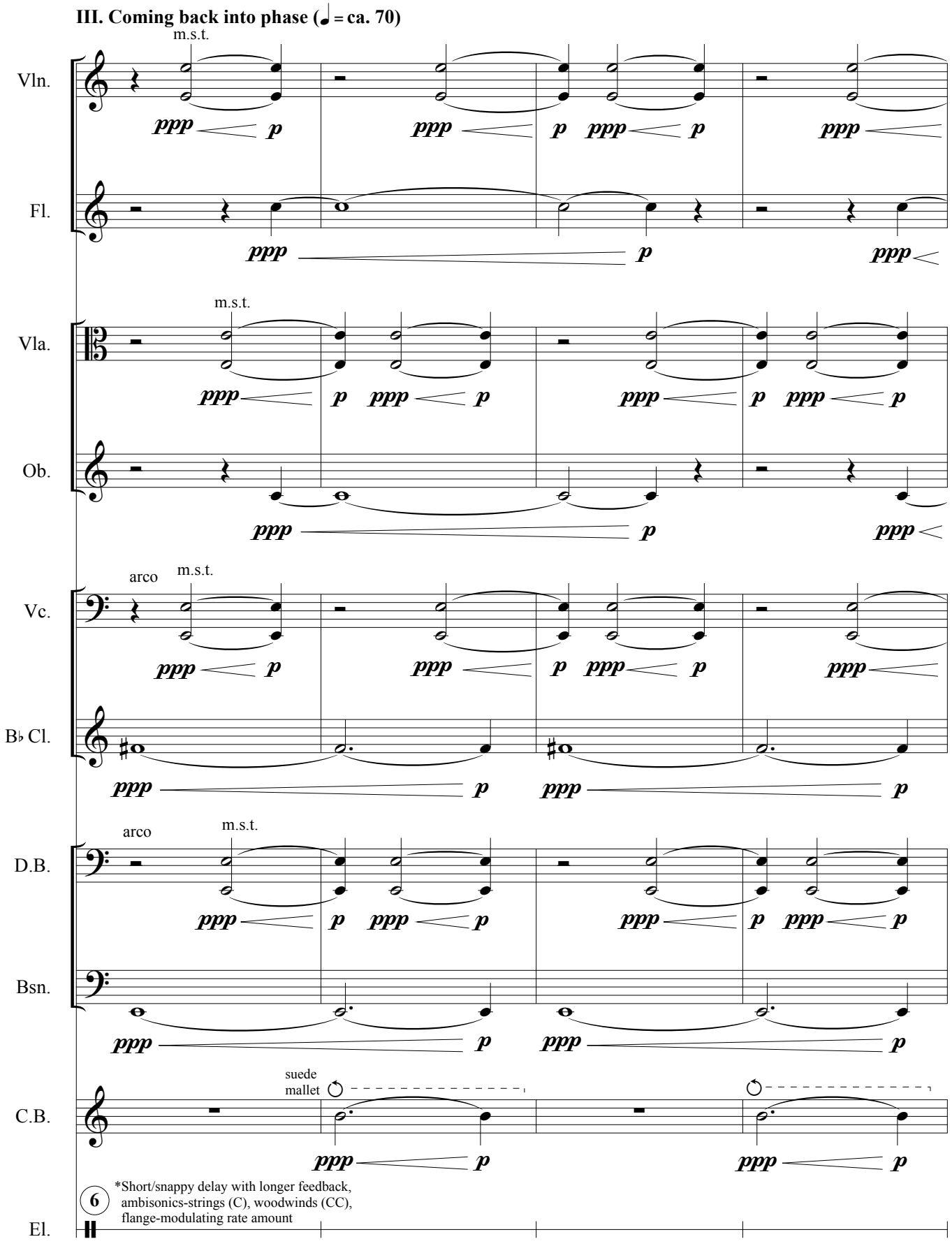

138
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
mp
pp
s.p.
mf
sfz
sp
5
*Ambisonics-woodwinds (CC)
strings (C)

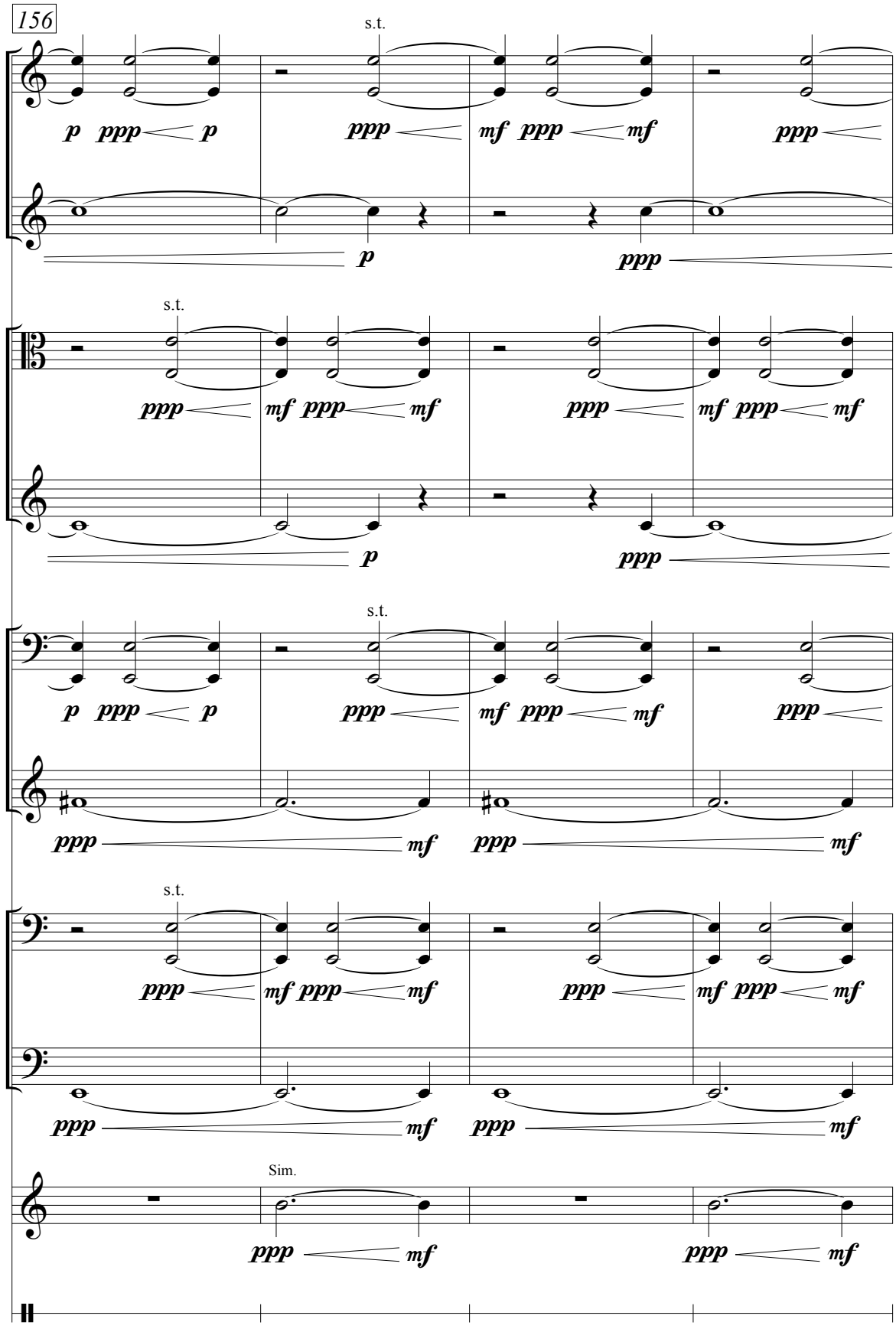

141
Vln.
Fl.
Vla.
Ob.
mf
pp
mf
s.p.
s.t.
s.p.
Vc.
pp
mf
pp
B♭ Cl.
p
sfz sp
mf
p
mf sp
mf
D.B.
Bsn.
sfz
pp
f
sp
sfz sp
sfz sp
sfz
pp
f
C.B.
El.

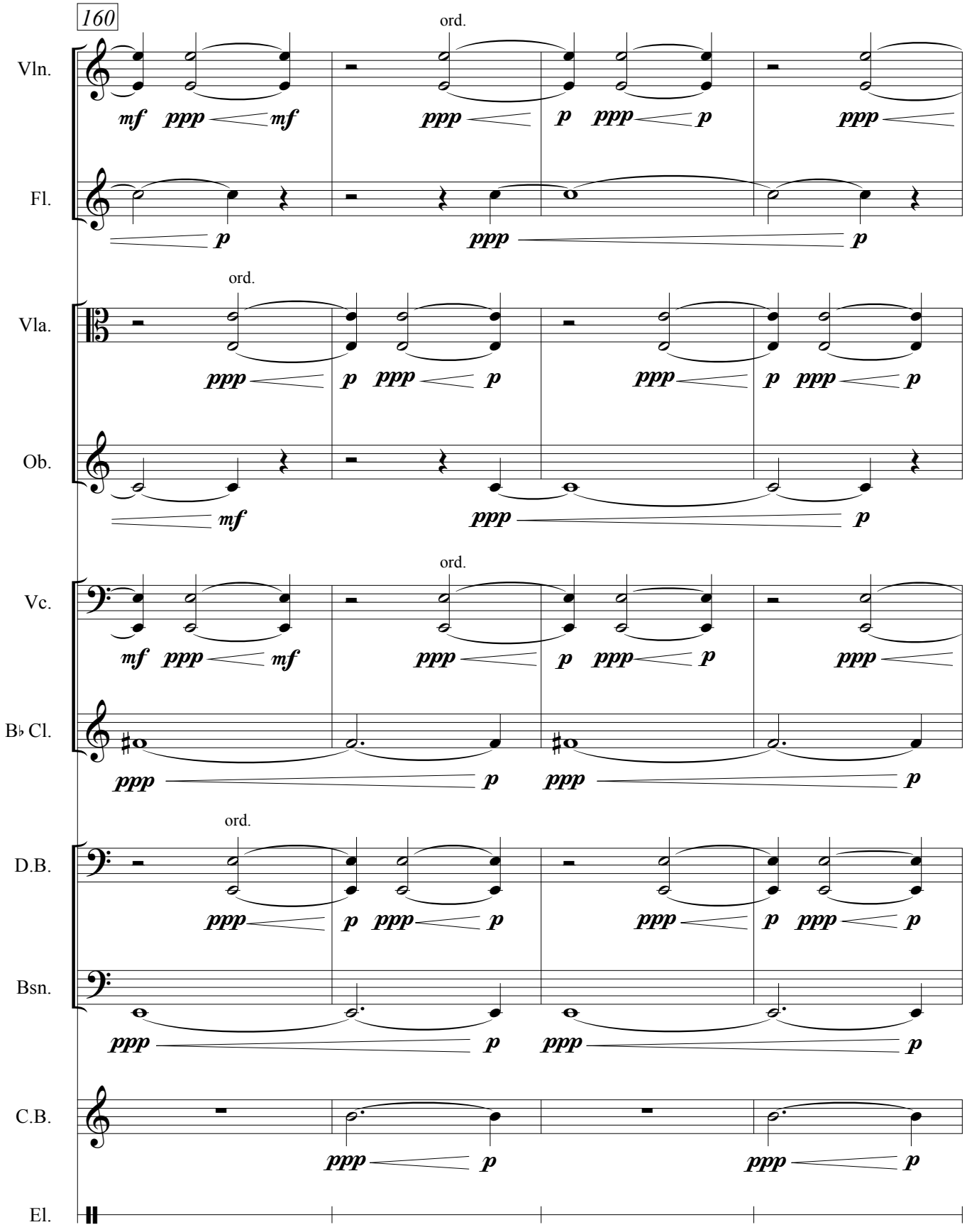

144
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.p.
s.t.
mp
mf
pp
sfz
sp
f

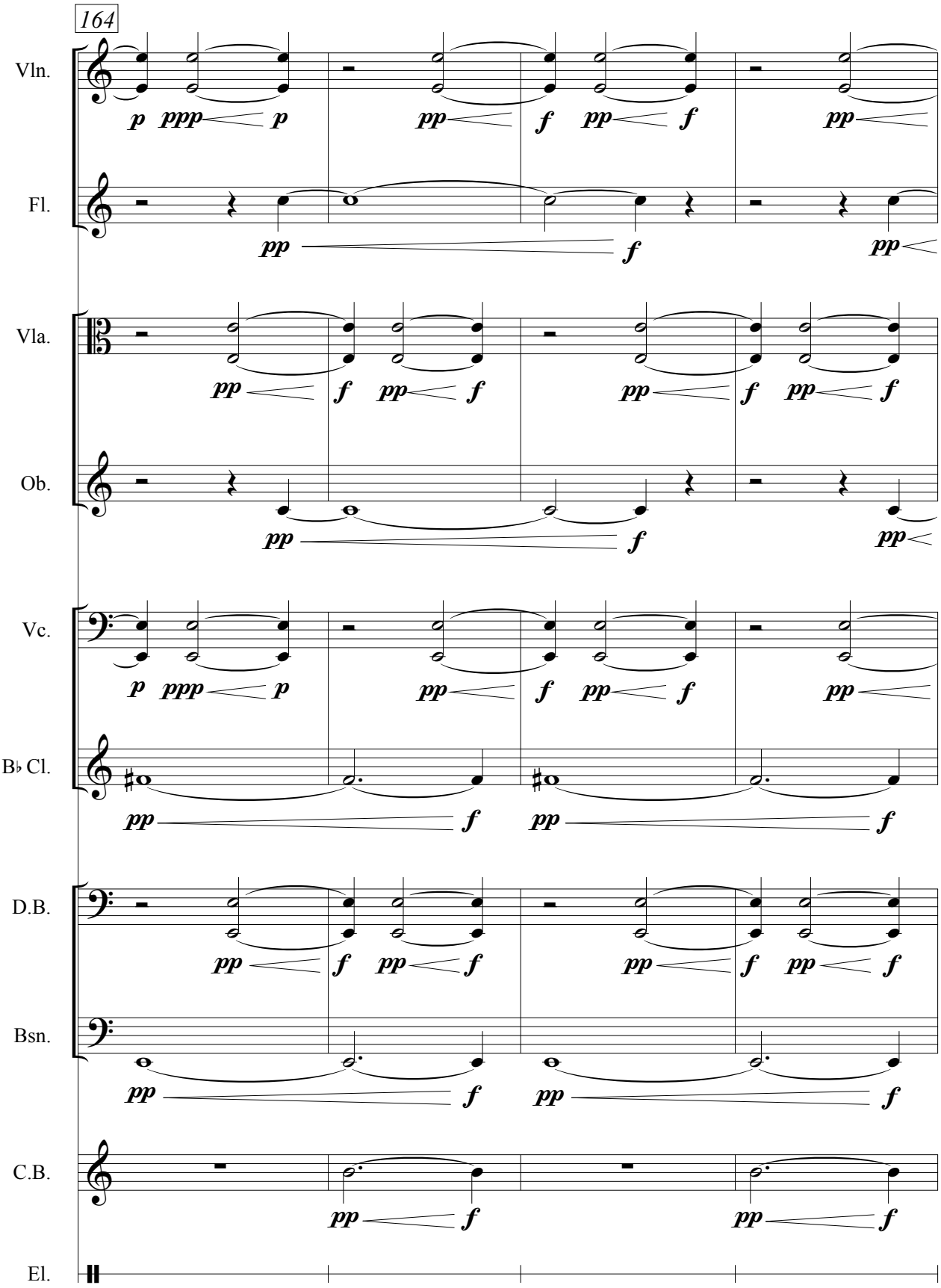

147
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
s.p.
Flz.
p
mf
mp
sffz
sp
pp
sfz
f
3

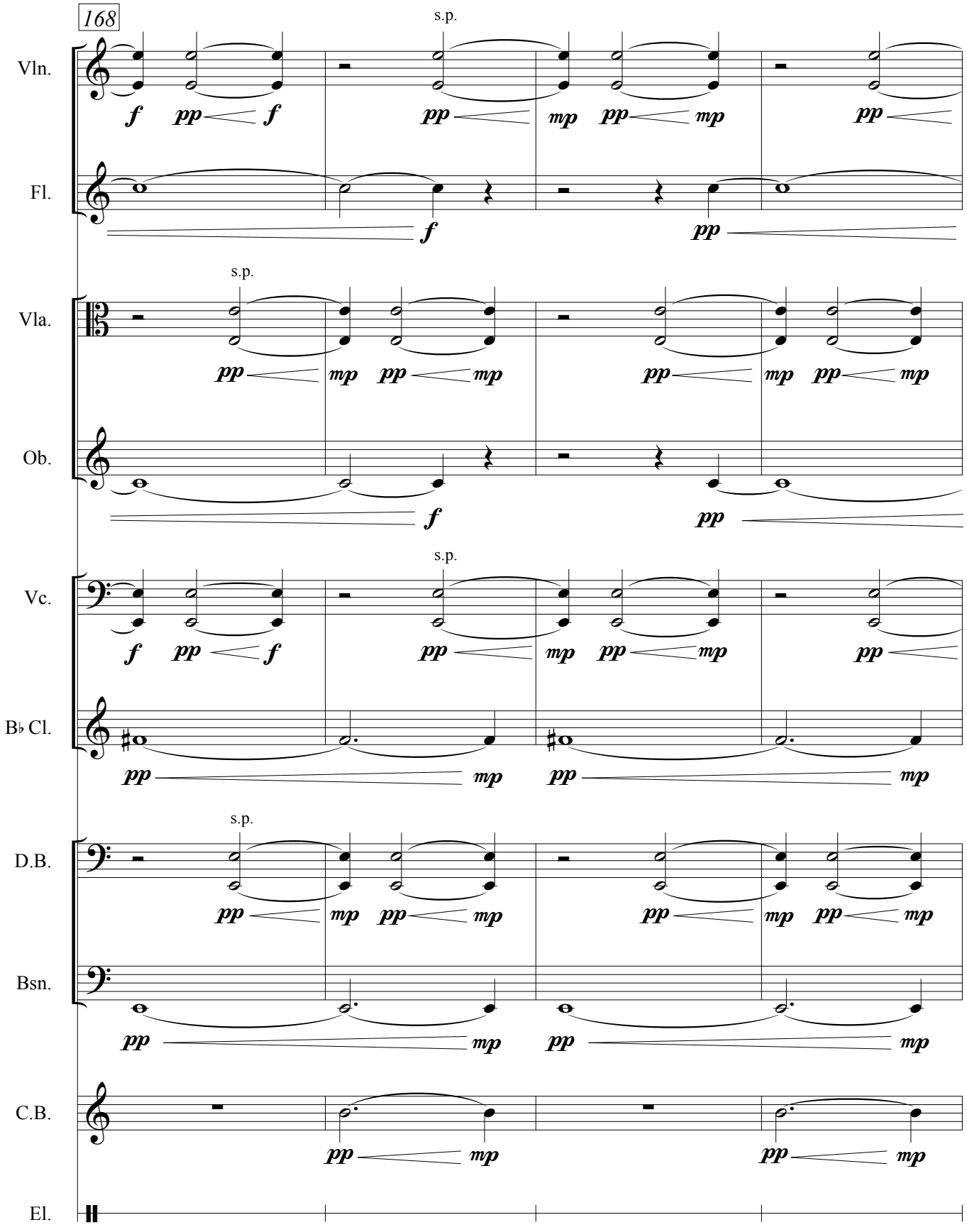

150
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
ord.
pizz.
p
mf
sfffz
pp
f
sp

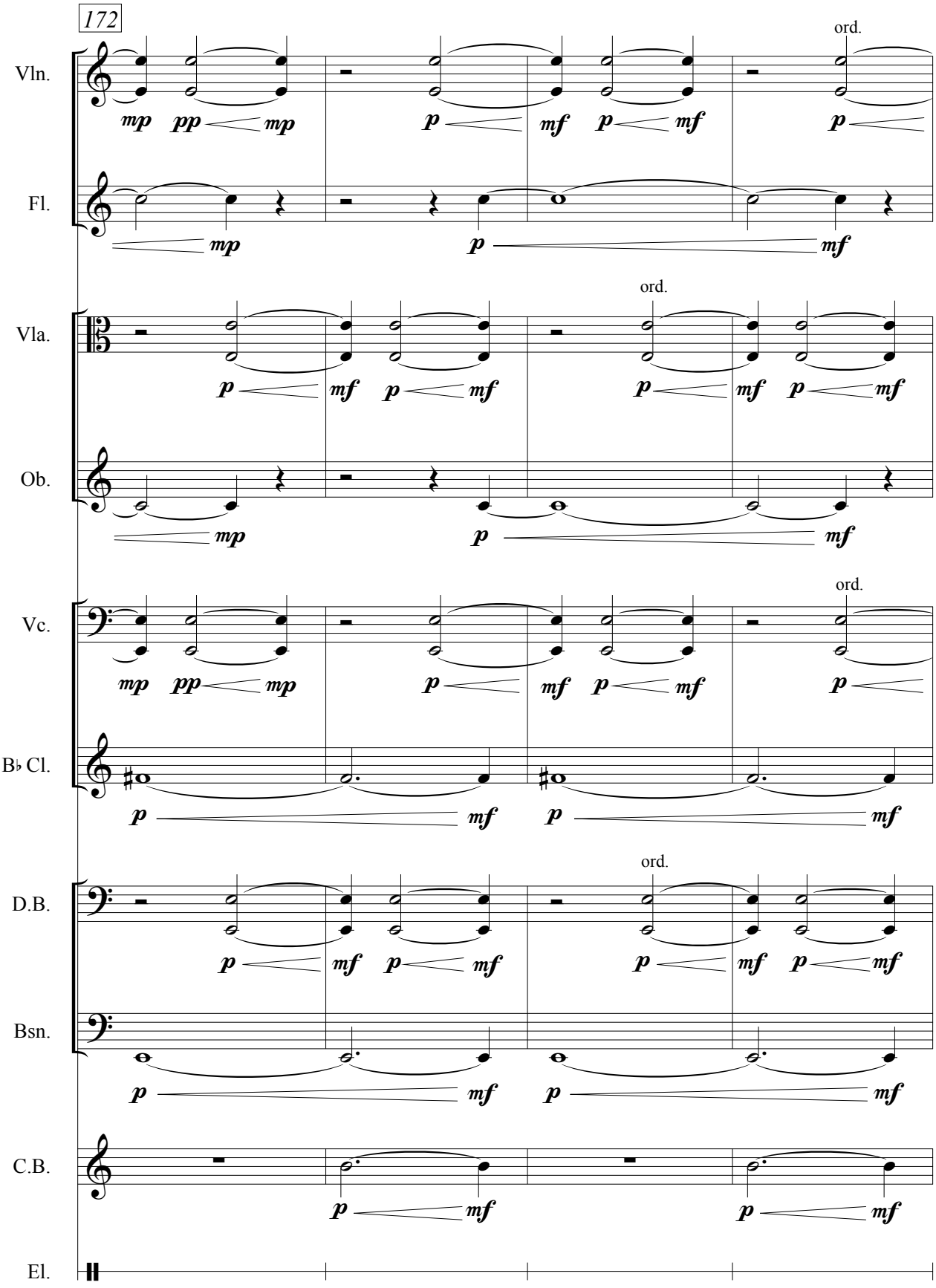

III. Coming back into phase (♩ = ca. 70)
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
m.s.t.
arco
suede mallet
ppp
p
6
*Short/snappy delay with longer feedback, ambisonics-strings (C), woodwinds (CC), flange-modulating rate amount

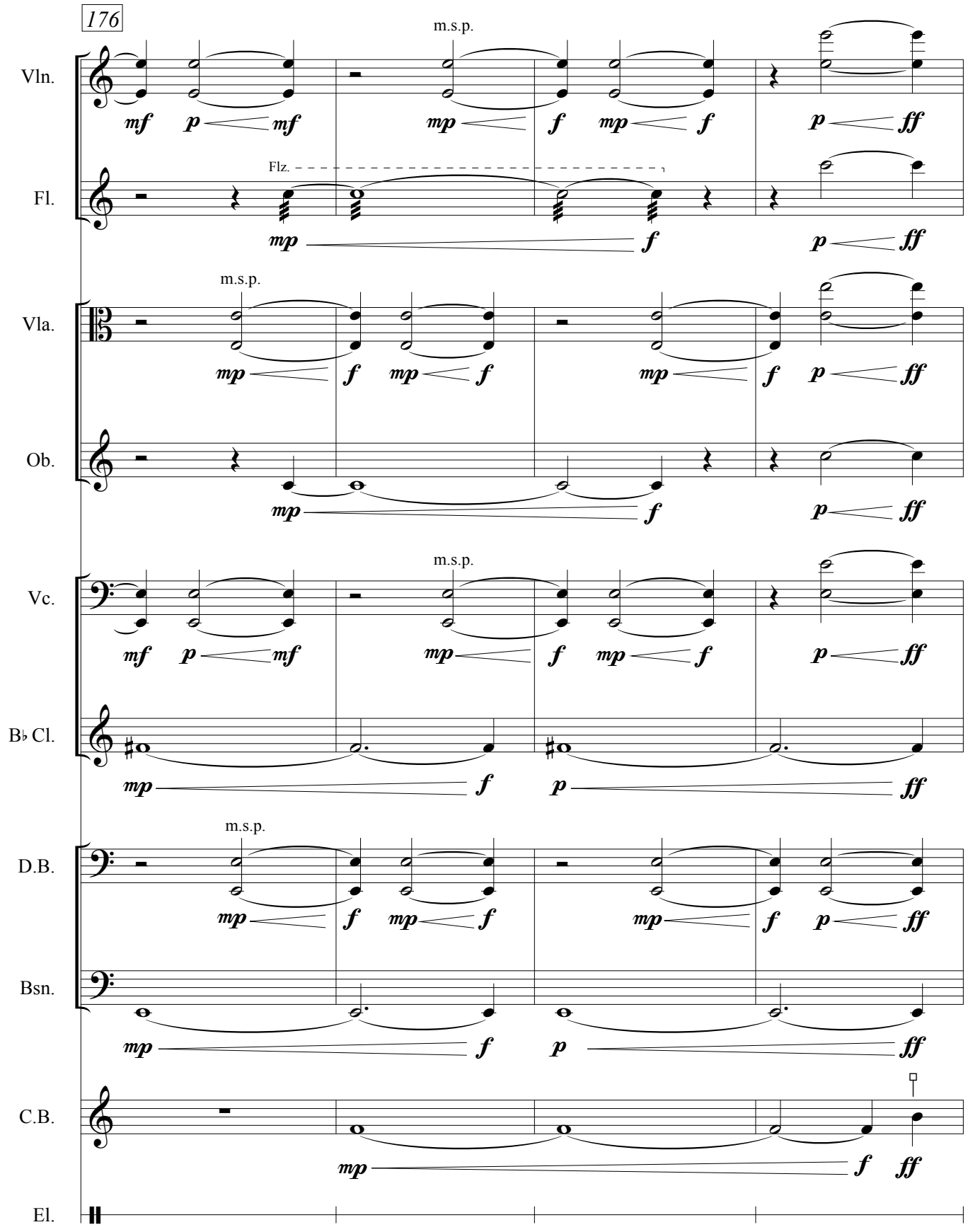

156
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
Sim.
p ppp p
ppp
mf ppp mf
p
ppp

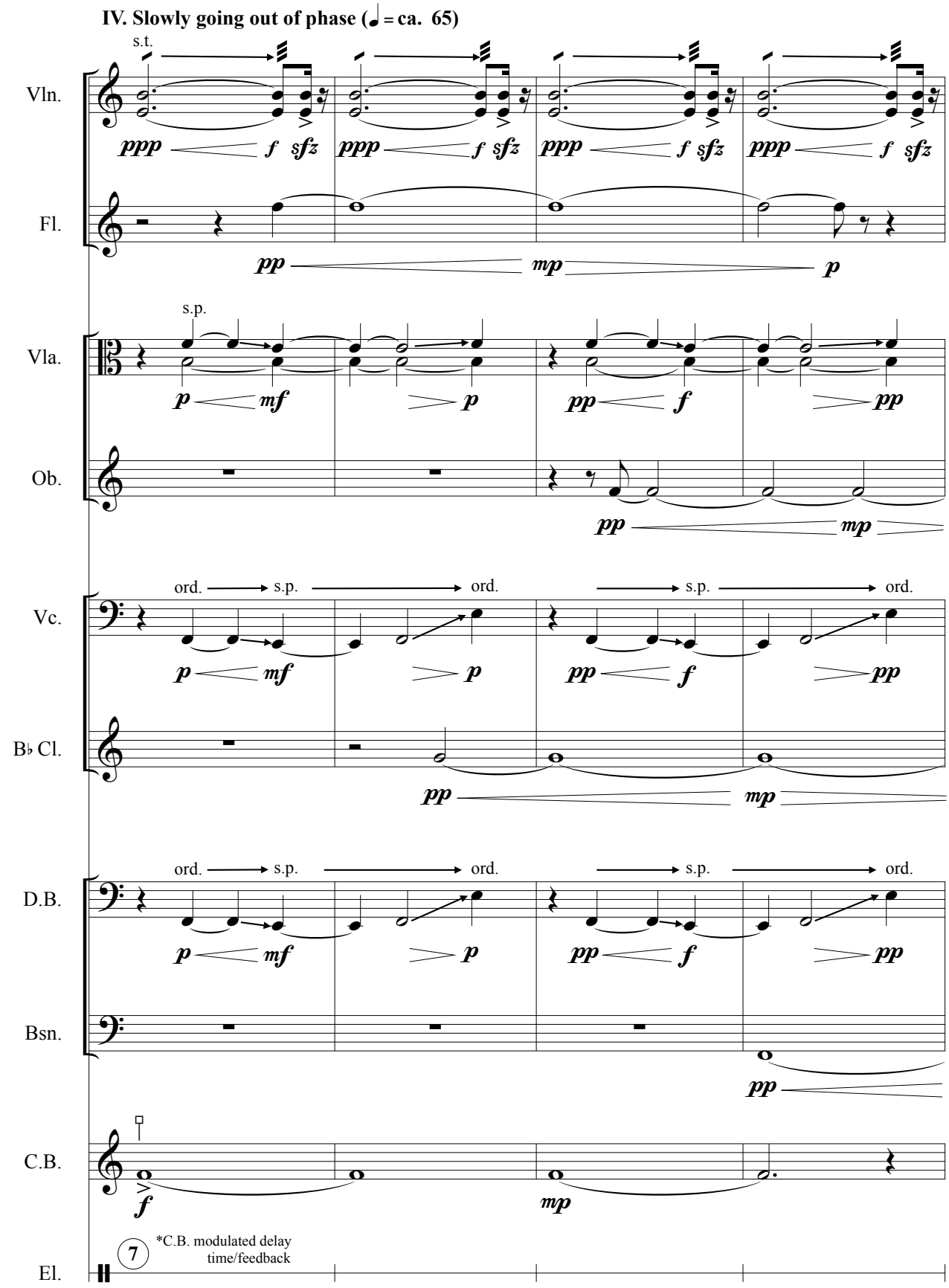

160
ord.
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.

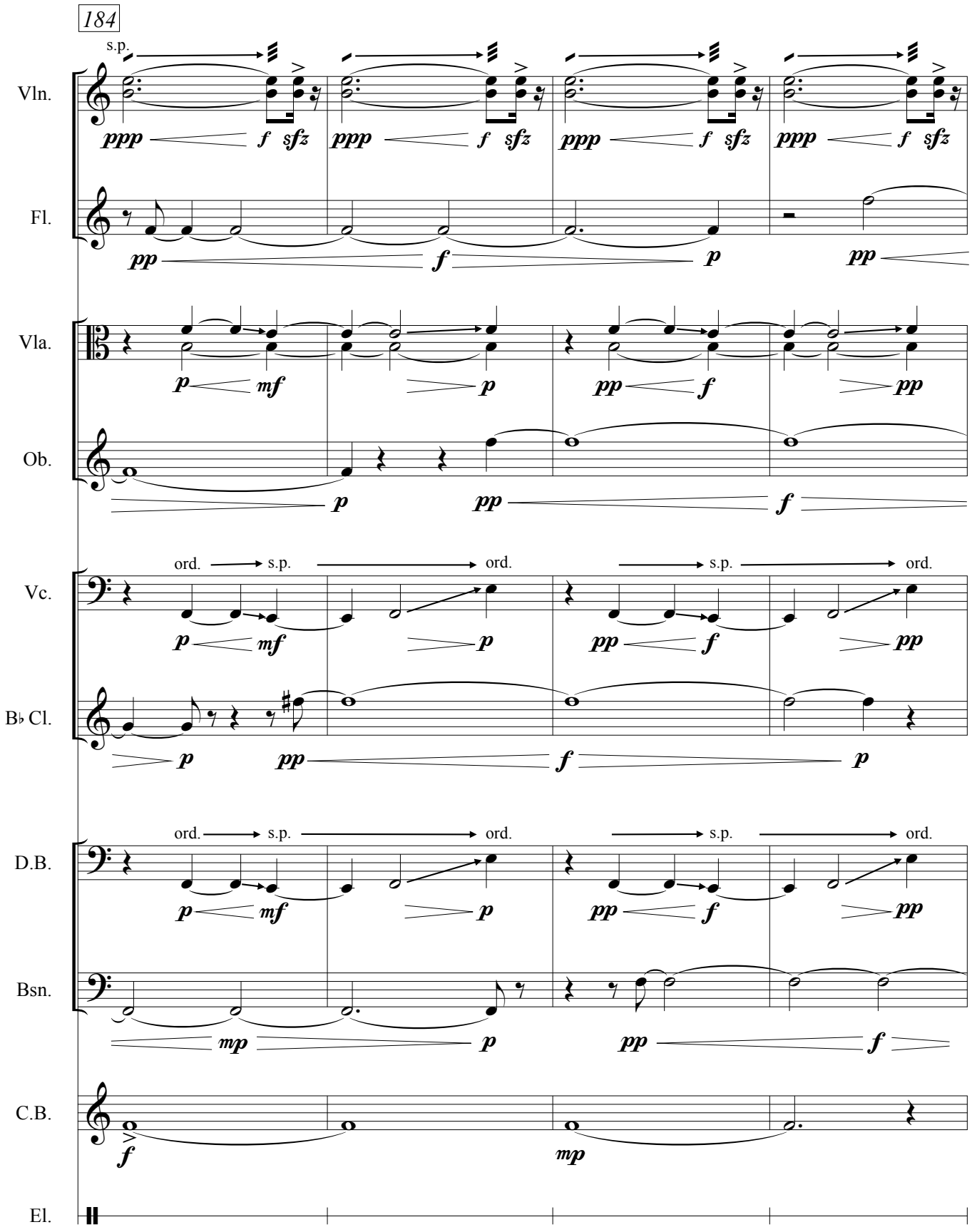

164
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.

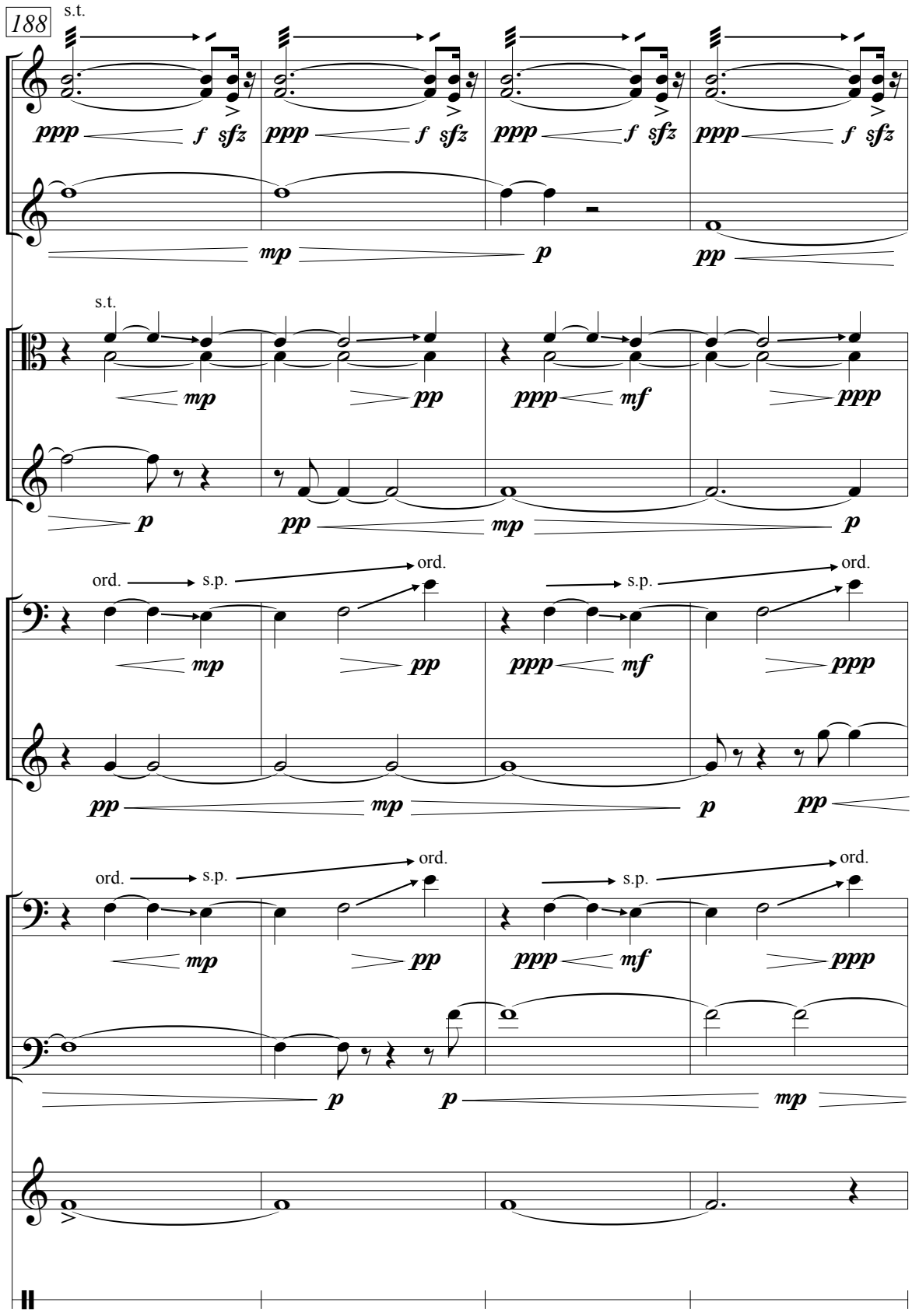

168
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.p.
f
pp
mp

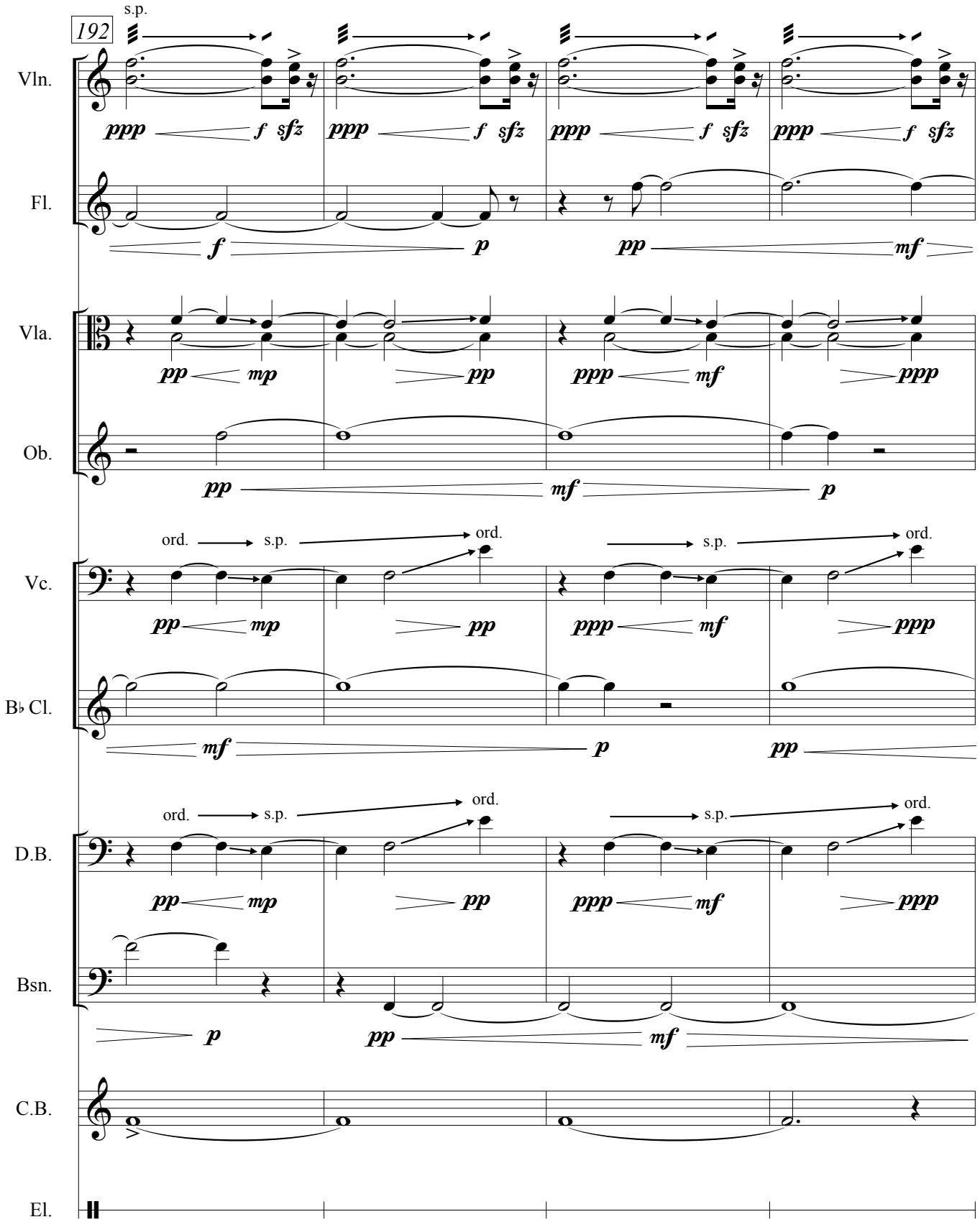

172
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
ord.
mp pp mp p mf p mf p
mp p mf
p mf p mf p mf p mf
mp p mf
mp pp mp p mf p mf p
p mf p mf
p mf p mf p mf p mf

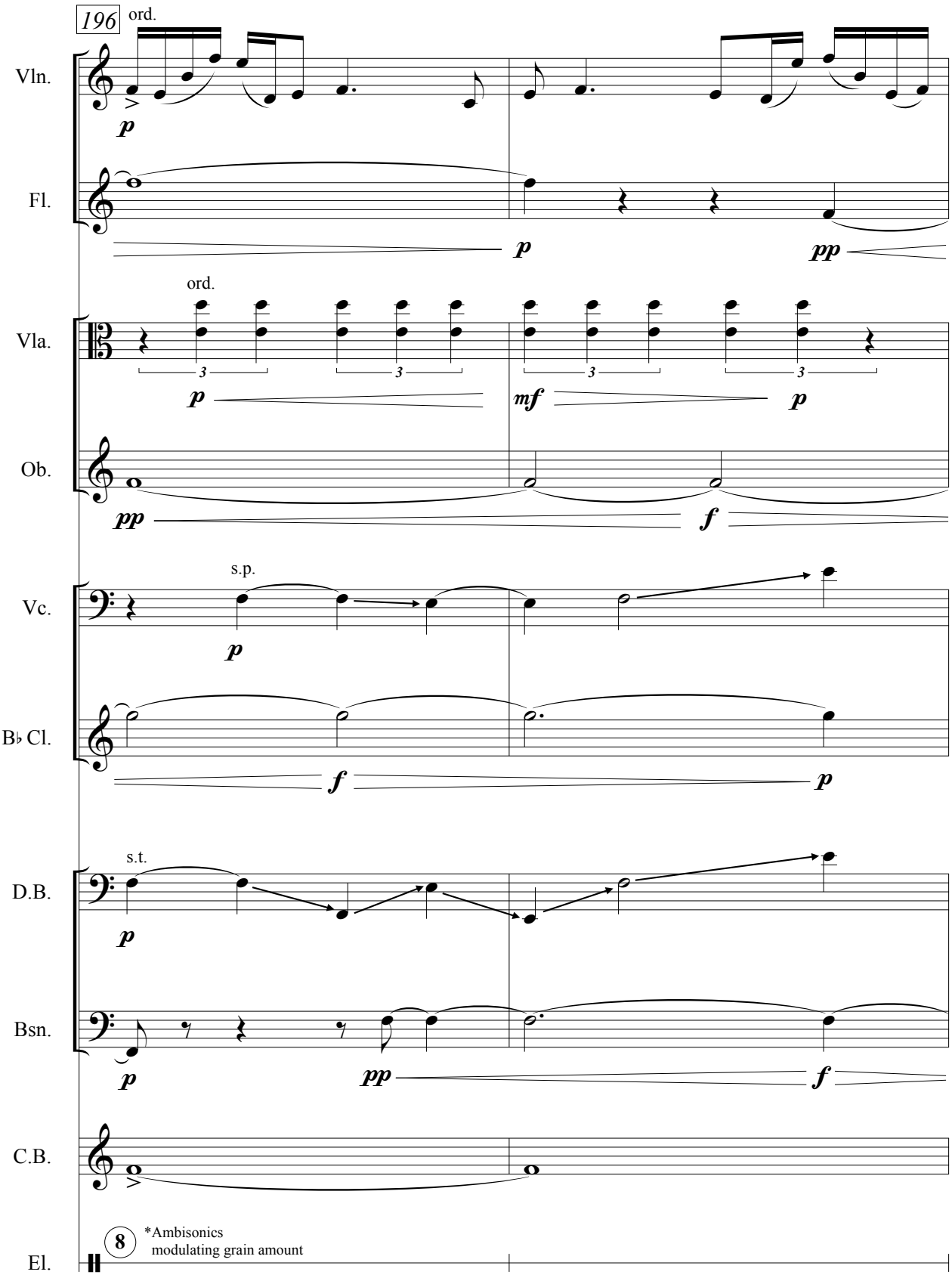

176
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
m.s.p.
Flz.
mf
p
mp
f
ff

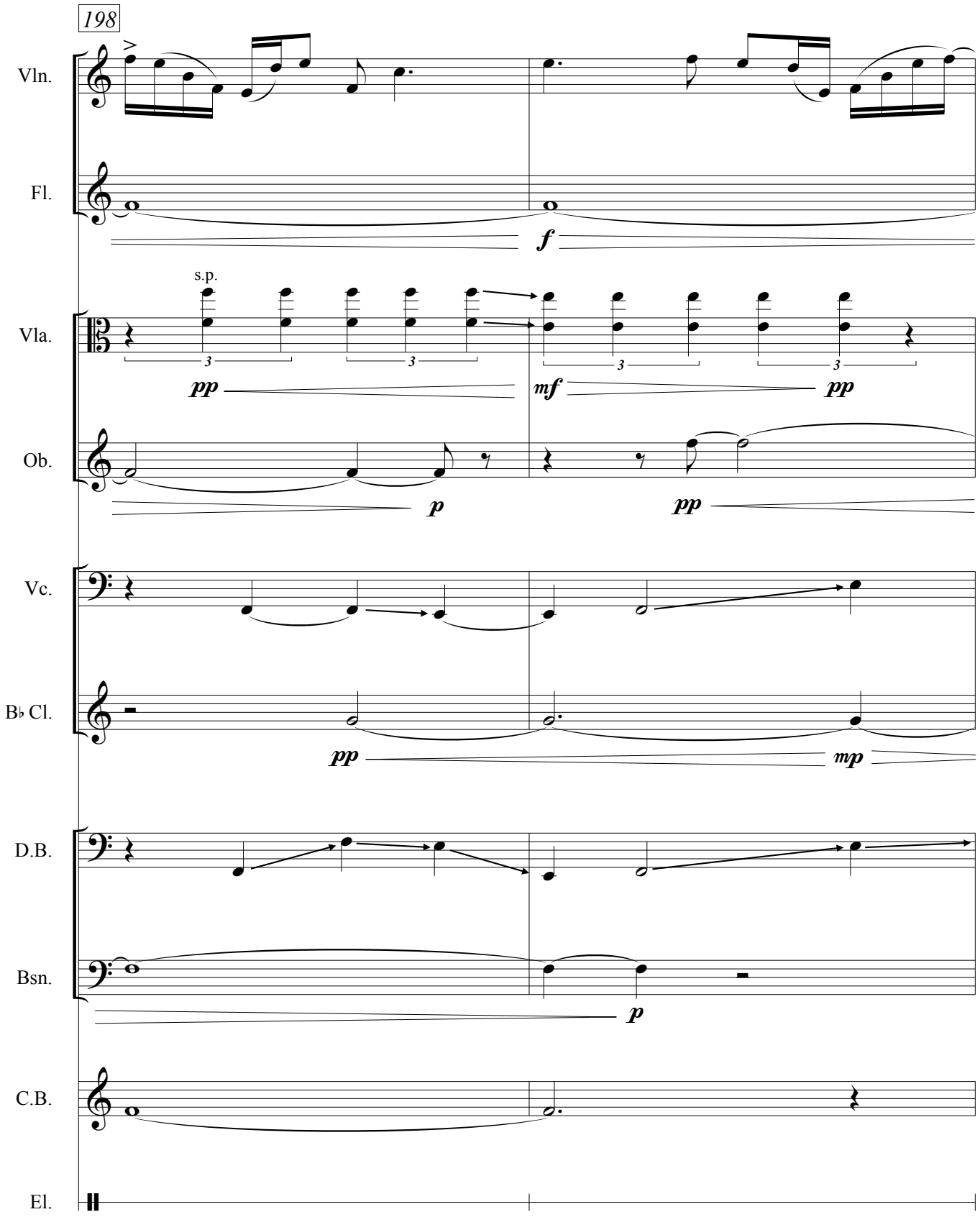

IV. Slowly going out of phase (♩ = ca. 65)
s.t.
Vln.
ppp f sfz
Fl.
pp mp p
s.p.
Vla.
p mf p
pp f pp
Ob.
pp mp
ord. s.p. ord.
Vc.
p mf p
pp f pp
B♭ Cl.
pp mp
D.B.
Bsn.
C.B.
f
mp
7
*C.B. modulated delay time/feedback
El.

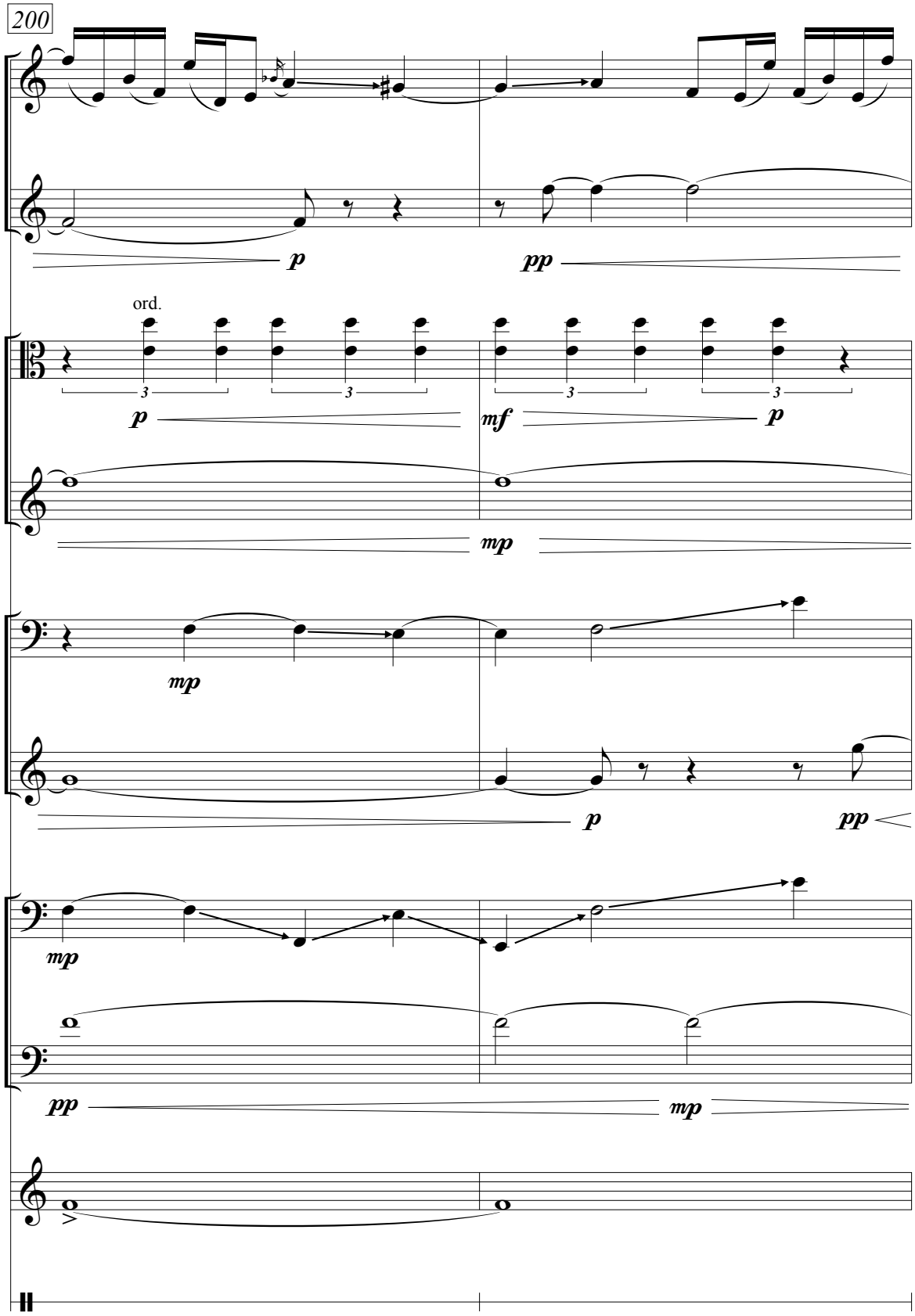

184
s.p.
Vln.
ppp f sfz
Fl.
pp f p pp
Vla.
p mf p pp f pp
Ob.
p pp f
Vc.
ord. s.p. ord. s.p. ord.
p mf p pp f pp
B♭ Cl.
p pp f p
D.B.
ord. s.p. ord. s.p. ord.
p mf p pp f pp
Bsn.
mp p pp f
C.B.
f mp
El.

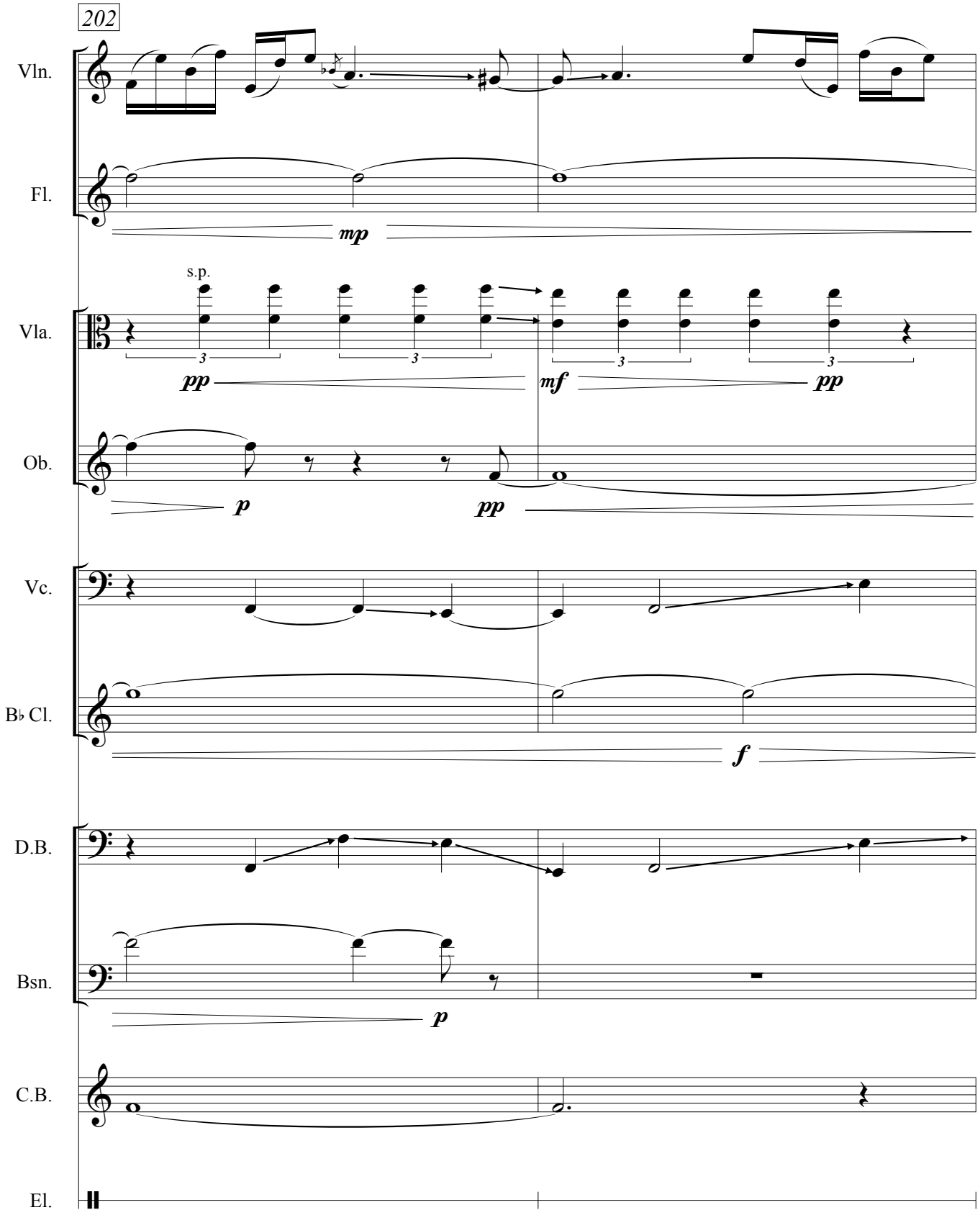

188
s.t.
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
ord.
s.p.

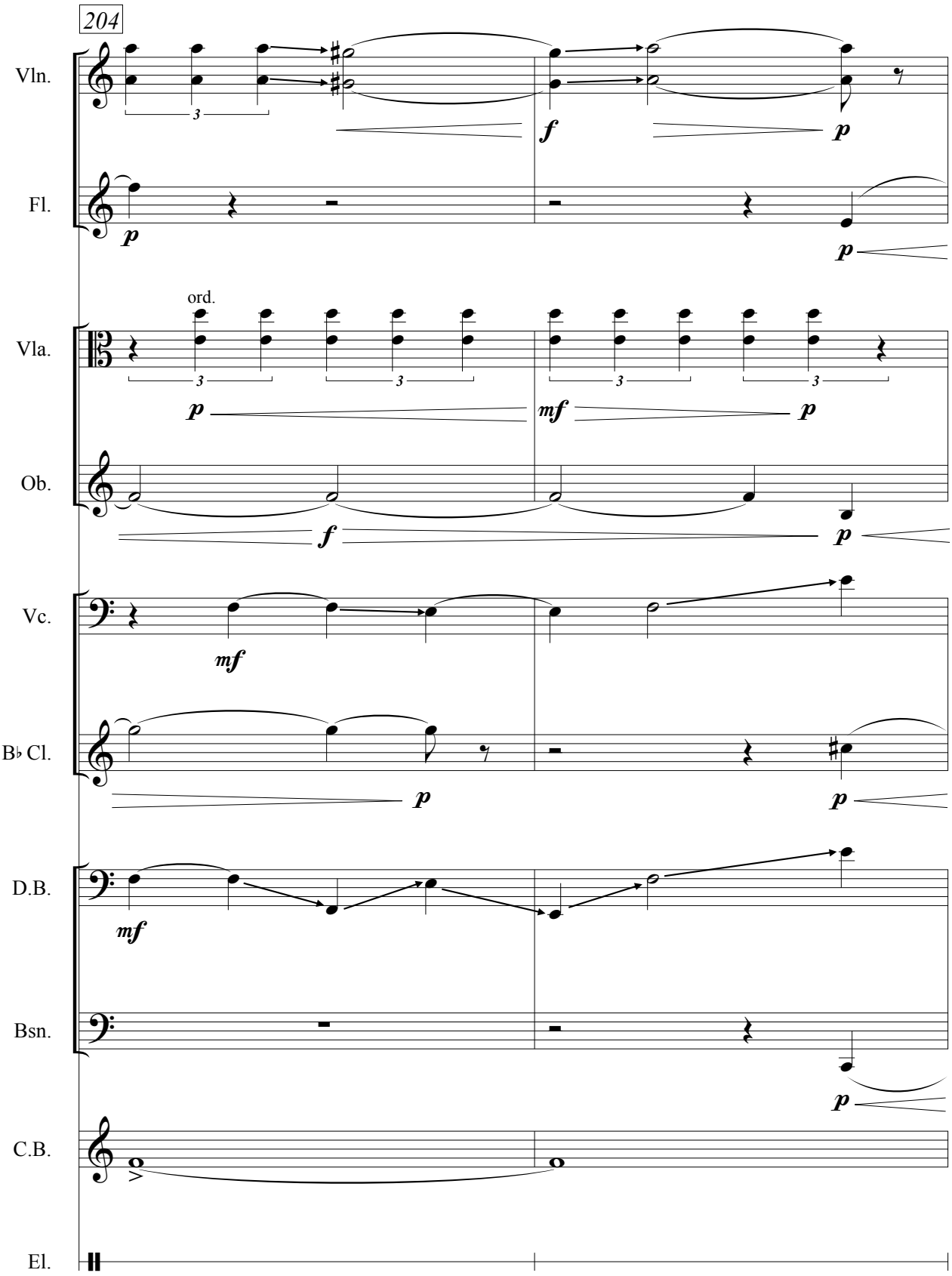

192
s.p.
Vln.
ppp f sfz
Fl.
f p
pp mf
Vla.
pp mp pp
ppp mf ppp
Ob.
pp mf p
ord. s.p. ord.
Vc.
pp mp pp
ppp mf ppp
B♭ Cl.
mf p
pp
D.B.
Bsn.
p
pp mf
C.B.
El.

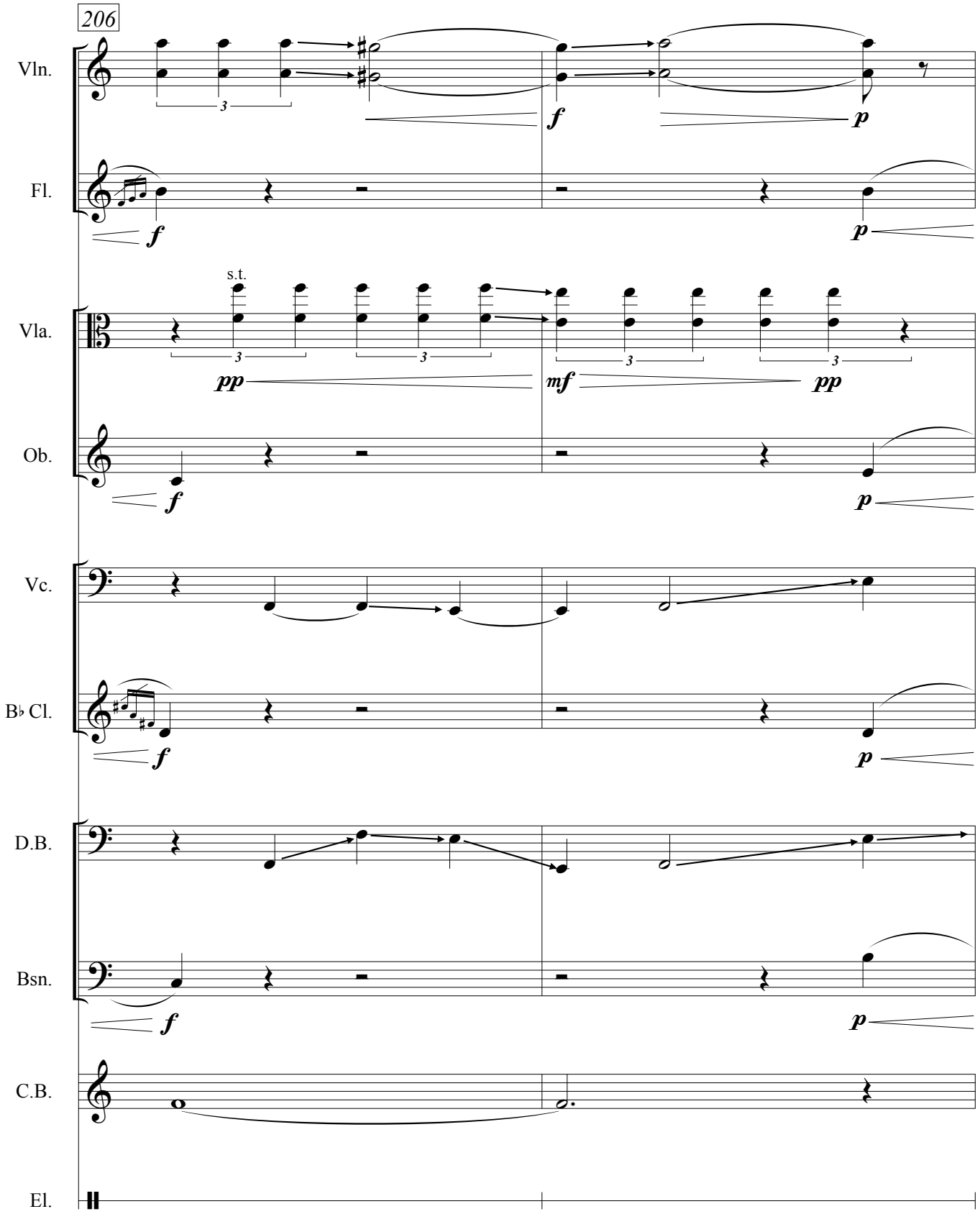

196
ord.
Vln.
p
Fl.
p
pp
ord.
Vla.
3
p
mf
p
Ob.
pp
f
s.p.
Vc.
p
B♭ Cl.
f
p
s.t.
D.B.
p
Bsn.
p
pp
f
C.B.
8
*Ambisonics
modulating grain amount
El.

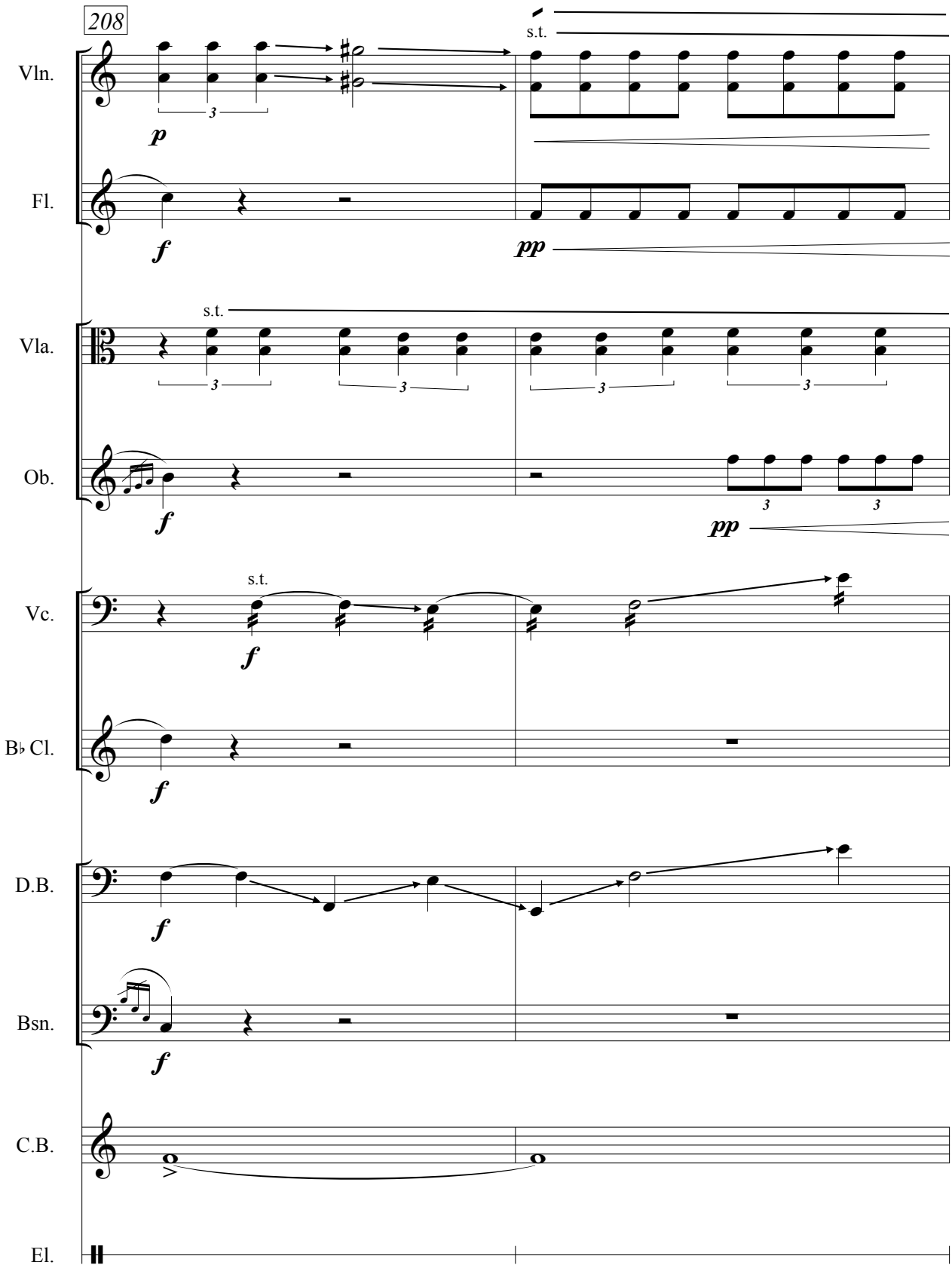

198
Vln.
Fl.
f
s.p.
Vla.
pp
mf
pp
Ob.
p
pp
Vc.
B♭ Cl.
pp
mp
D.B.
Bsn.
p
C.B.
El.

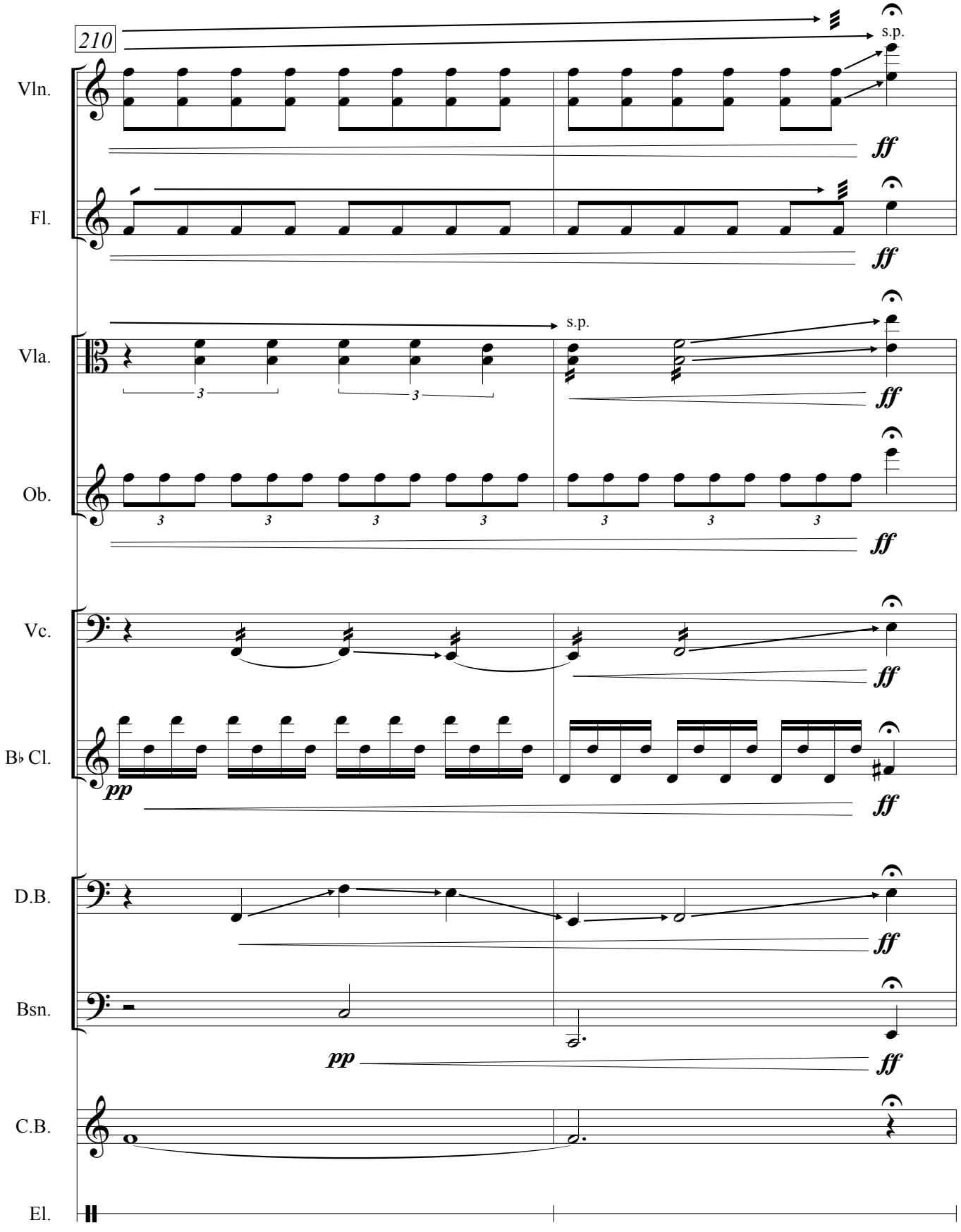

200
Vln.
Fl.
p
pp
ord.
Vla.
3
3
3
3
p
mf
p
Ob.
mp
Vc.
mp
B♭ Cl.
p
pp
D.B.
mp
Bsn.
pp
mp
C.B.
El.


202
Vln.
Fl.
mp
s.p.
Vla.
pp
mf
pp
Ob.
p
pp
Vc.
B♭ Cl.
f
D.B.
Bsn.
p
C.B.
El.

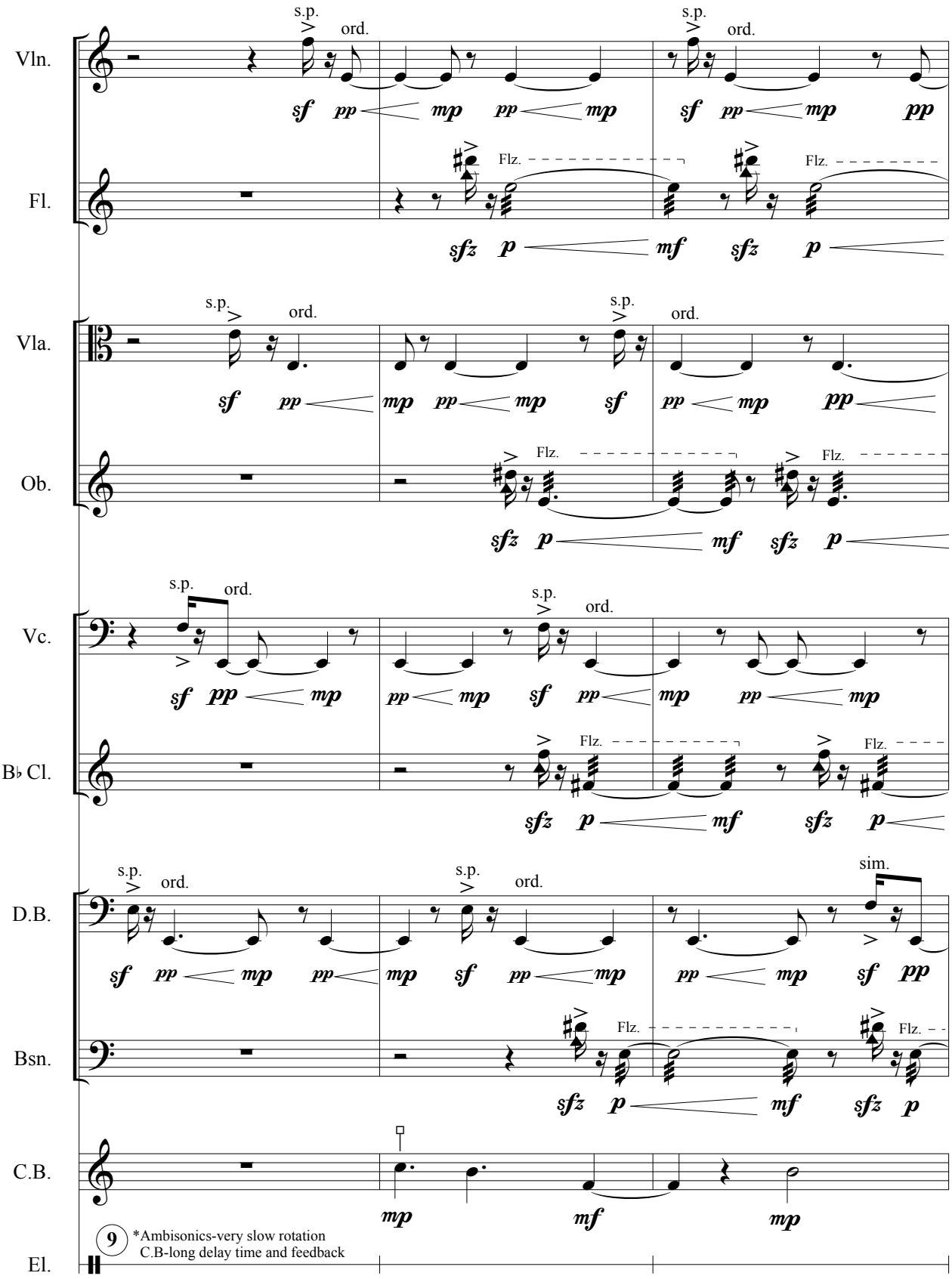

204
Vln.
Fl.
Vla.
ord.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
f
p
mf

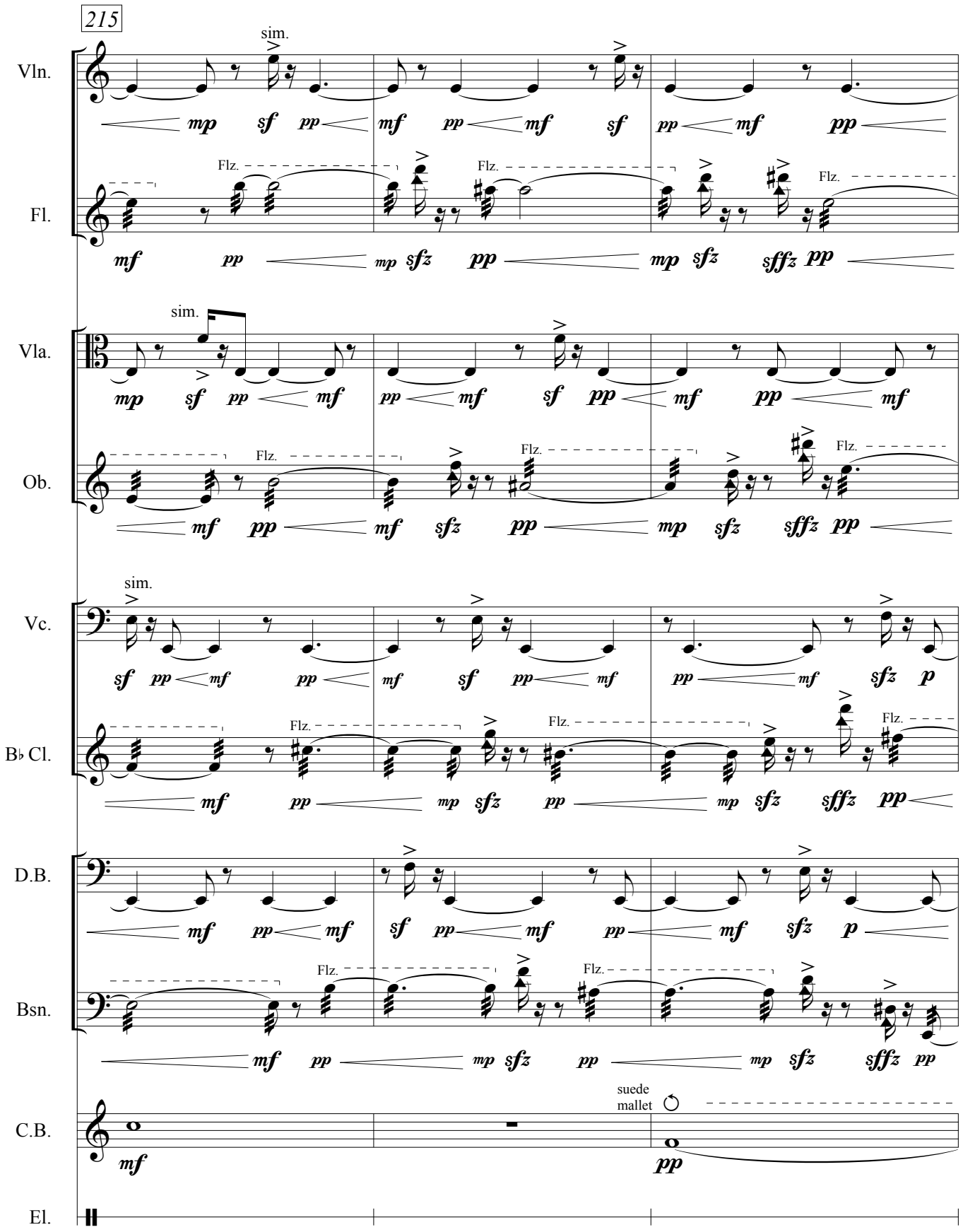

206
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
f
p
pp
mf

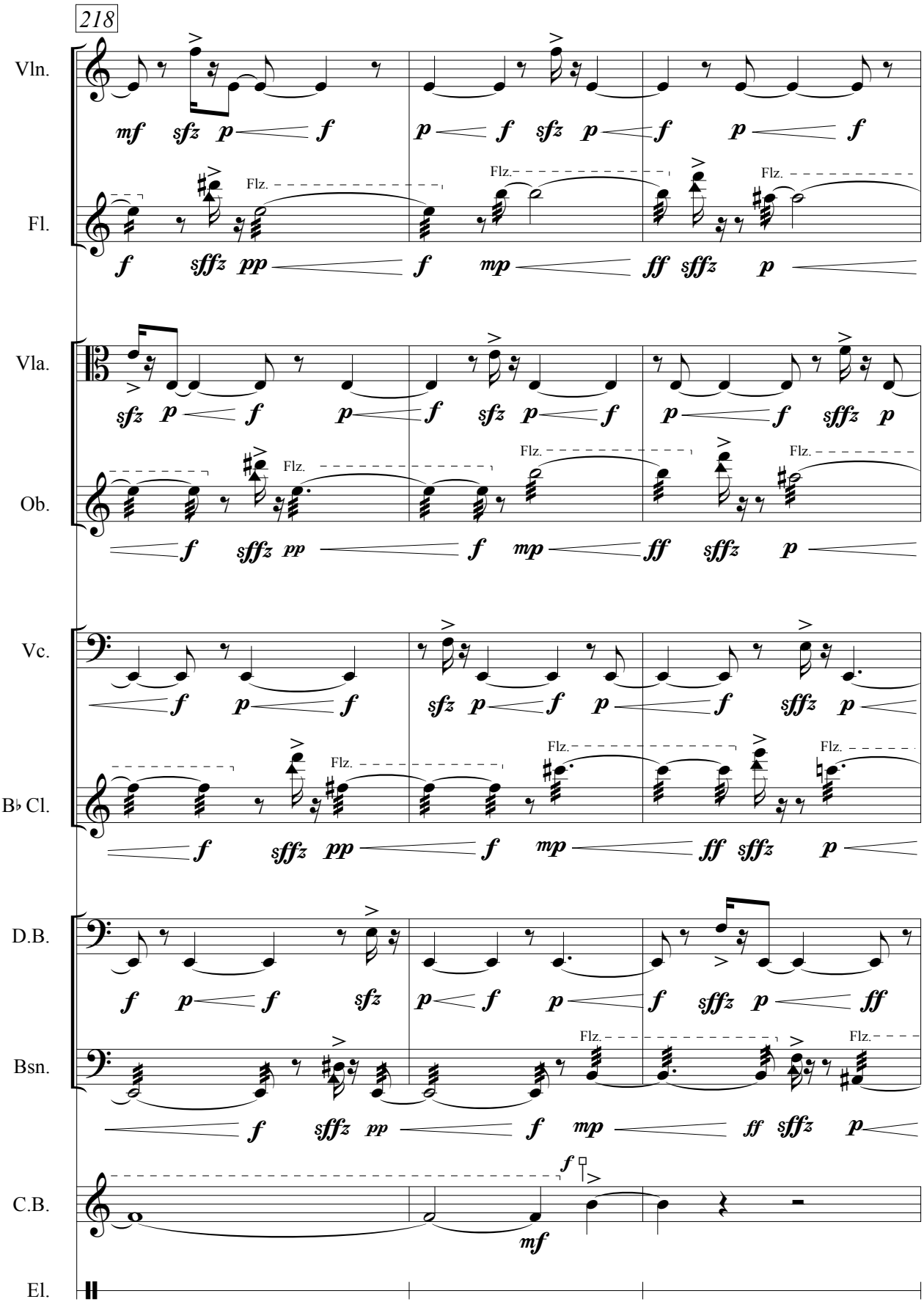

208
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
p
f
pp
3

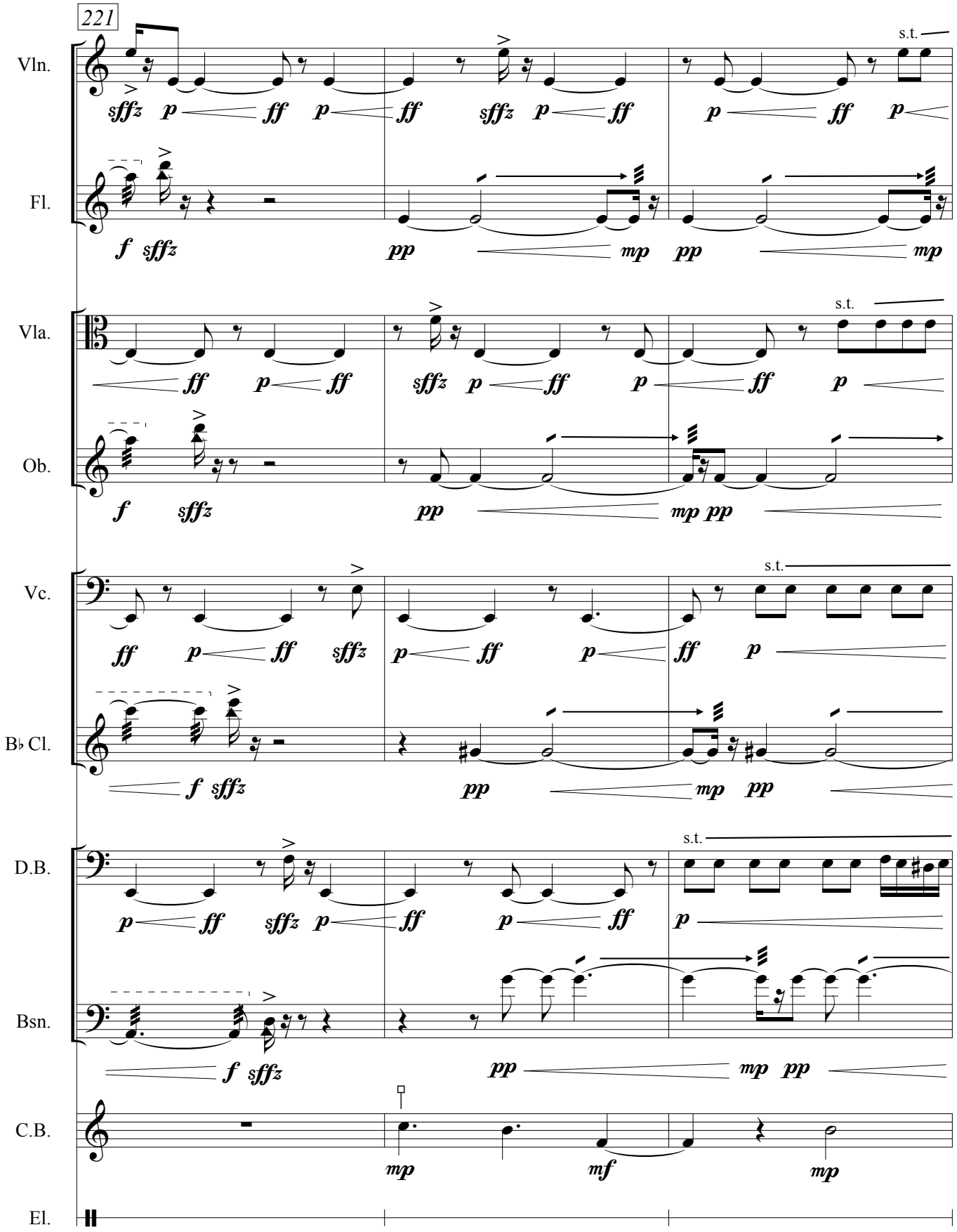

210
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.p.
s.p.
ff
pp
3

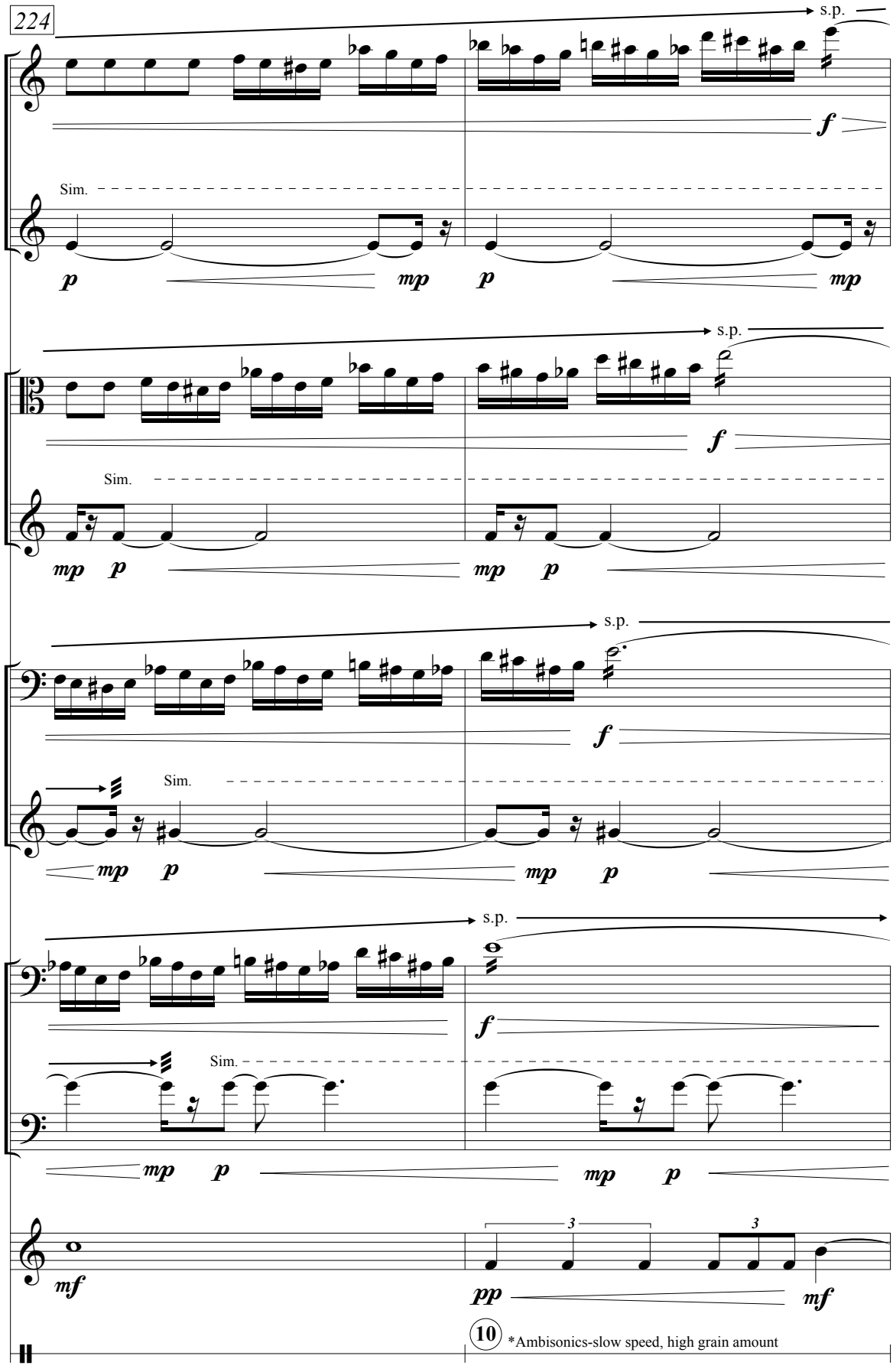
V. Terminally ouf of phase (♩ = ca. 70)

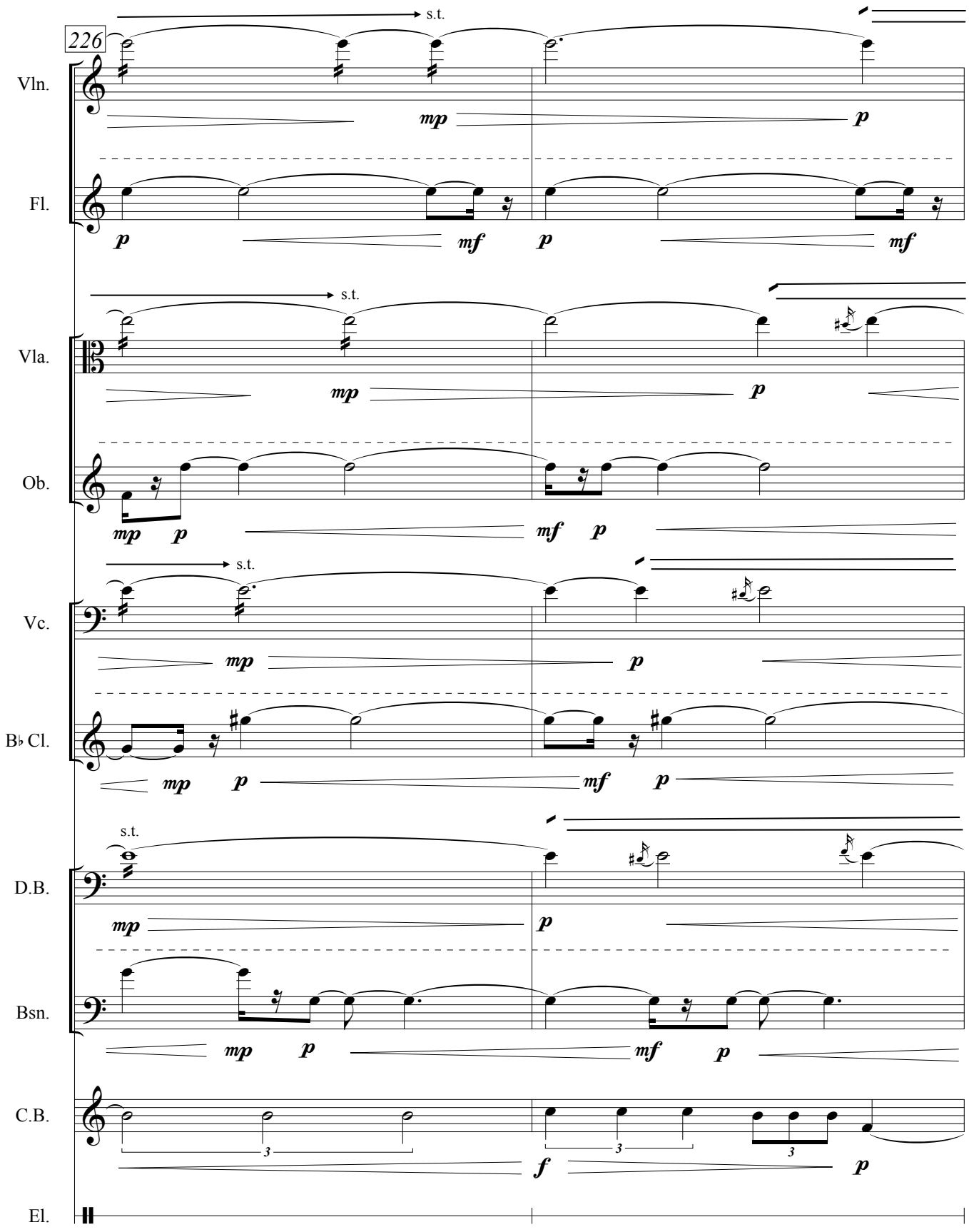


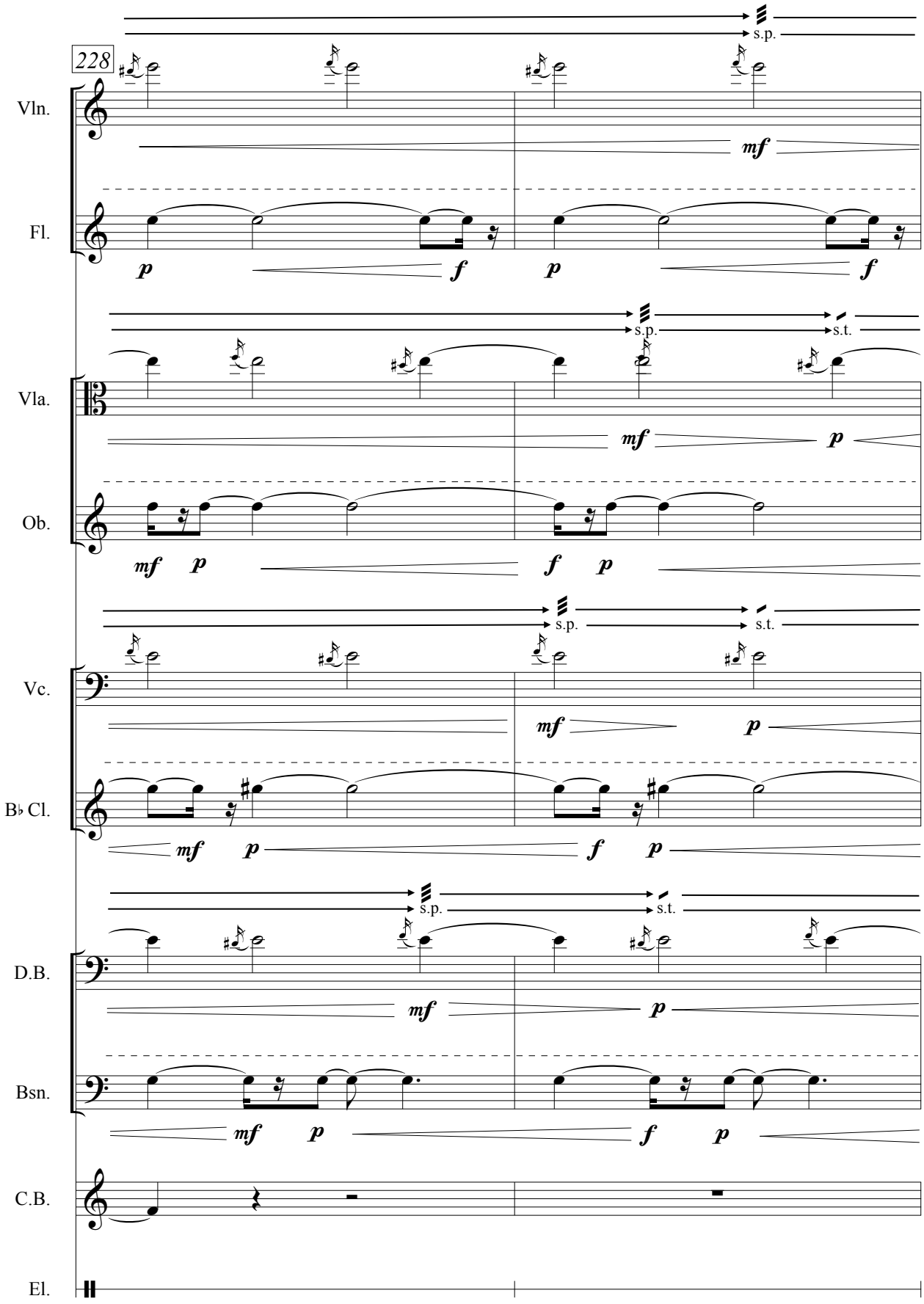

215
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
sim.
Flz.
suede mallet

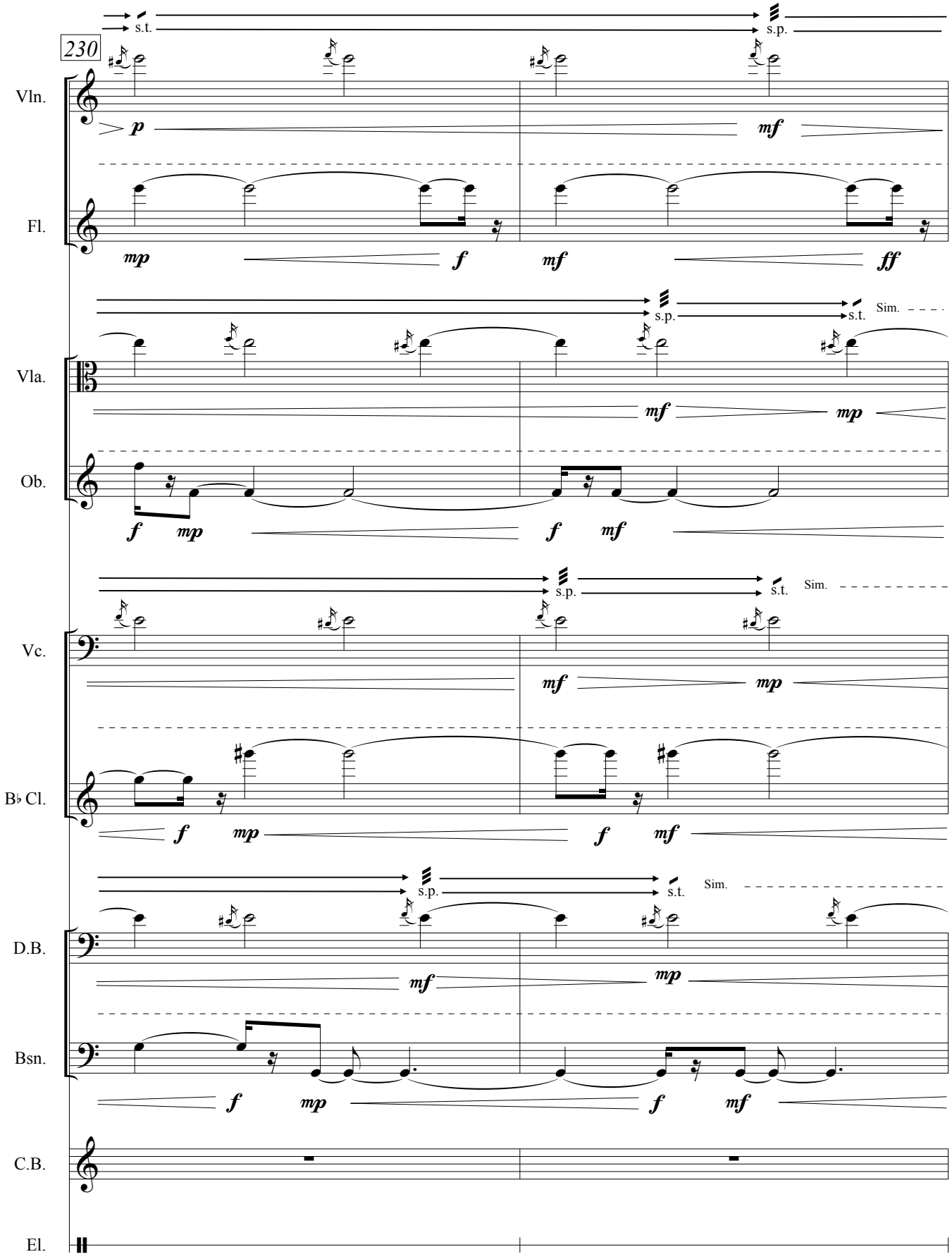

218
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
Flz.

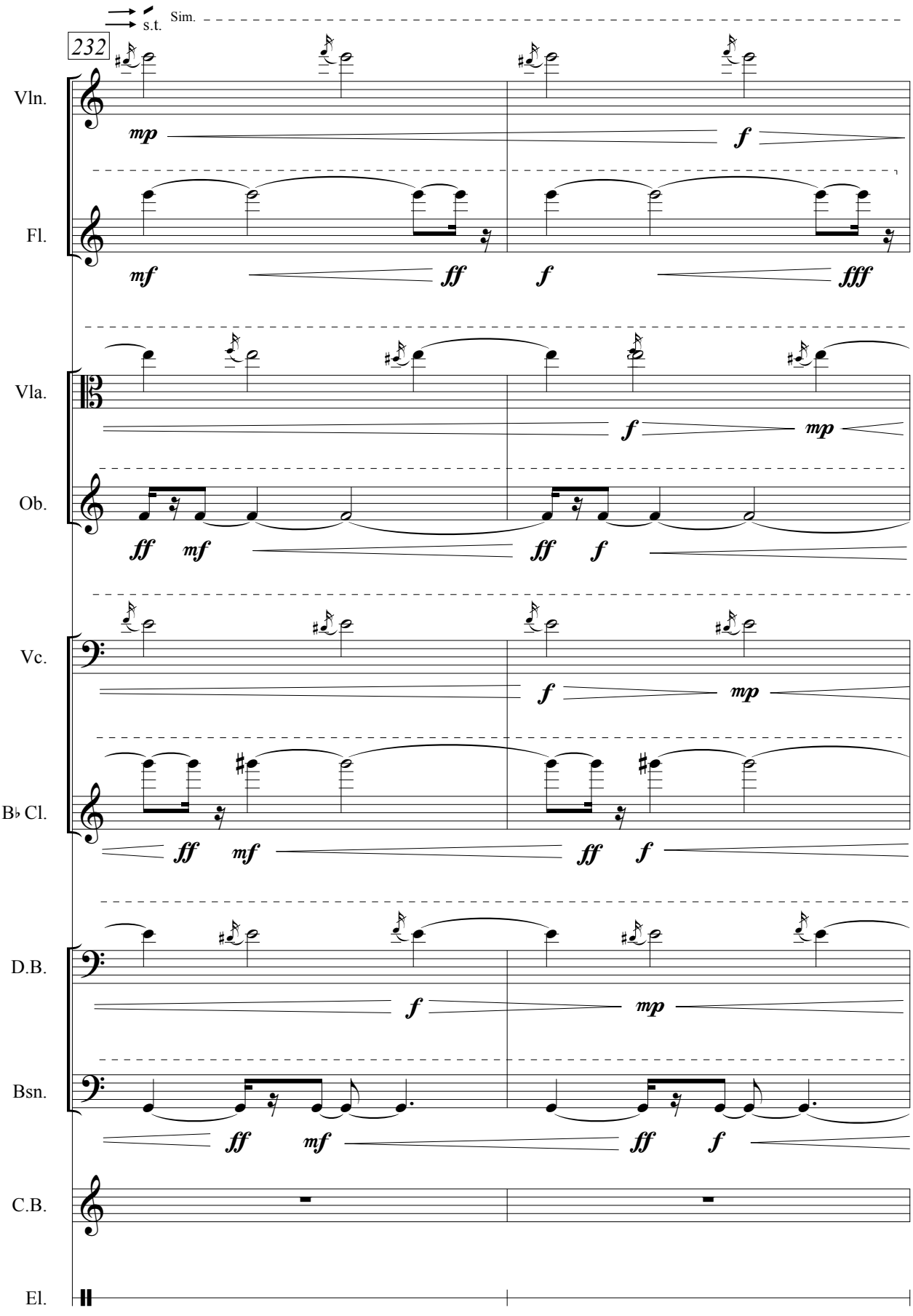

221
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
sffz p ff p ff sffz p ff p ff p
f sffz pp mp pp mp
ff p ff sffz p ff p ff p
pp mp pp
ff p ff sffz p ff p ff p
f sffz pp mp pp
p ff sffz p ff p ff p
f sffz pp mp pp
mp mf mp

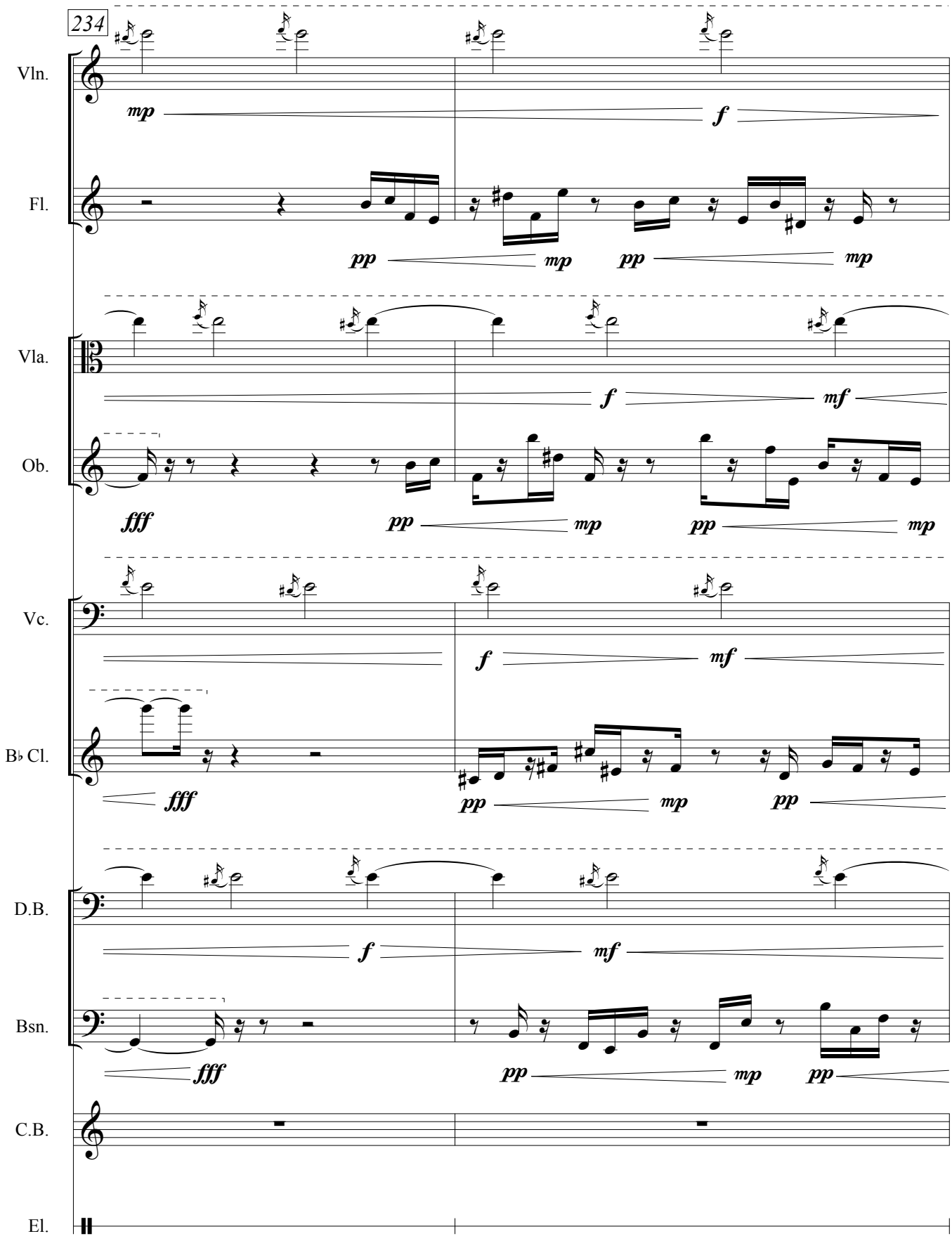

224
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.p.
Sim.
f
p
mp
mf
pp
3
10
*Ambisonics-slow speed, high grain amount

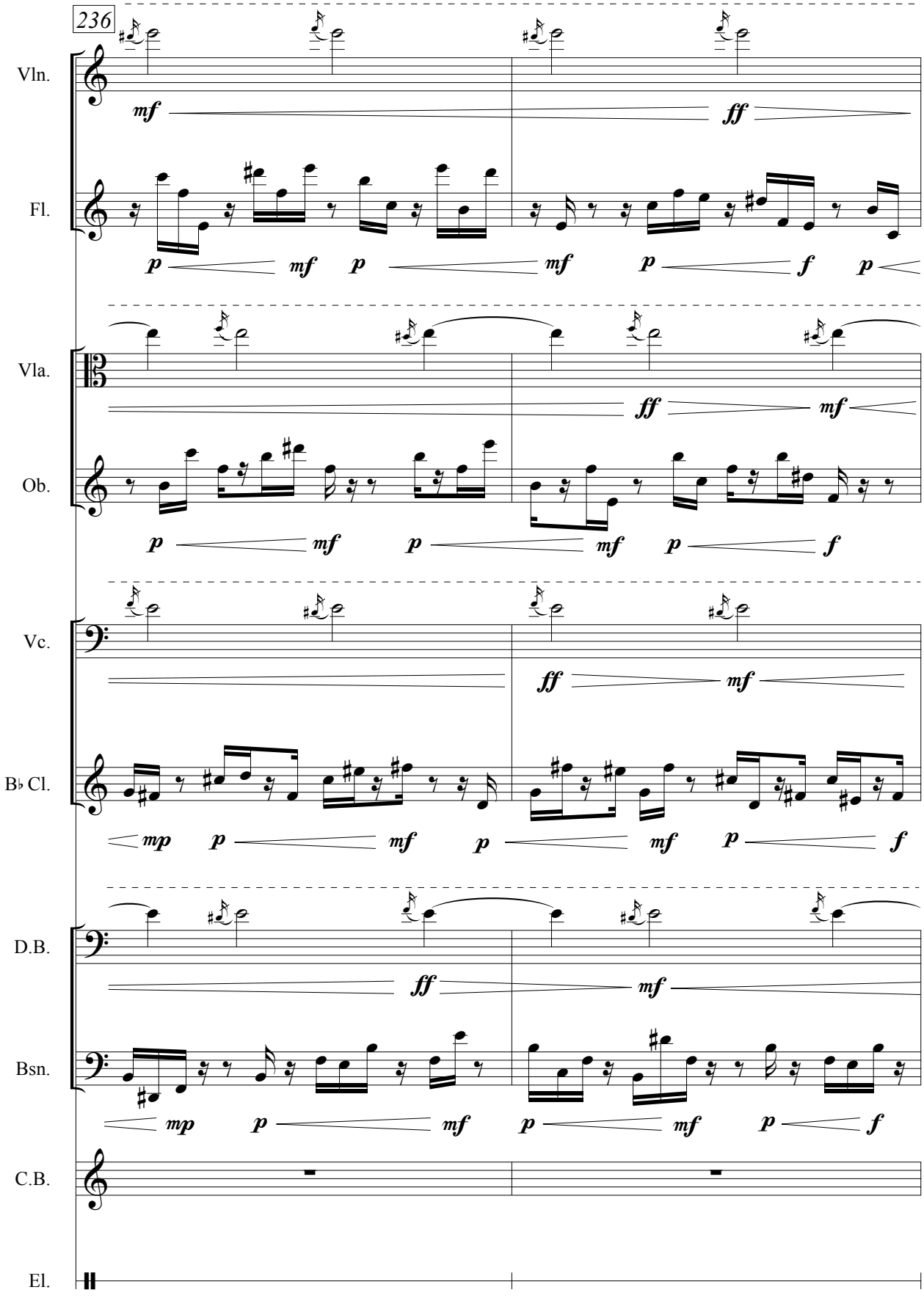

226
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
mp
p
mf
f
3

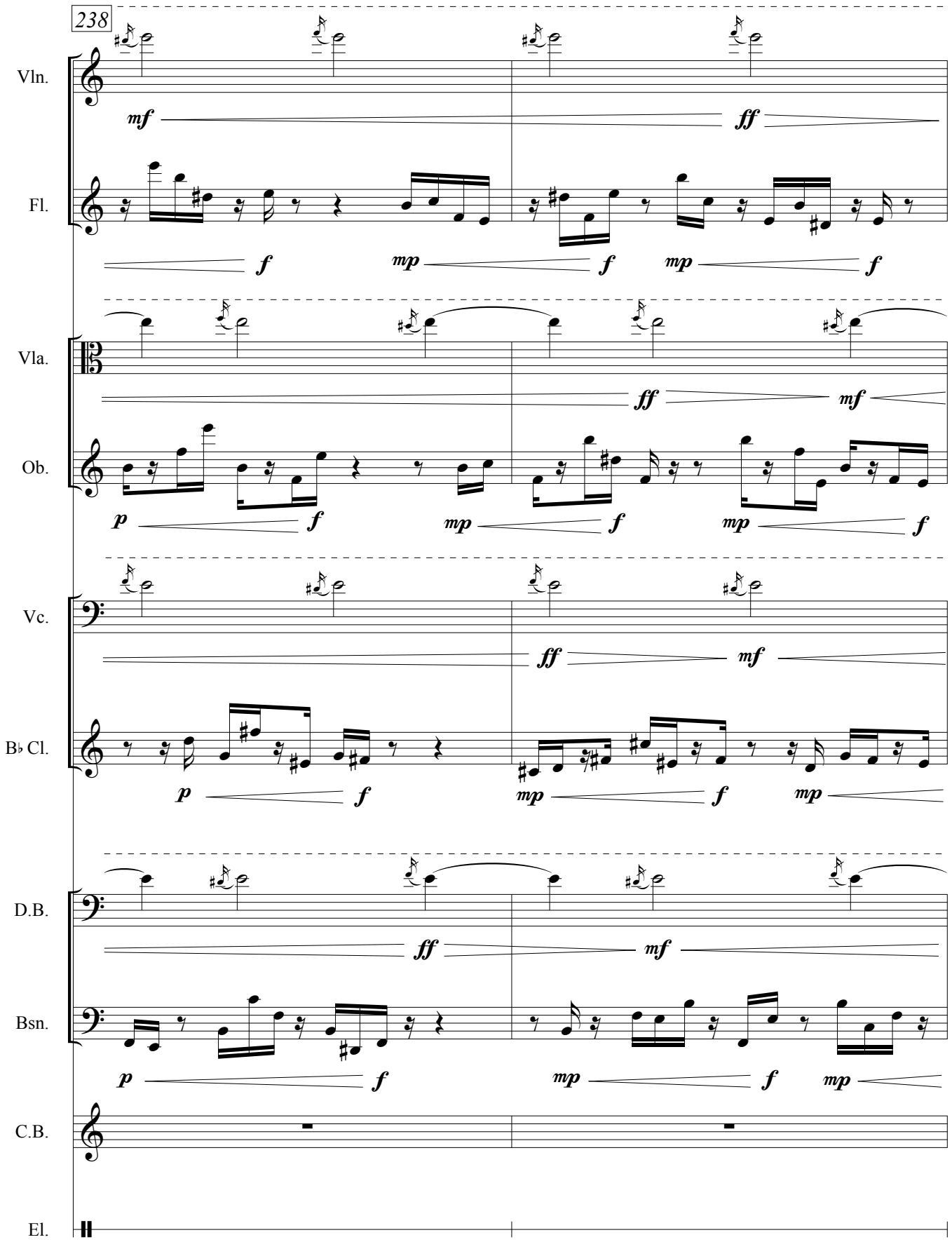

228
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.p.
s.t.
mf
p
f

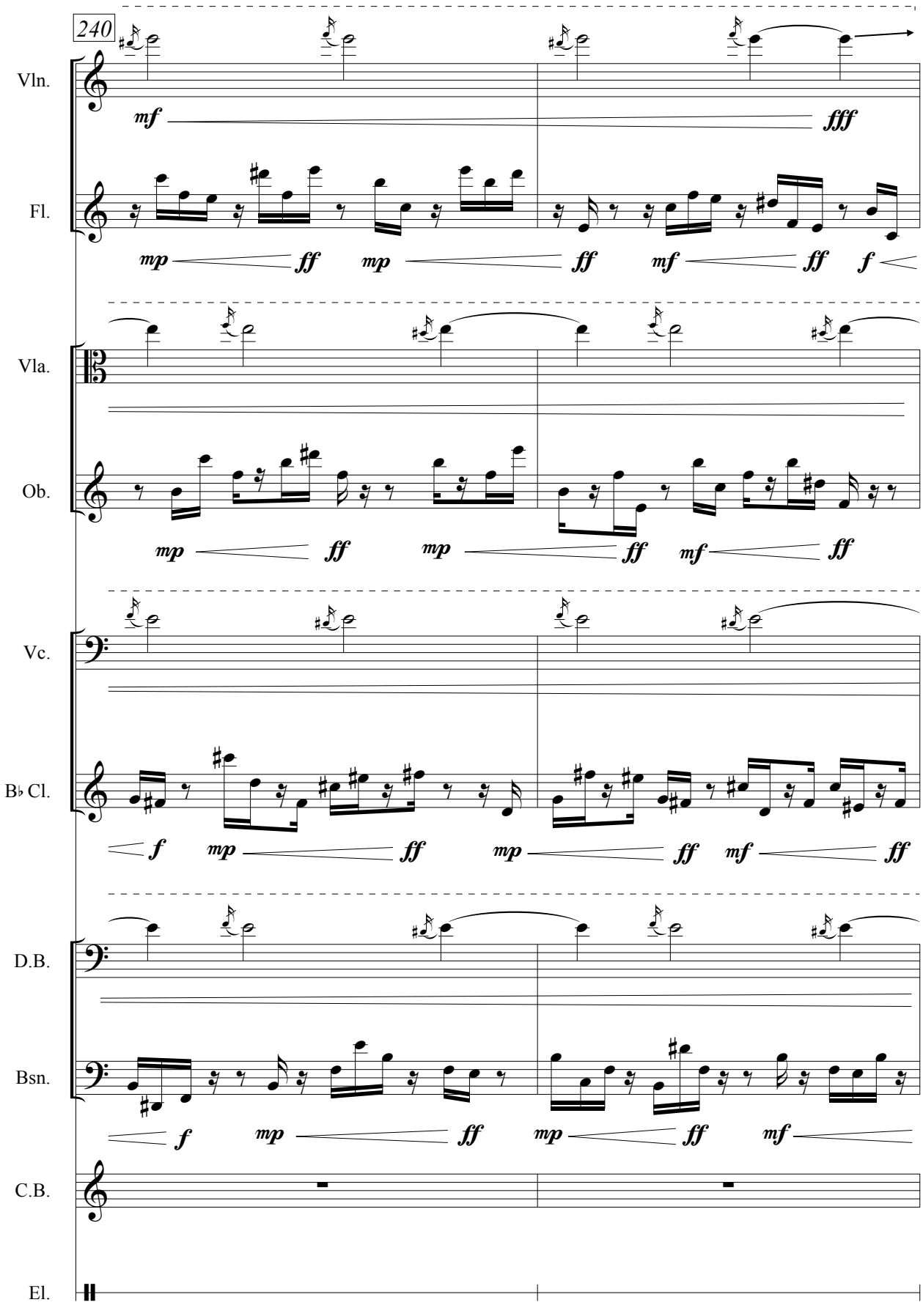

230
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
s.p.
Sim.
p
mf
mp
f
ff

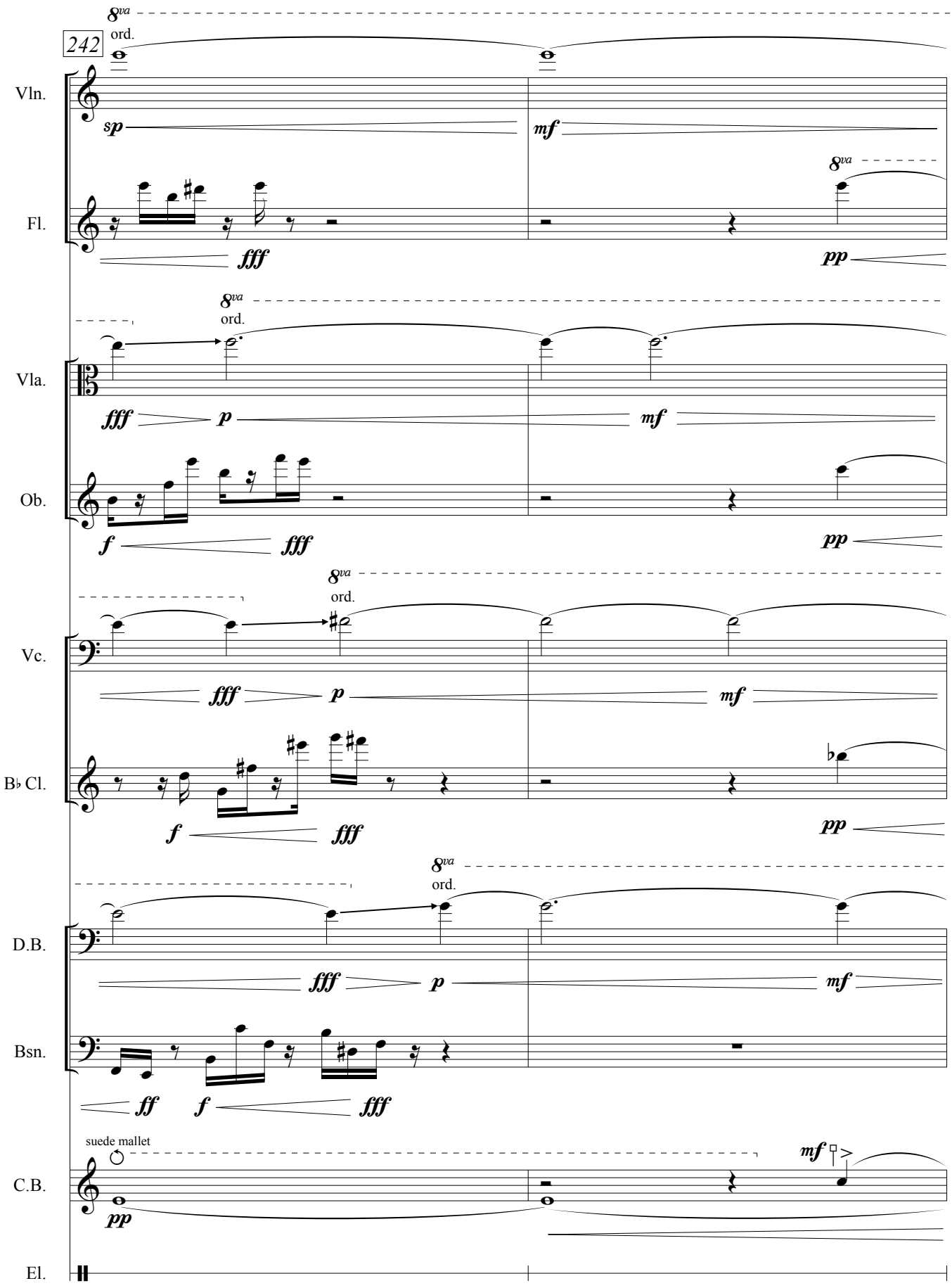

s.t.
Sim.
232
Vln.
mp
f
Fl.
mf
ff
f
fff
Vla.
f
mp
Ob.
ff
mf
ff
f
Vc.
f
mp
B♭ Cl.
ff
mf
ff
f
D.B.
f
mp
Bsn.
ff
mf
ff
f
C.B.
El.


234
Vln.
mp
f
Fl.
pp
mp
pp
mp
Vla.
f
mf
Ob.
fff
pp
mp
pp
mp
Vc.
f
mf
B♭ Cl.
fff
pp
mp
pp
D.B.
f
mf
Bsn.
fff
pp
mp
pp
C.B.
El.

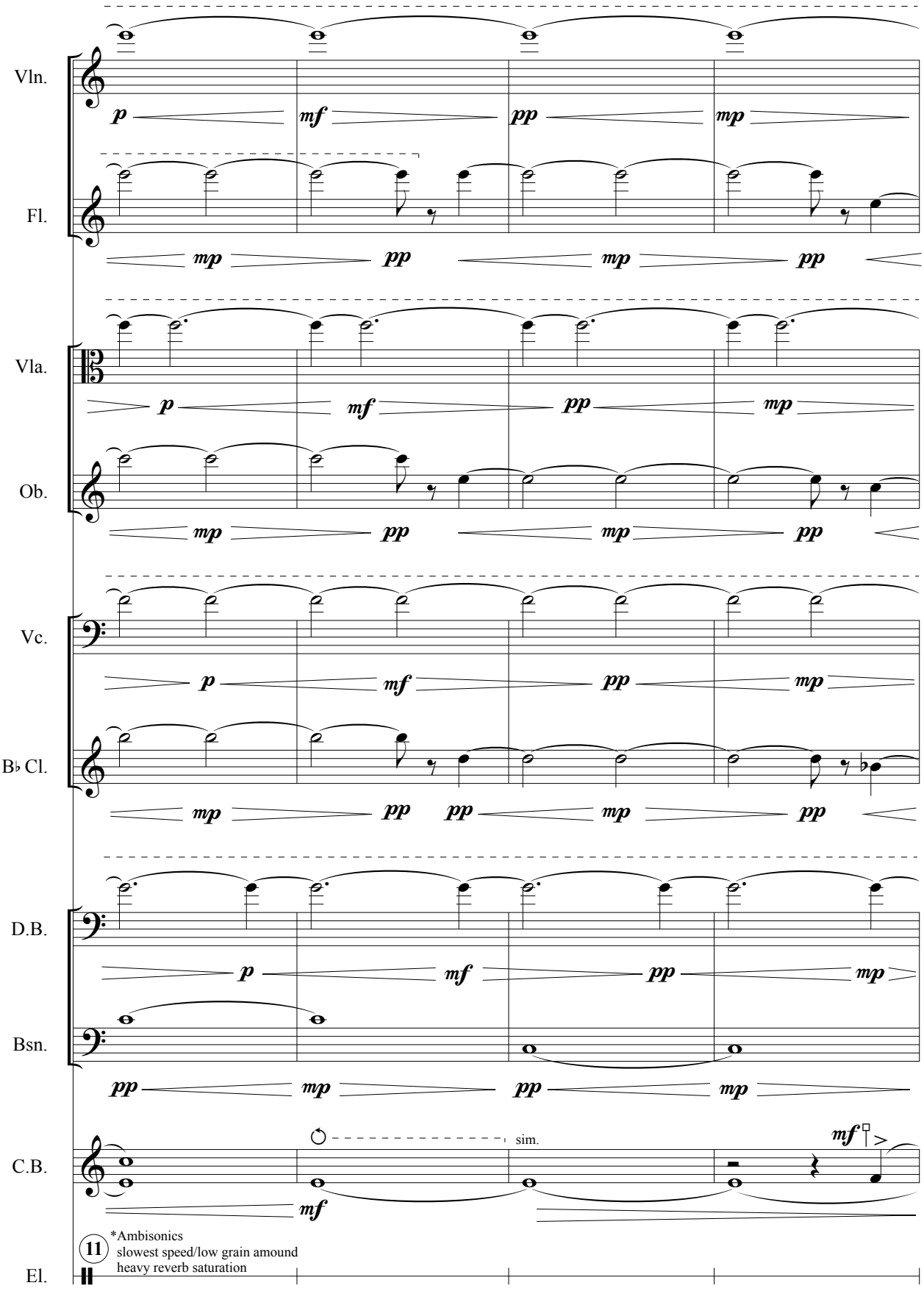

236
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.

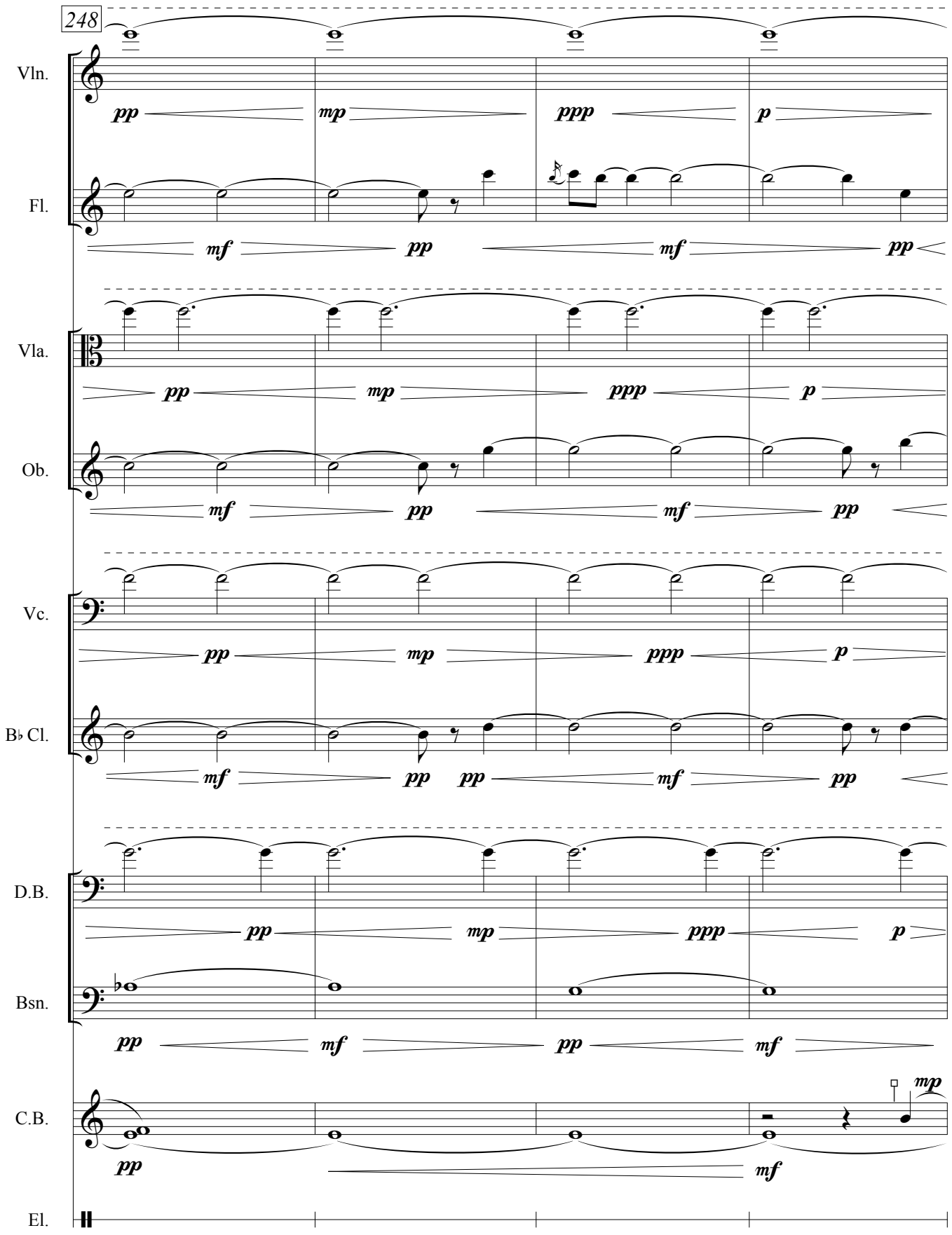

238
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.

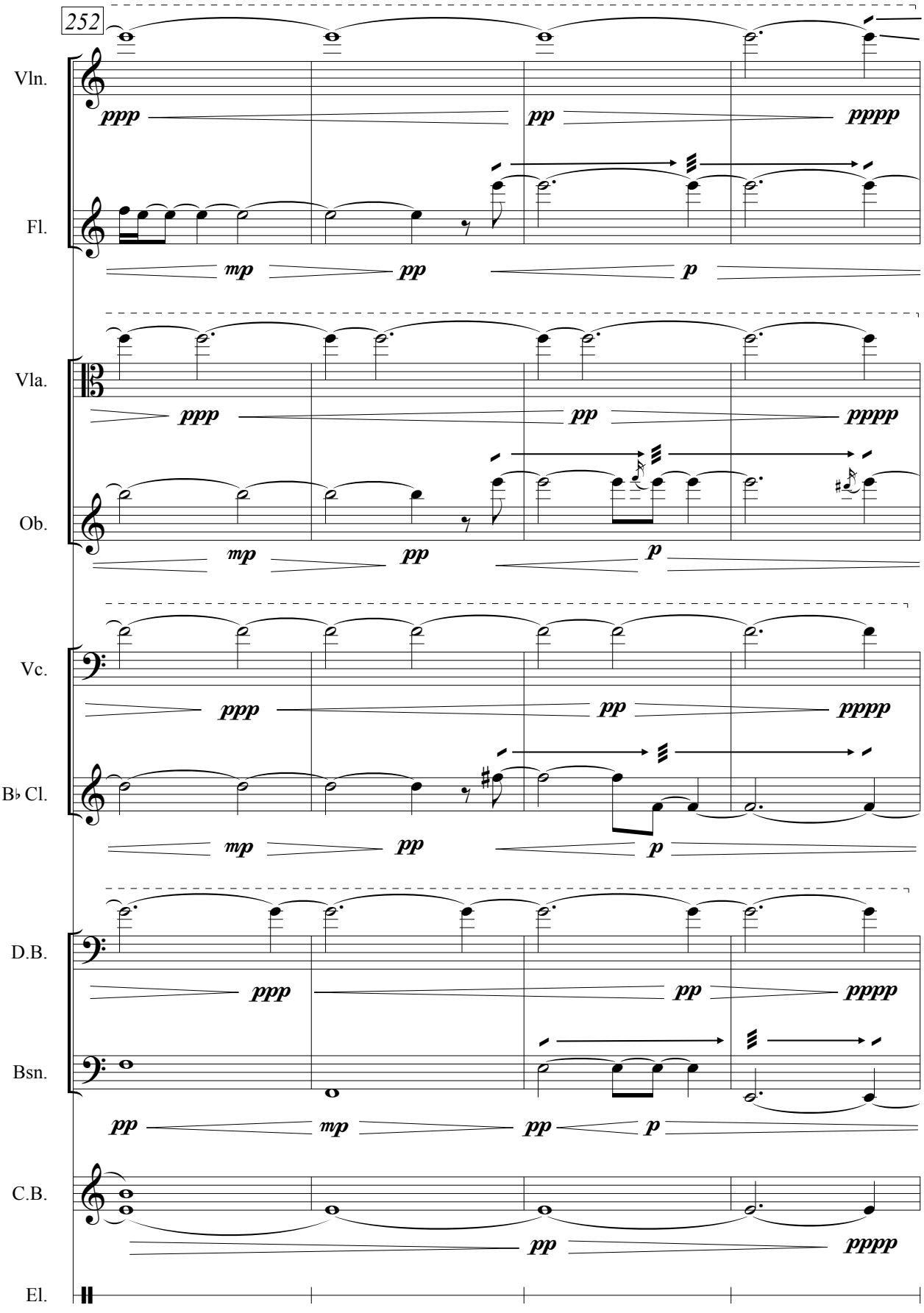

240
Vln.
mf
fff
Fl.
mp ff mp ff mf ff f
Vla.
Ob.
mp ff mp ff mf ff
Vc.
B♭ Cl.
f mp ff mp ff mf ff
D.B.
Bsn.
f mp ff mp ff mf
C.B.
El.

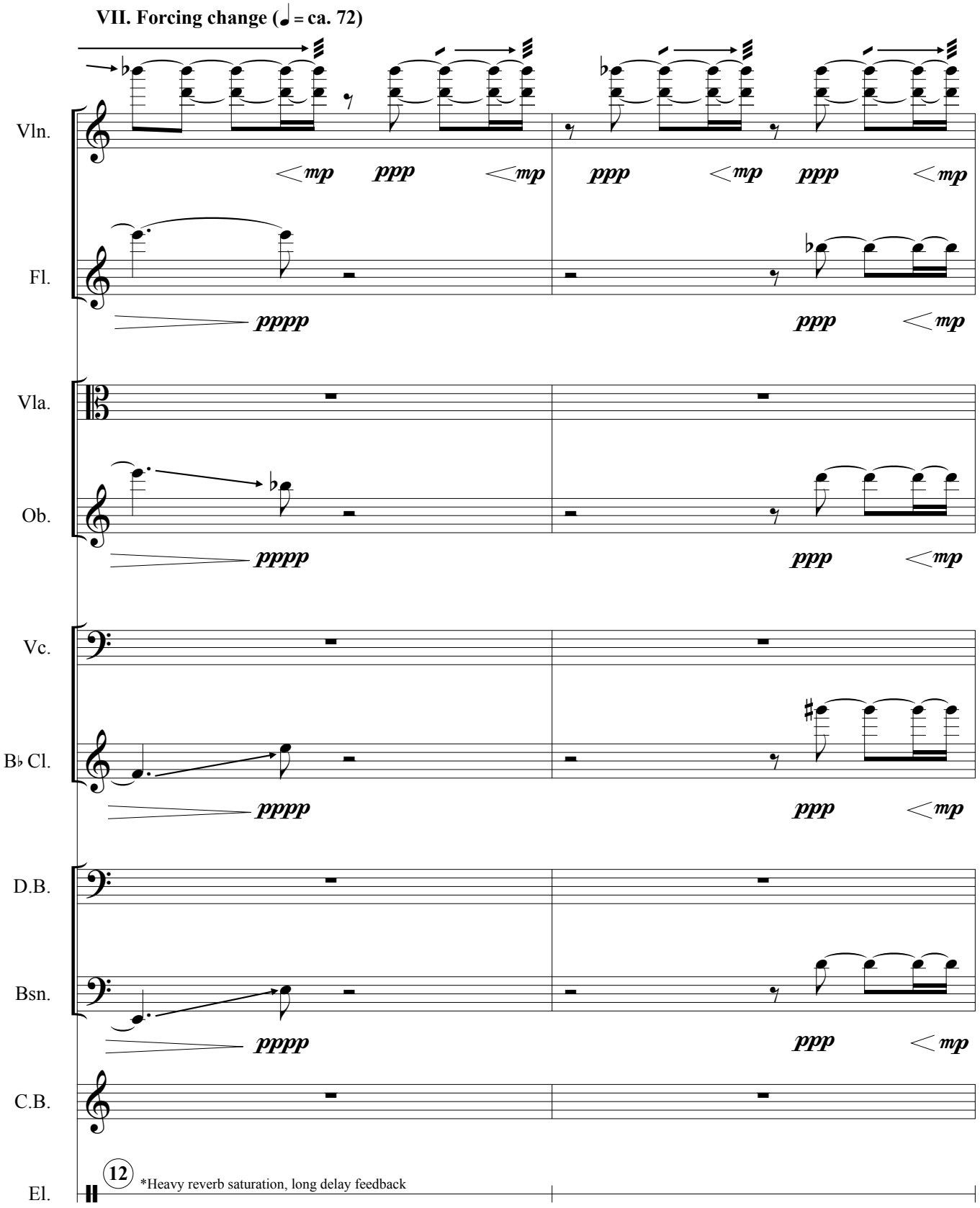

242
8va
ord.
Vln.
sp
mf
Fl.
fff
pp
Vla.
p
Ob.
f
Vc.
B♭ Cl.
D.B.
Bsn.
ff
suede mallet
C.B.
El.

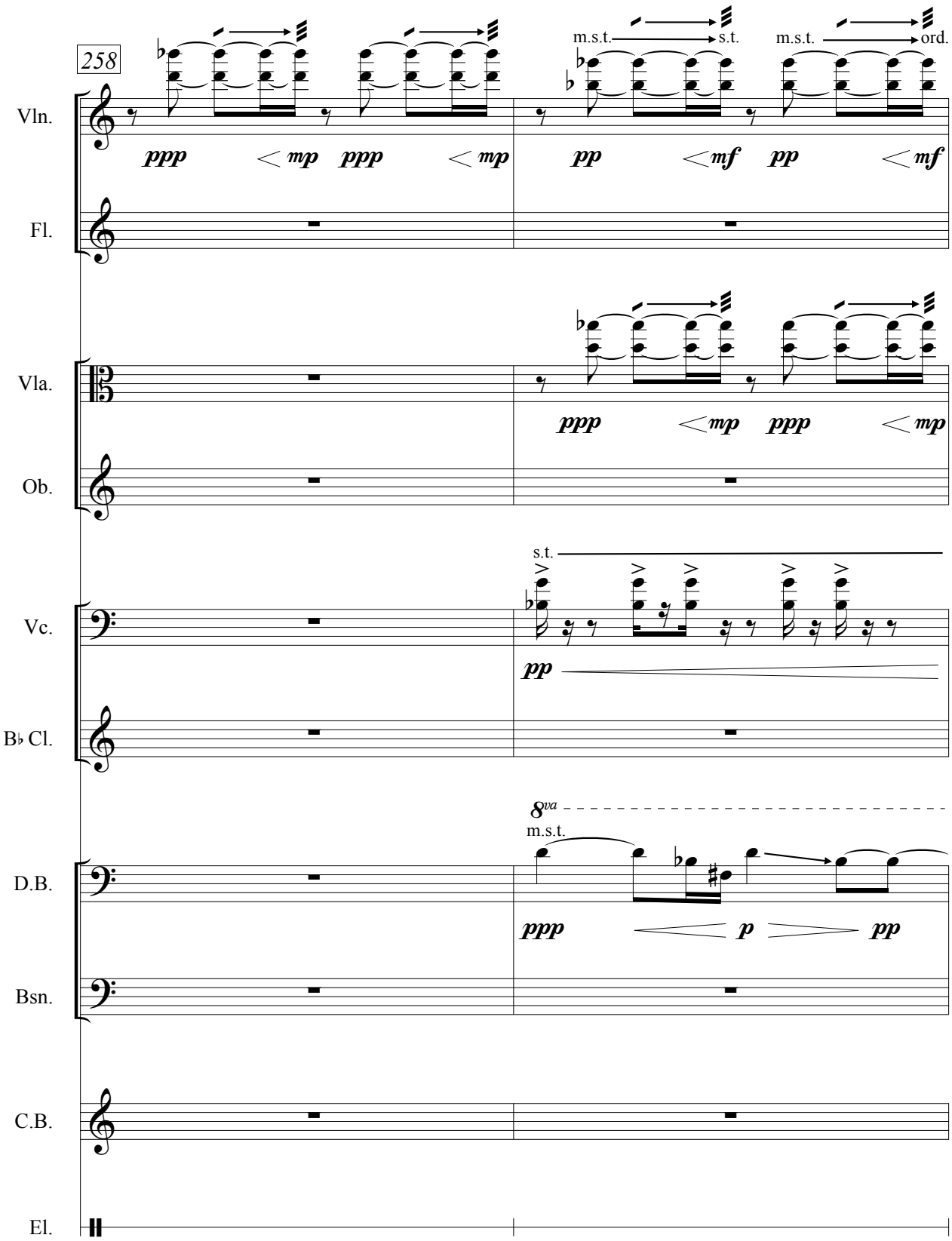
VI. Somewhat resolved (♩ = ca. 60)

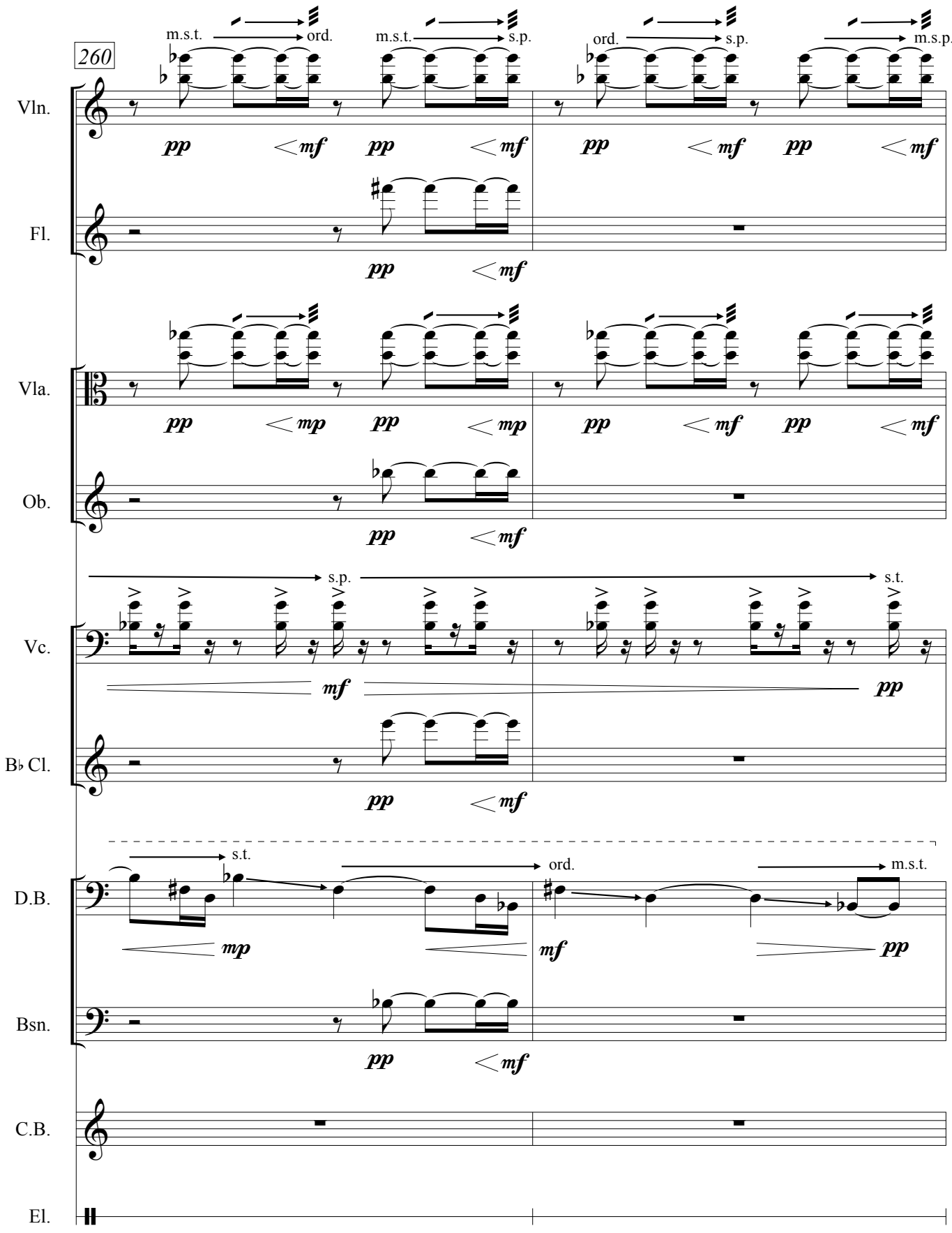


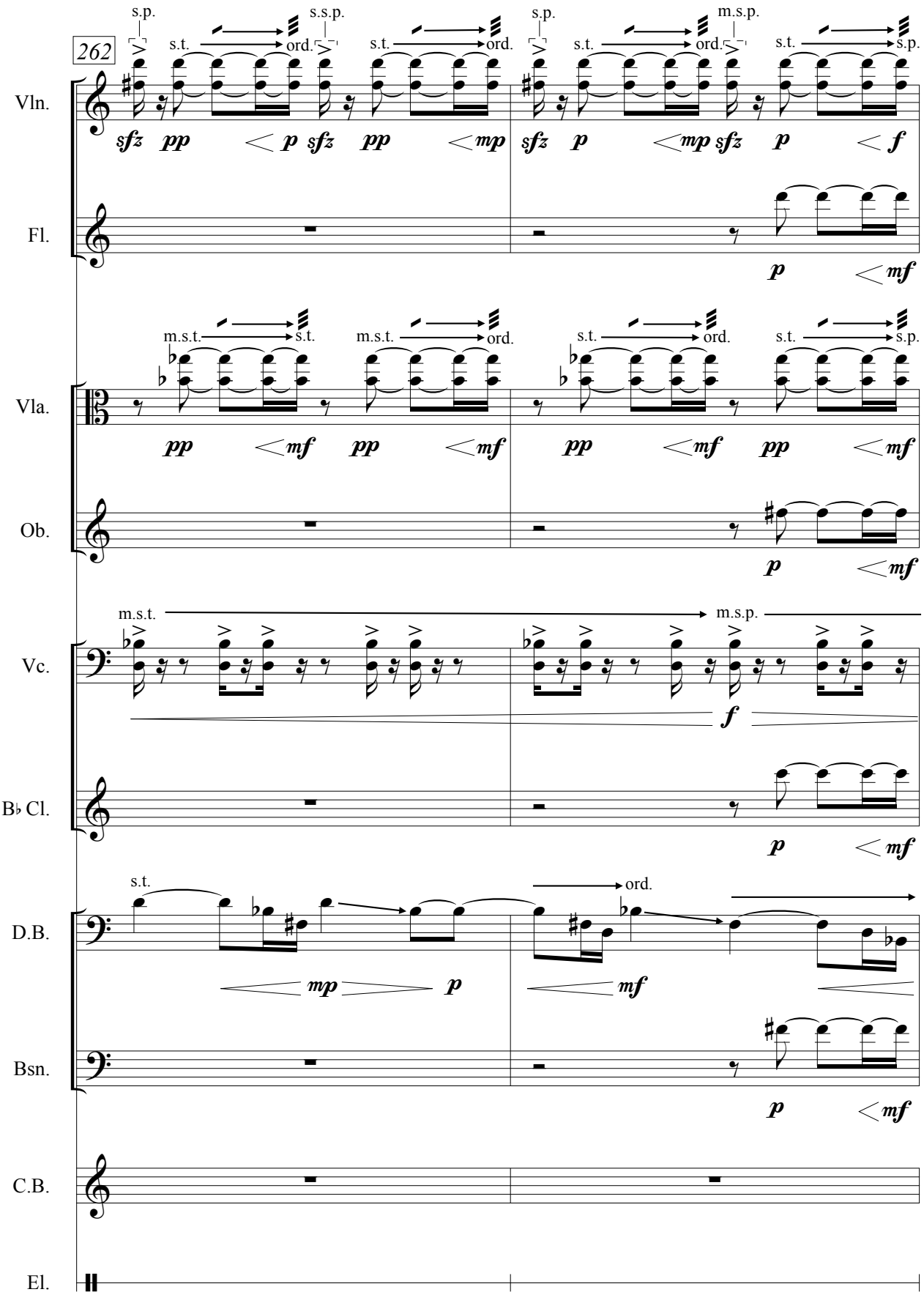

248
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
pp
mp
ppp
p
mf

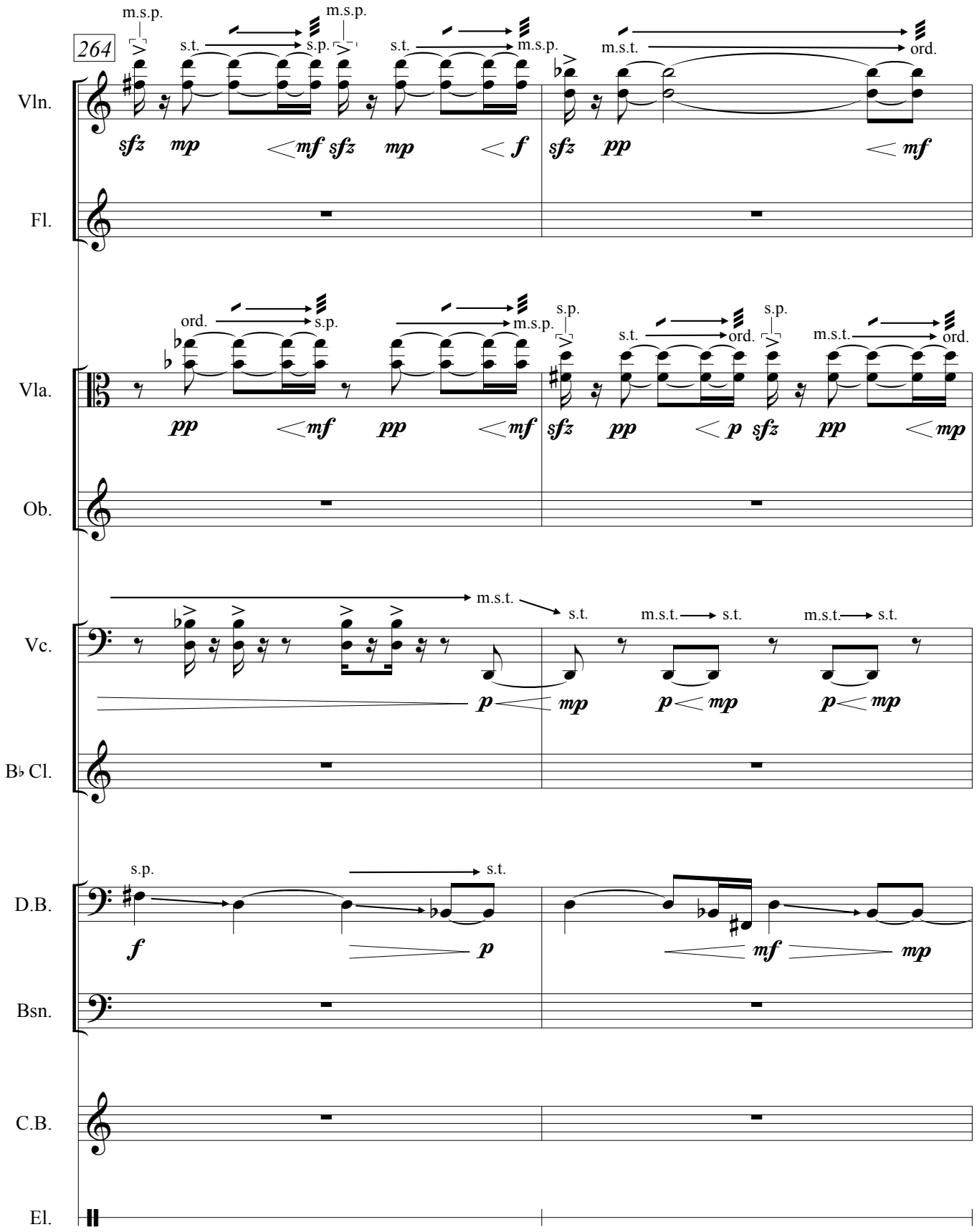

252
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
ppp
pp
pppp
mp
p

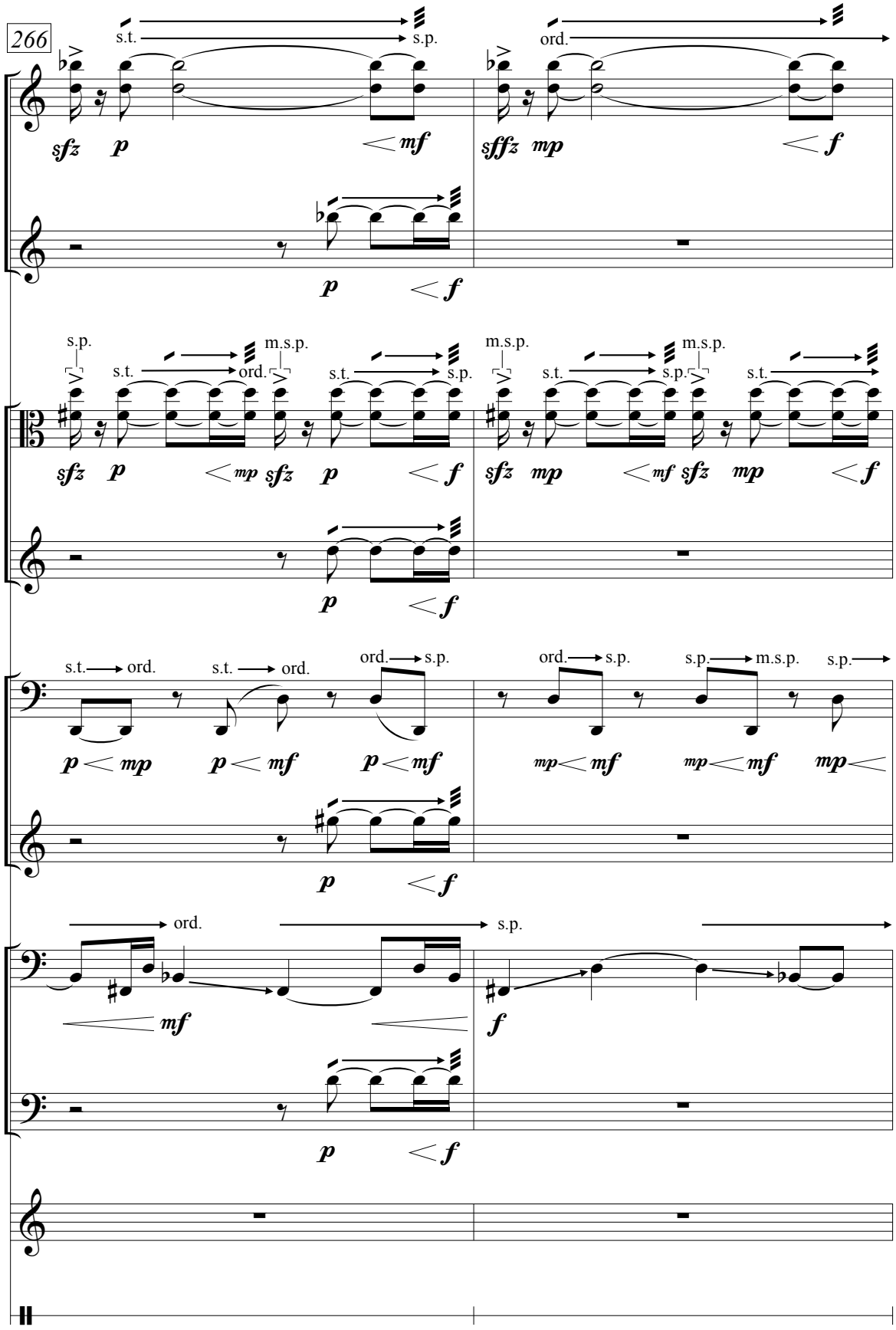

VII. Forcing change (♩ = ca. 72)
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
mp
ppp
pppp
12
*Heavy reverb saturation, long delay feedback

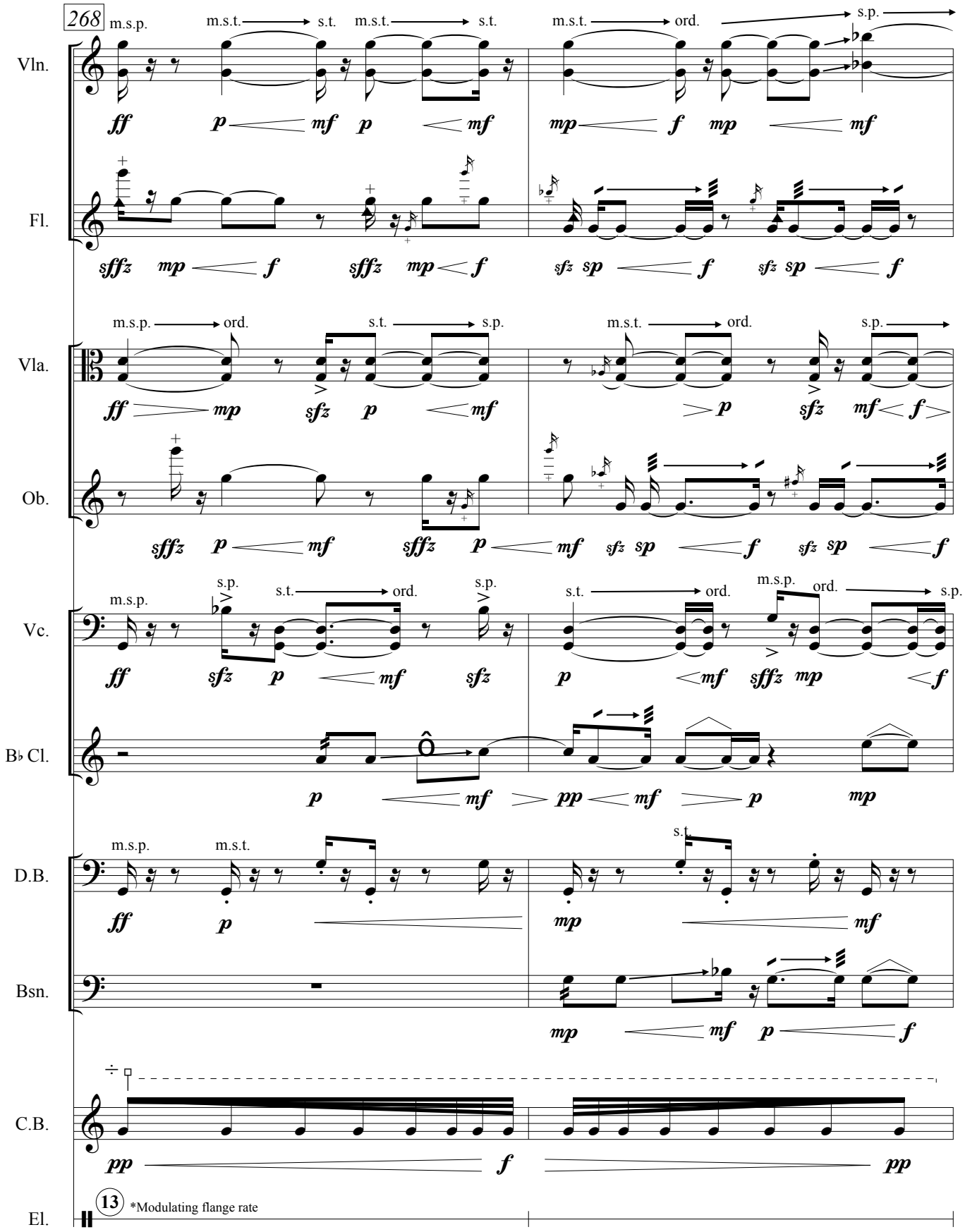

258
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
m.s.t.
s.t.
m.s.t.
ord.
ppp
mp
ppp
mp
pp
mf
pp
mf
ppp
mp
ppp
mp
s.t.
pp
8va
m.s.t.
ppp
p
pp

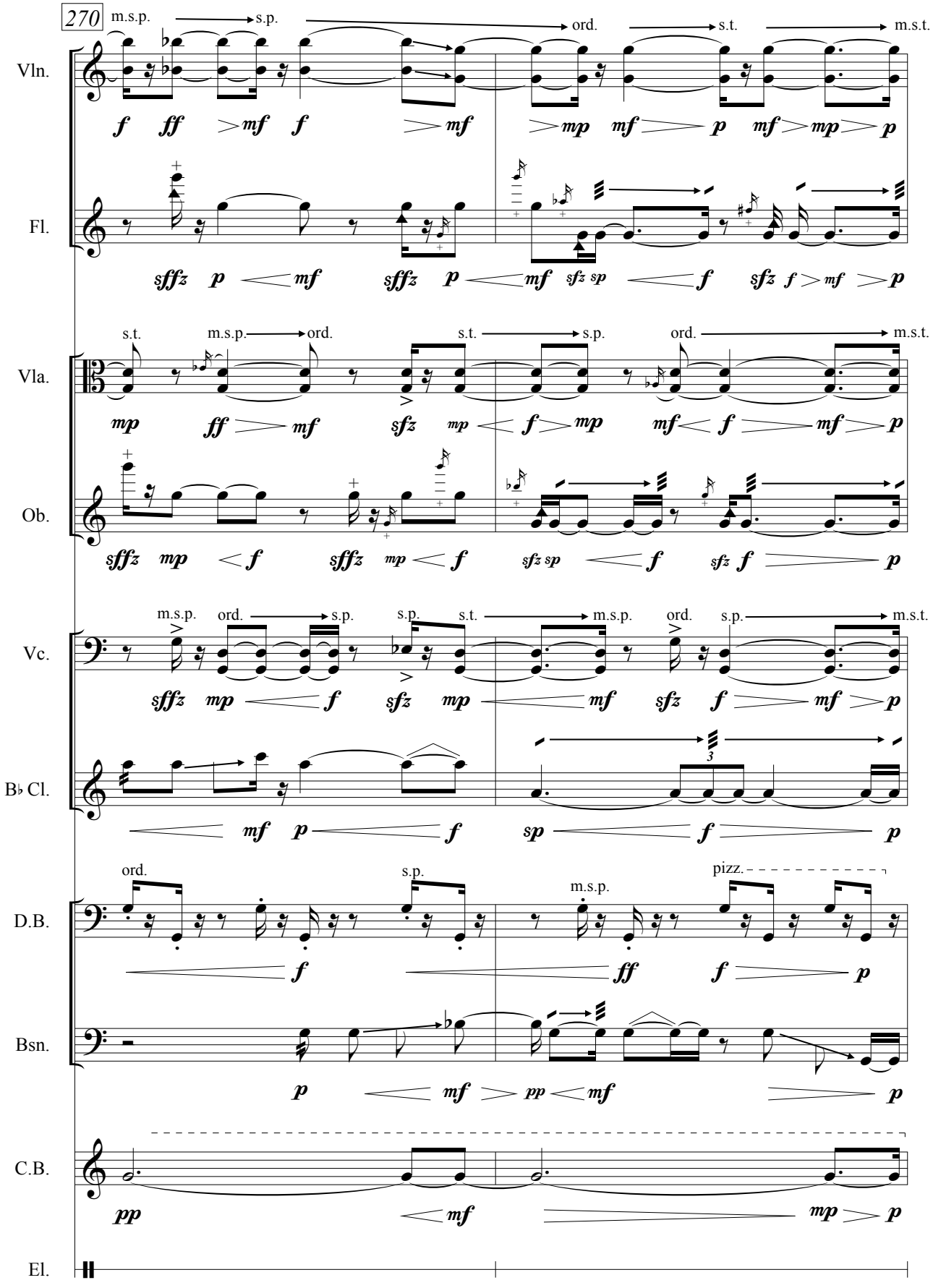

260
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
m.s.t.
ord.
s.p.
m.s.p.
s.t.
pp
mf
mp

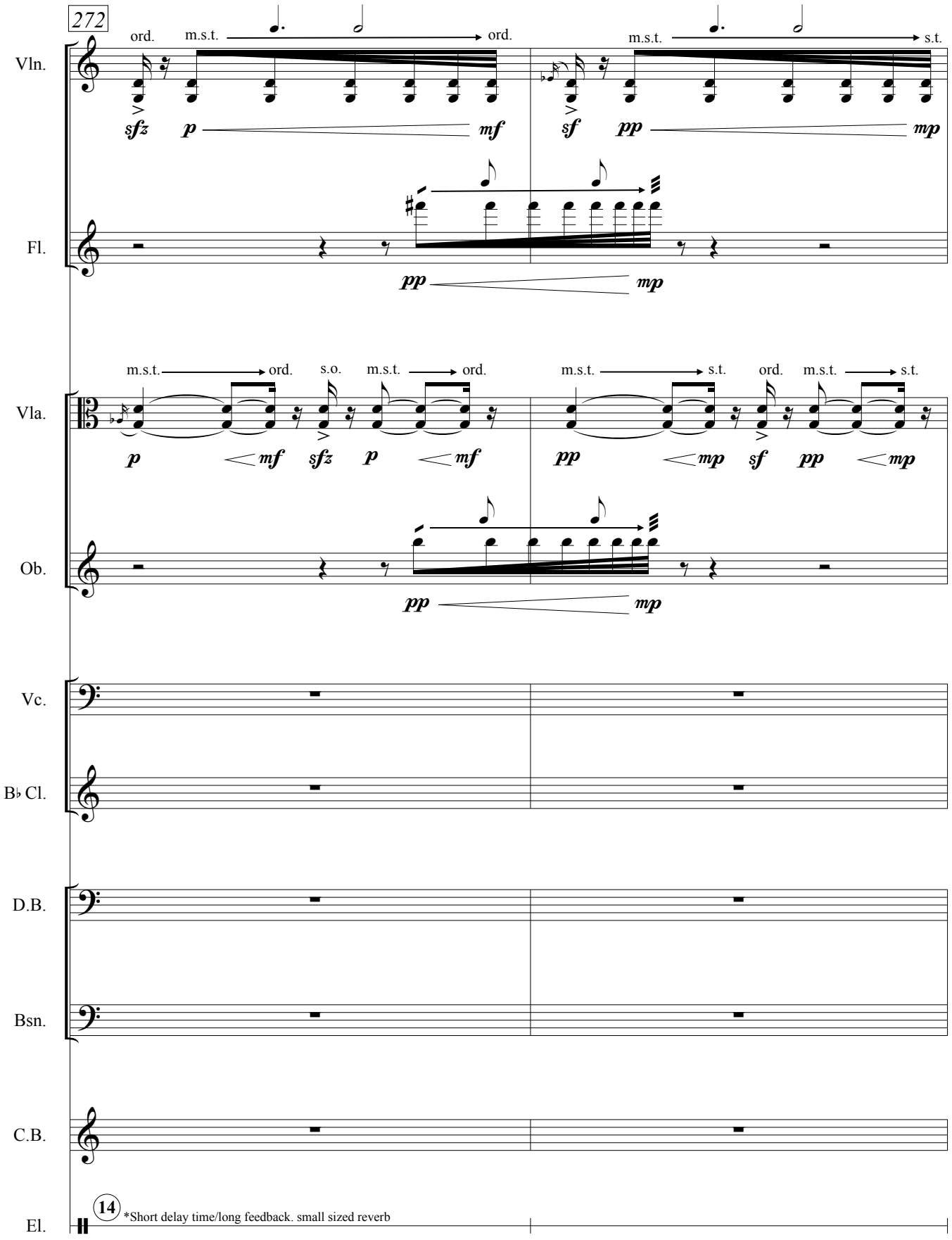

262
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.p.
s.t.
ord.
s.s.p.
m.s.p.
m.s.t.
s.p.
sfz
pp
p
mp
mf
f

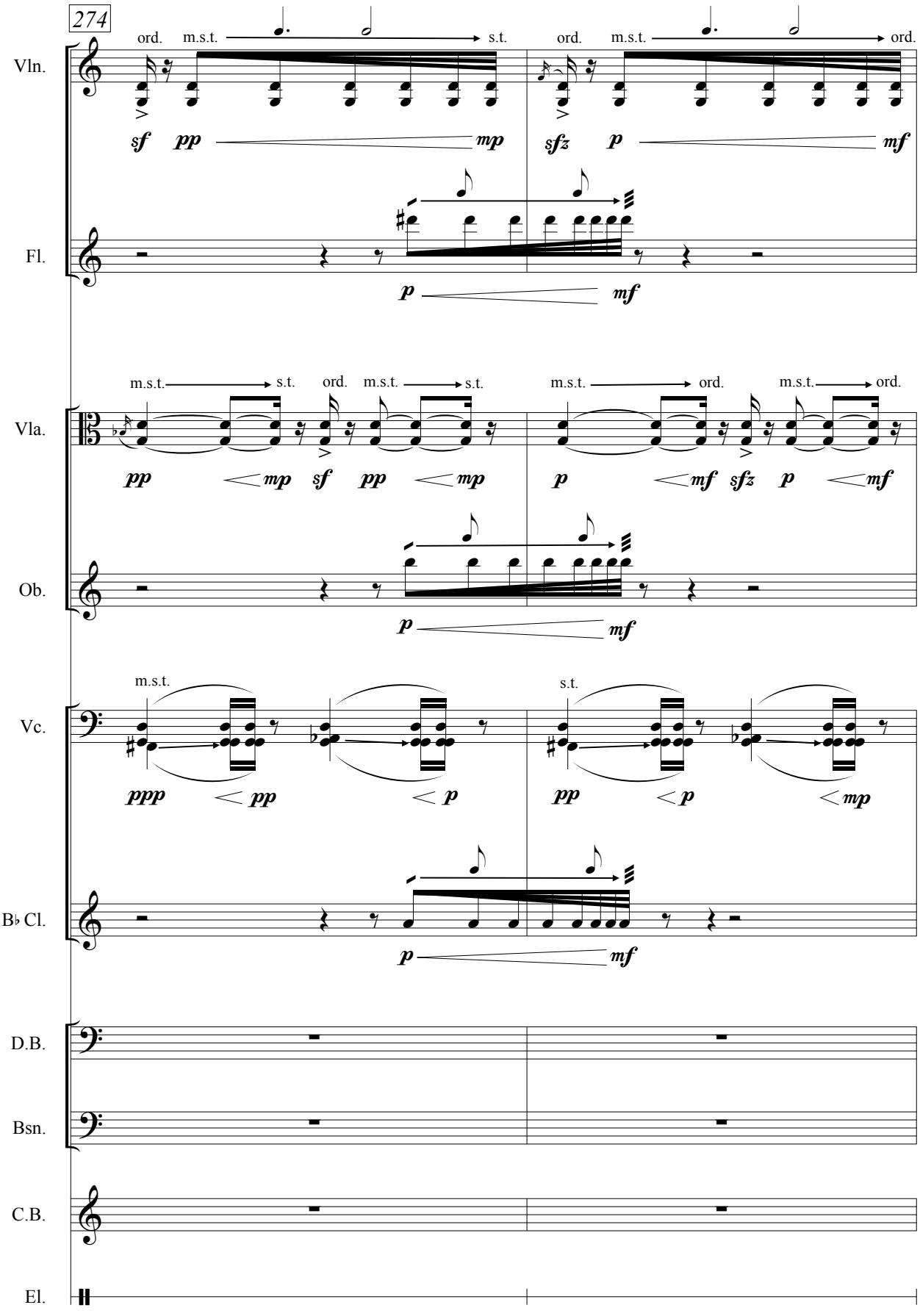

264
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
m.s.p.
s.t.
s.p.
m.s.t.
ord.
sfz
mp
mf
f
pp
p

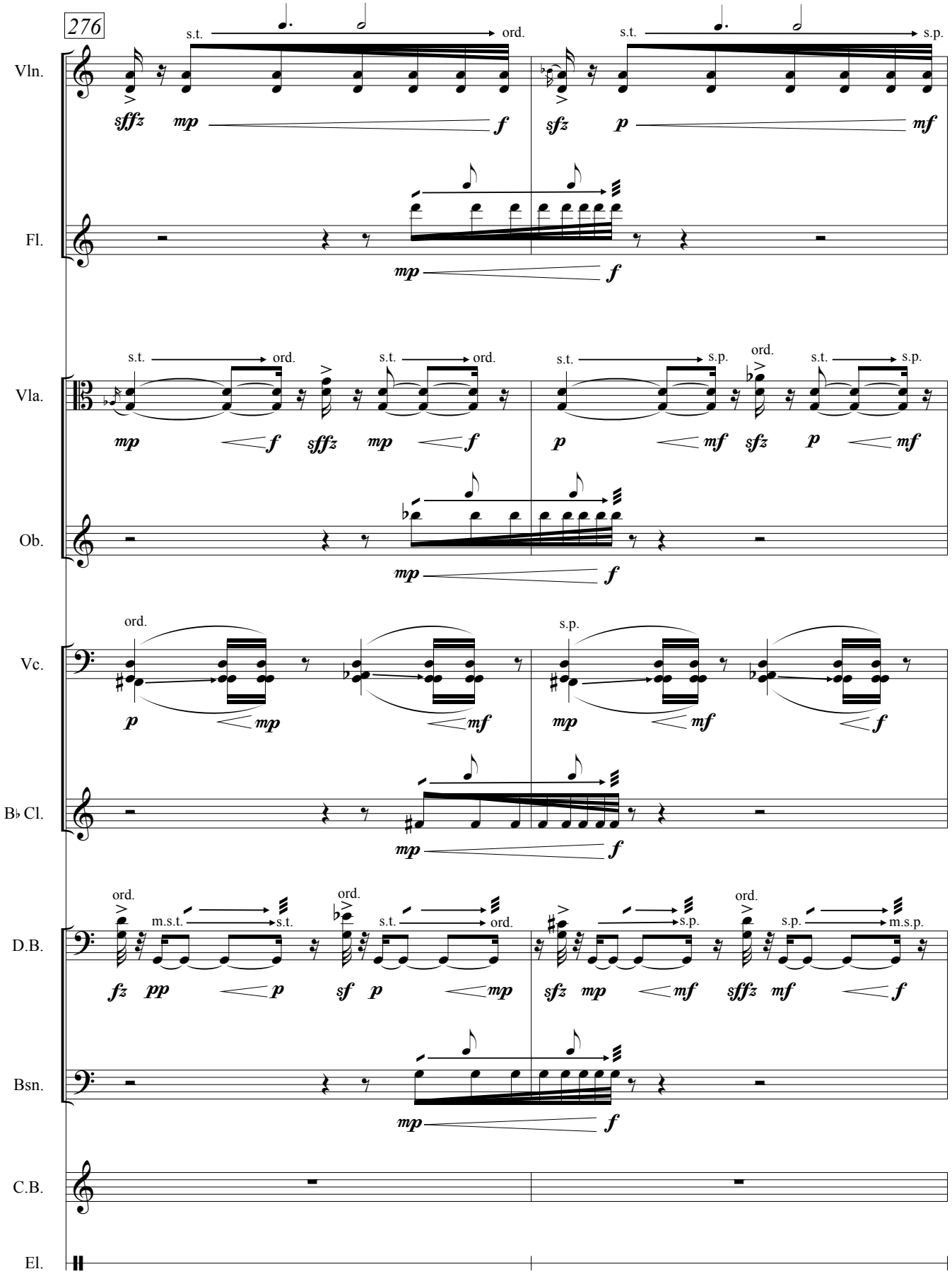

266
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
s.p.
ord.
m.s.p.
sfz
sffz
p
mp
mf
f

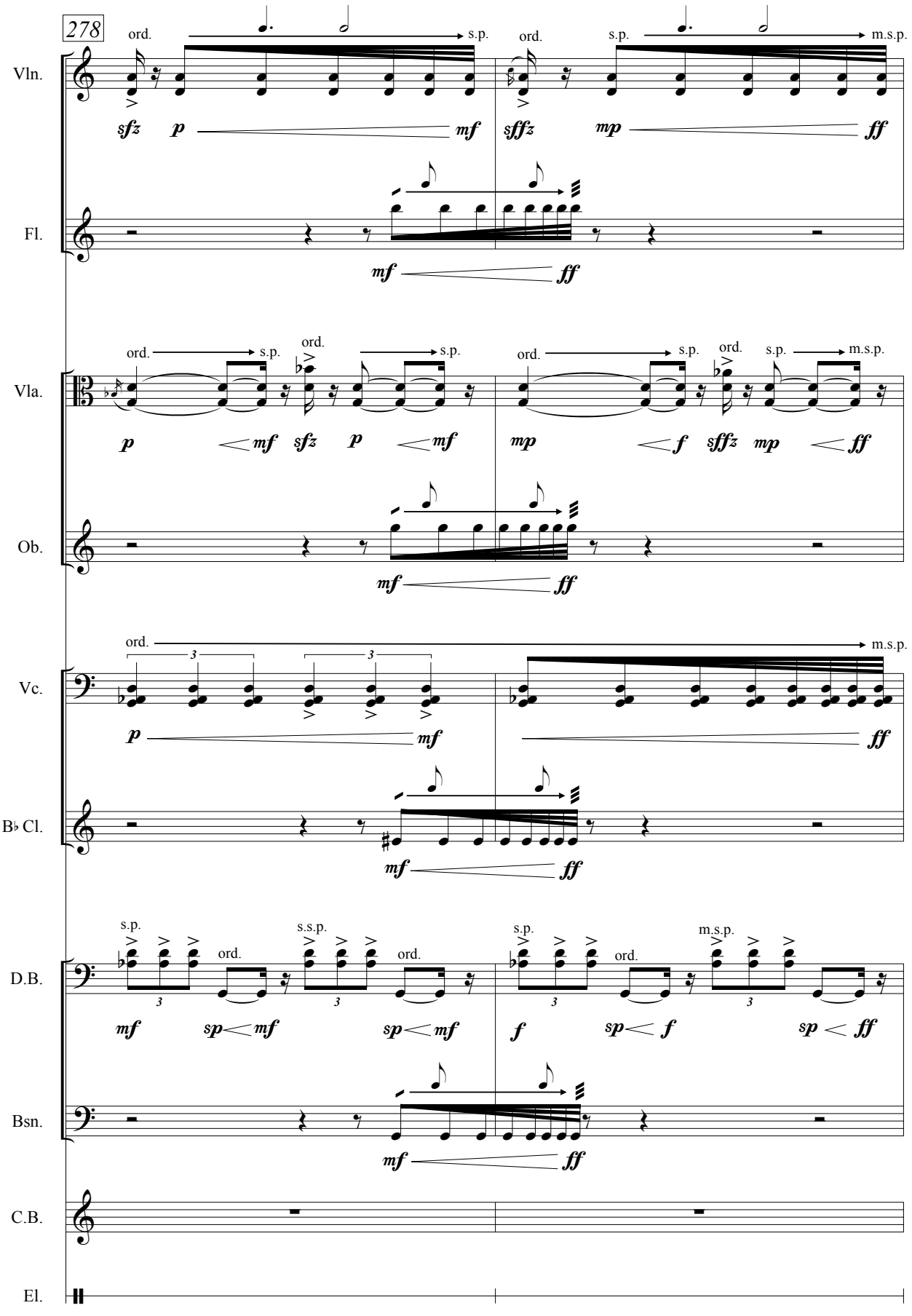

268
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
m.s.p.
m.s.t.
s.t.
ord.
s.p.
13
*Modulating flange rate

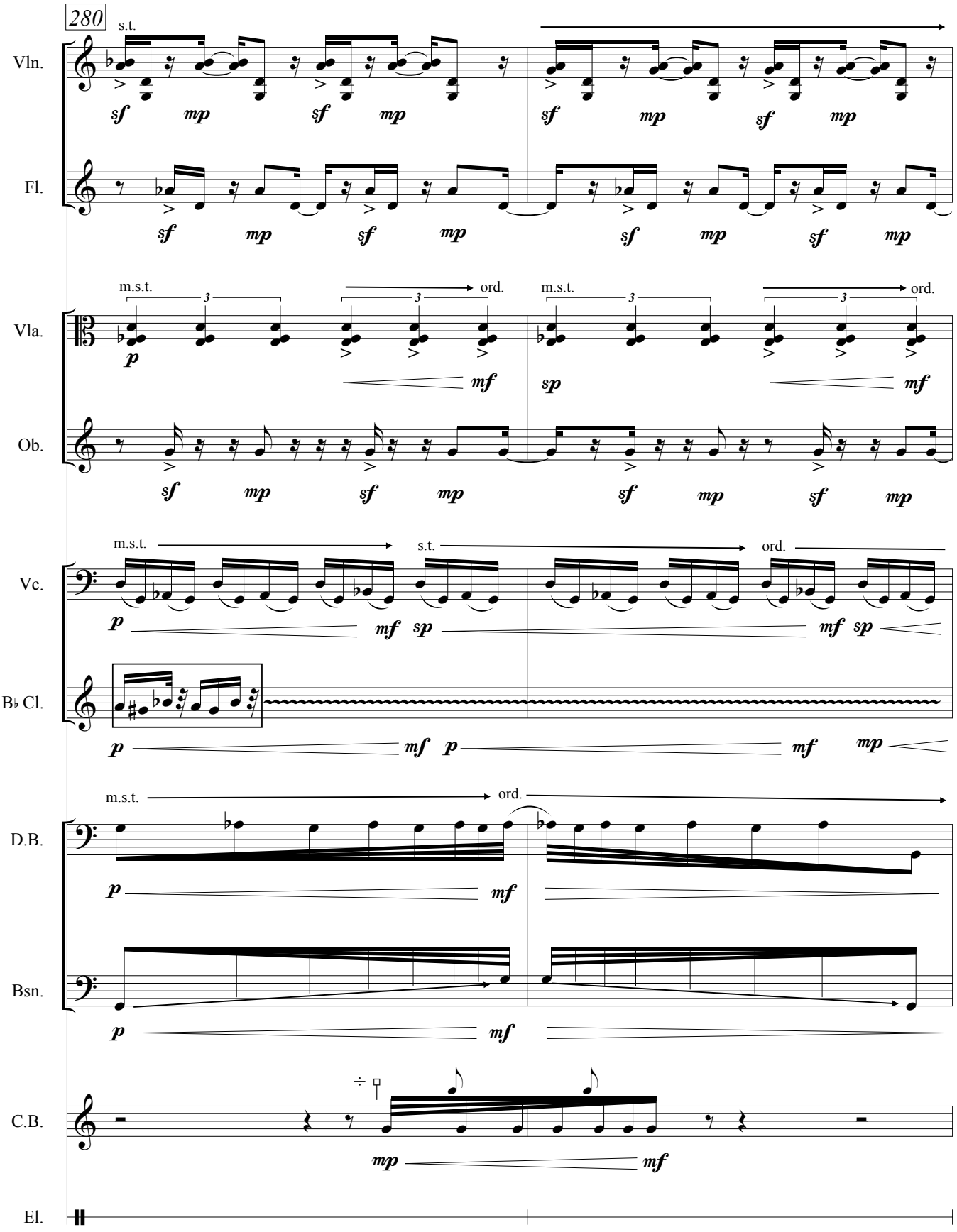

270
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
m.s.p.
s.p.
ord.
s.t.
m.s.t.
pizz.

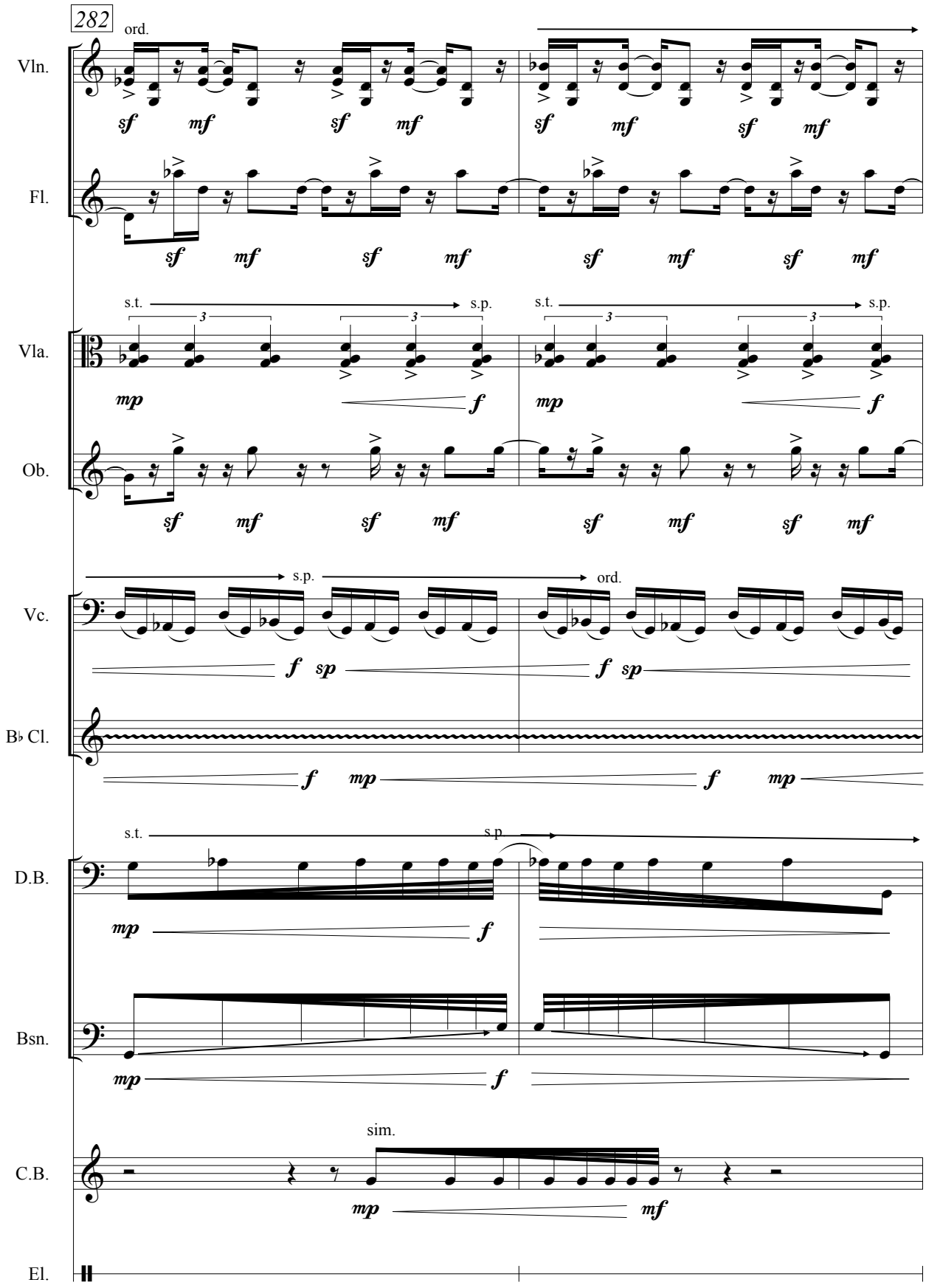

272
Vln.
ord.
m.s.t.
ord.
m.s.t.
s.t.
sfz
p
mf
sf
pp
mp
Fl.
pp
mp
Vla.
m.s.t.
ord.
s.o.
m.s.t.
ord.
m.s.t.
s.t.
ord.
m.s.t.
s.t.
p
mf
sfz
p
mf
pp
mp
sf
pp
mp
Ob.
pp
mp
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
14
*Short delay time/long feedback. small sized reverb

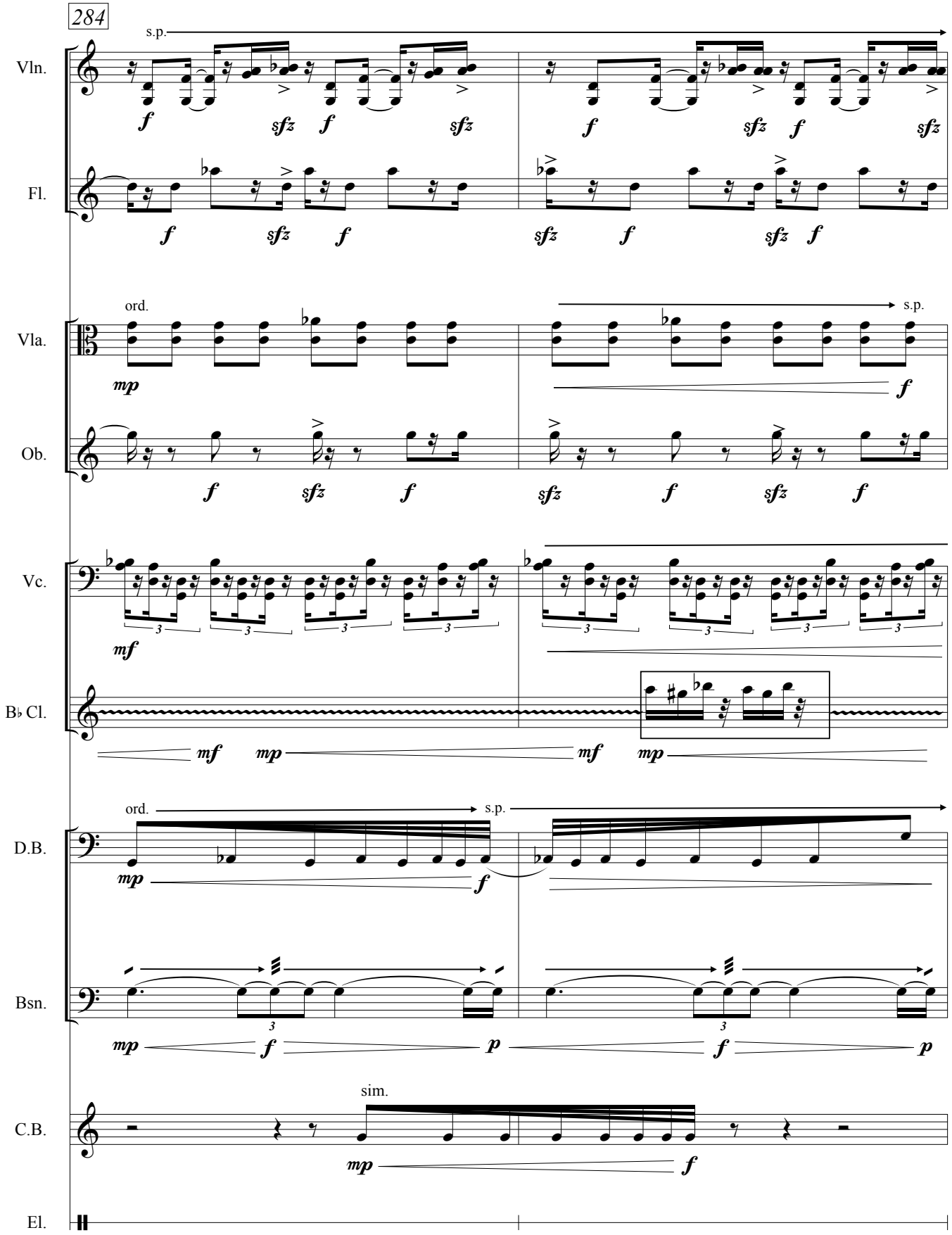

274
Vln.
ord.
m.s.t.
s.t.
ord.
m.s.t.
ord.
sf pp mp
sfz p mf
Fl.
p mf
Vla.
m.s.t.
s.t.
ord.
m.s.t.
s.t.
m.s.t.
ord.
m.s.t.
ord.
pp mp sf pp mp
p mf sfz p mf
Ob.
p mf
Vc.
m.s.t.
s.t.
ppp pp p
pp p mp
B♭ Cl.
p mf
D.B.
Bsn.
C.B.
El.

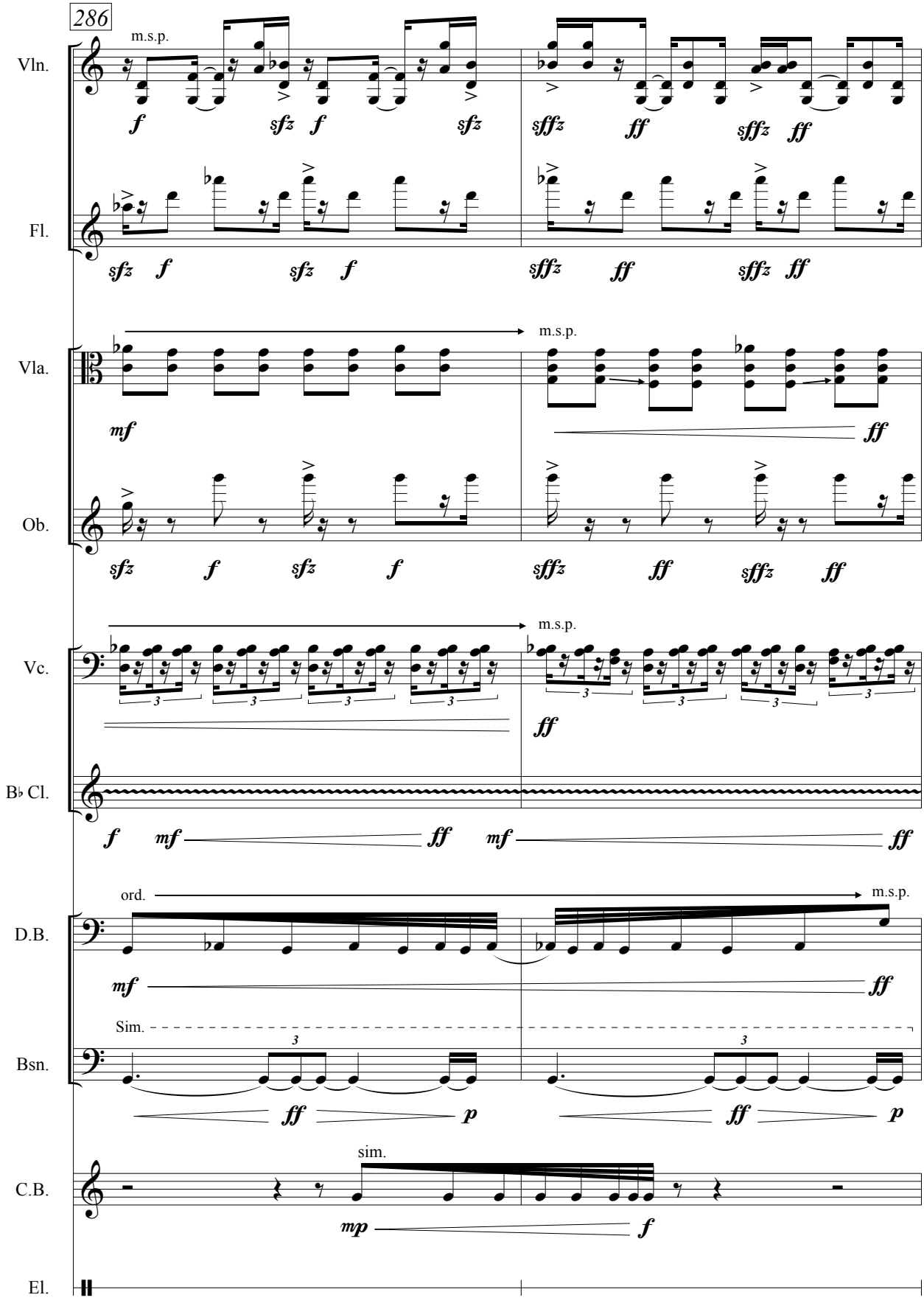

276
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
ord.
s.p.
m.s.t.
m.s.p.
sfffz
mp
f
sfz
p
mf
pp
sf
fz

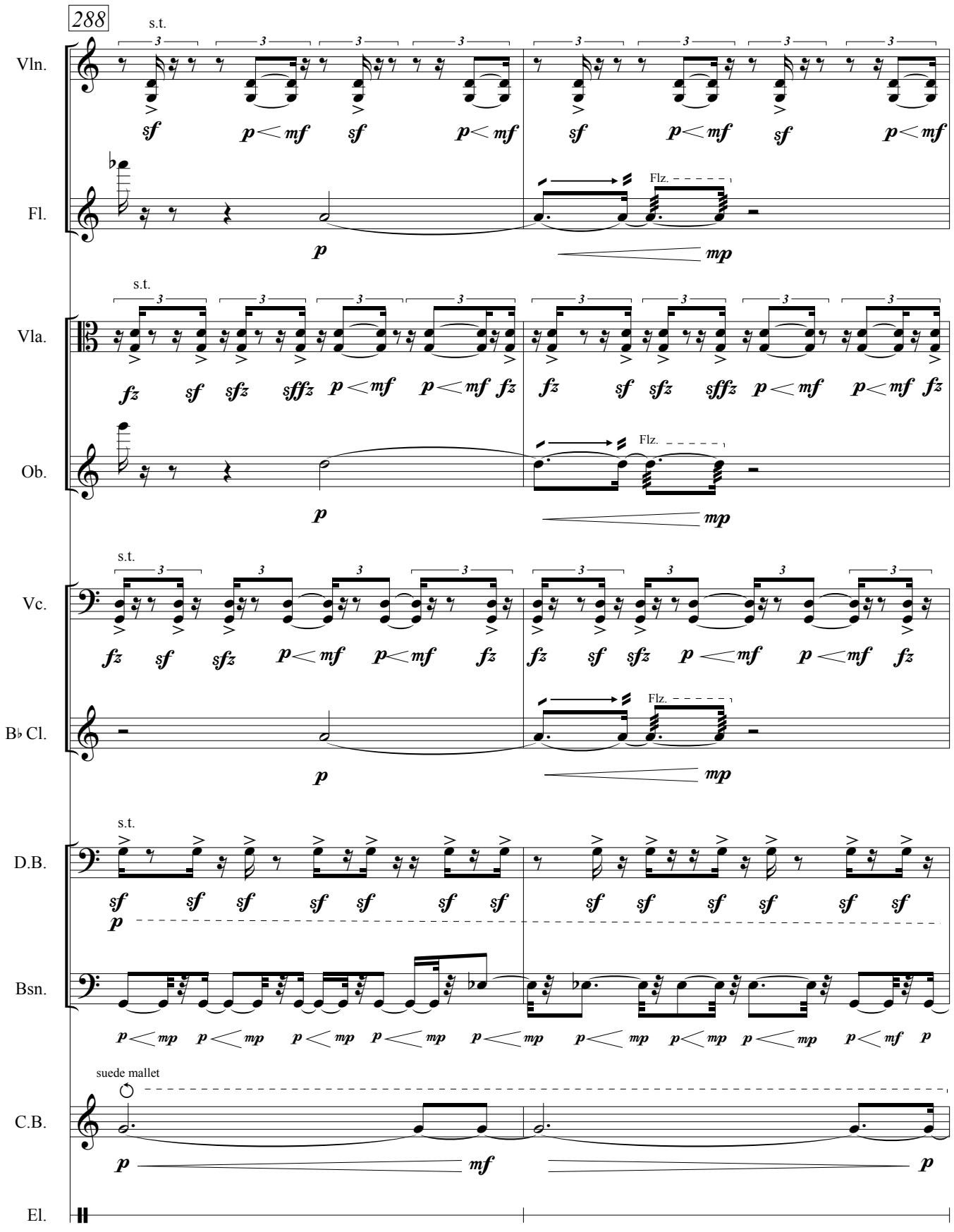

278
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
ord.
s.p.
m.s.p.
s.s.p.
sfz
sffz
p
mf
mp
f
ff
sp

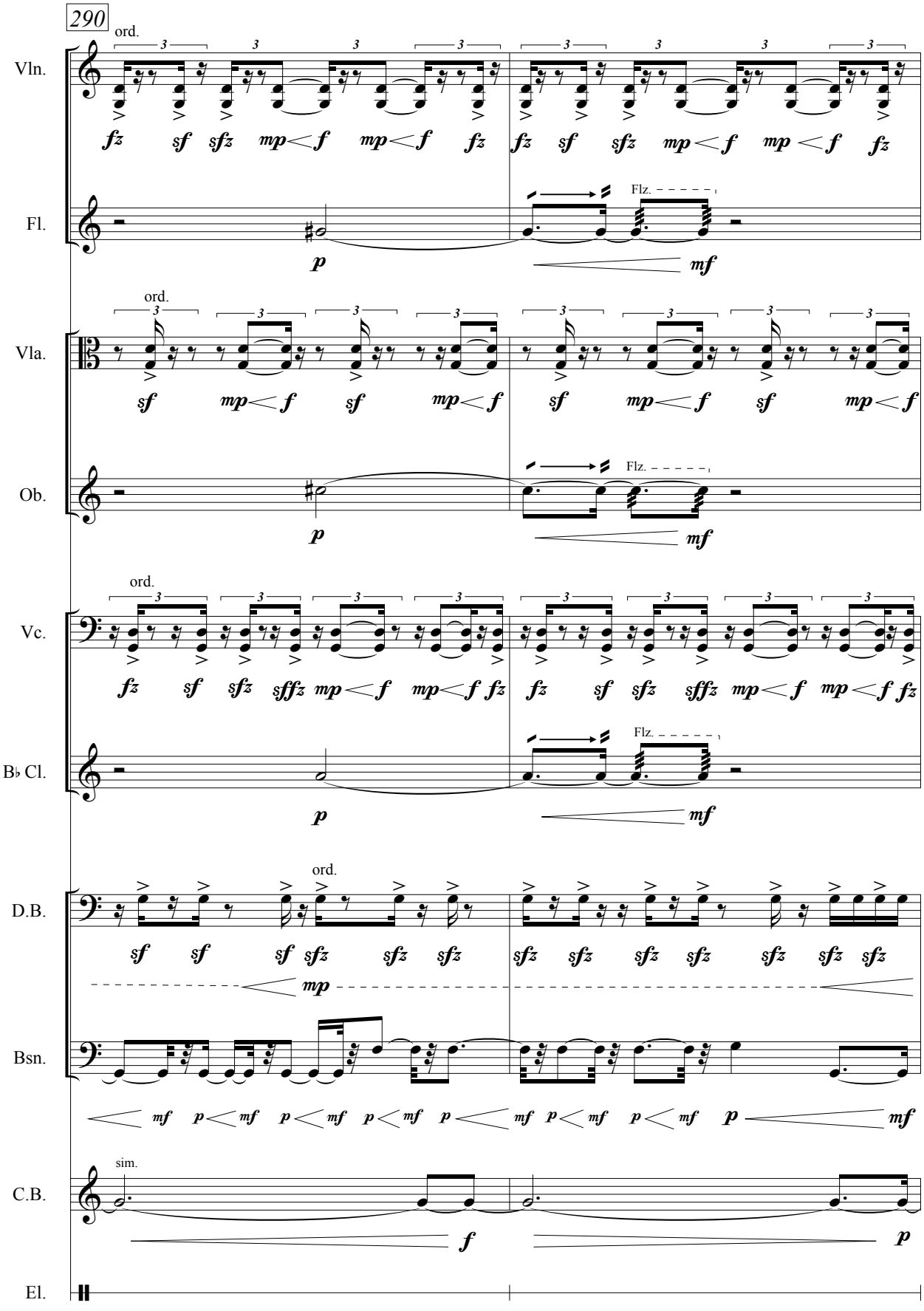

280
s.t.
Vln.
Fl.
m.s.t.
ord.
Vla.
Ob.
Vc.
s.t.
B♭ Cl.
D.B.
Bsn.
C.B.
El.

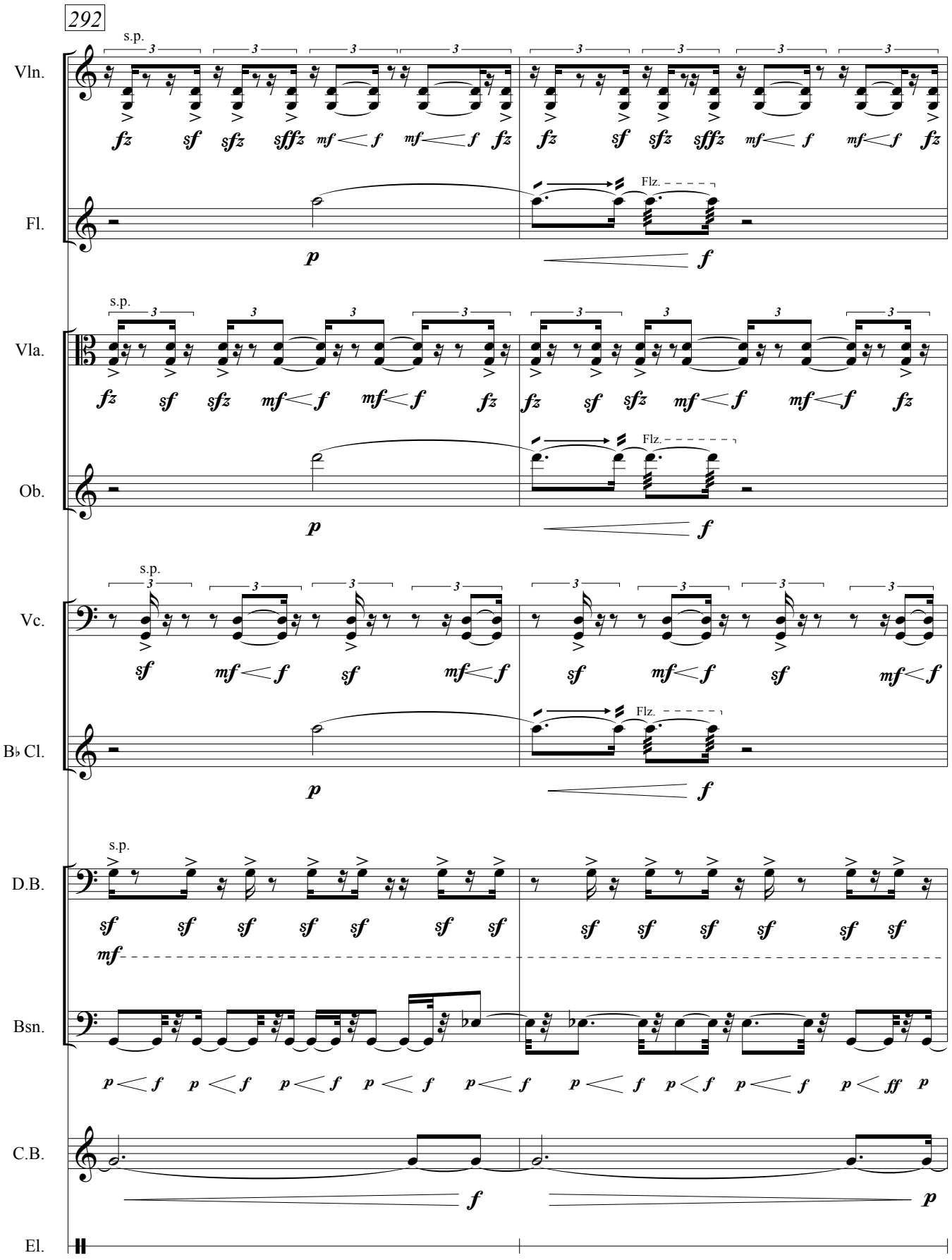

282
ord.
Vln.
Fl.
s.t.
s.p.
Vla.
Ob.
Vc.
ord.
B♭ Cl.
s.t.
s.p
D.B.
Bsn.
sim.
C.B.
El.

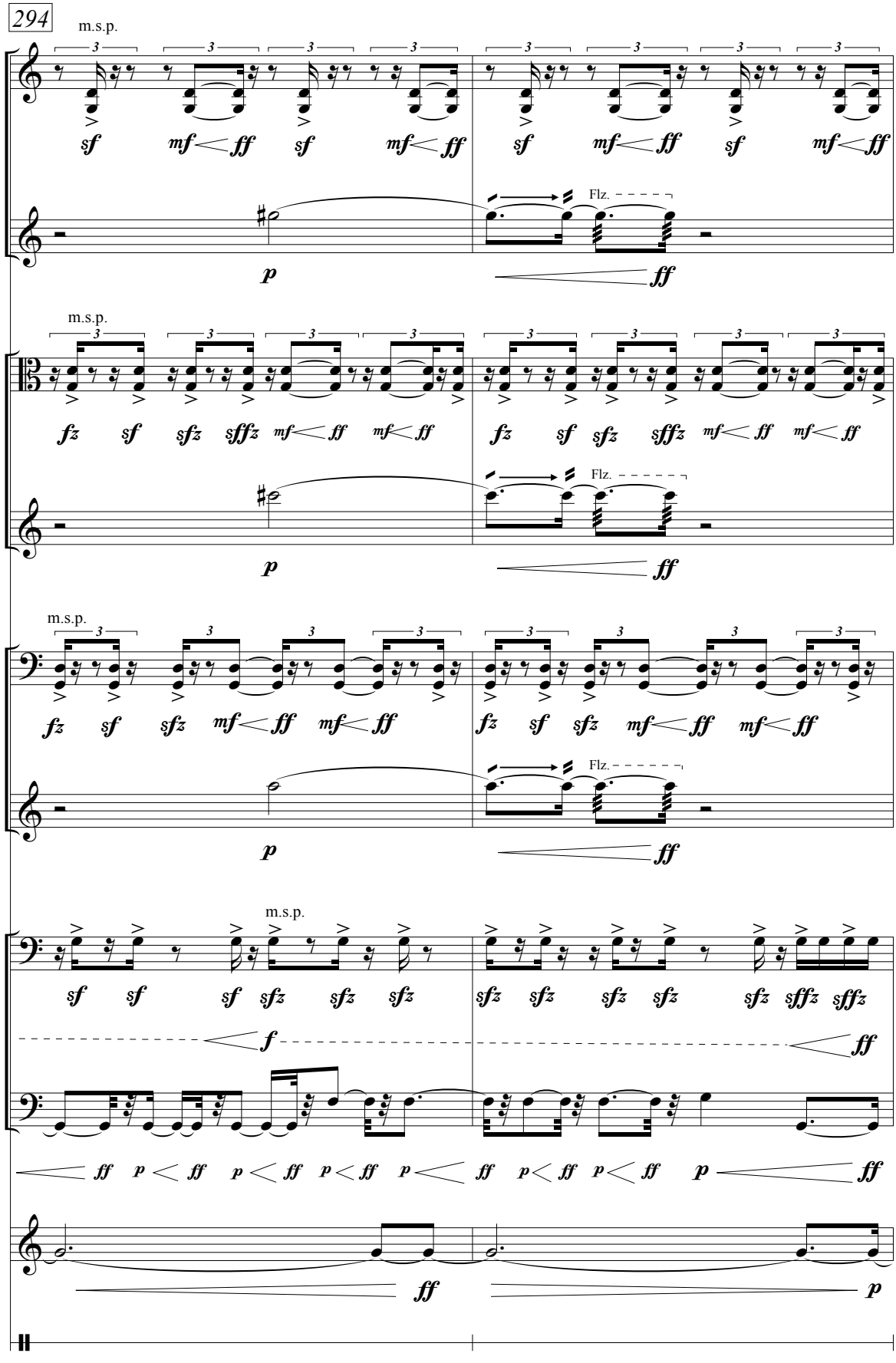

284
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.p.
ord.
sim.
f
sfz
mp
mf
p

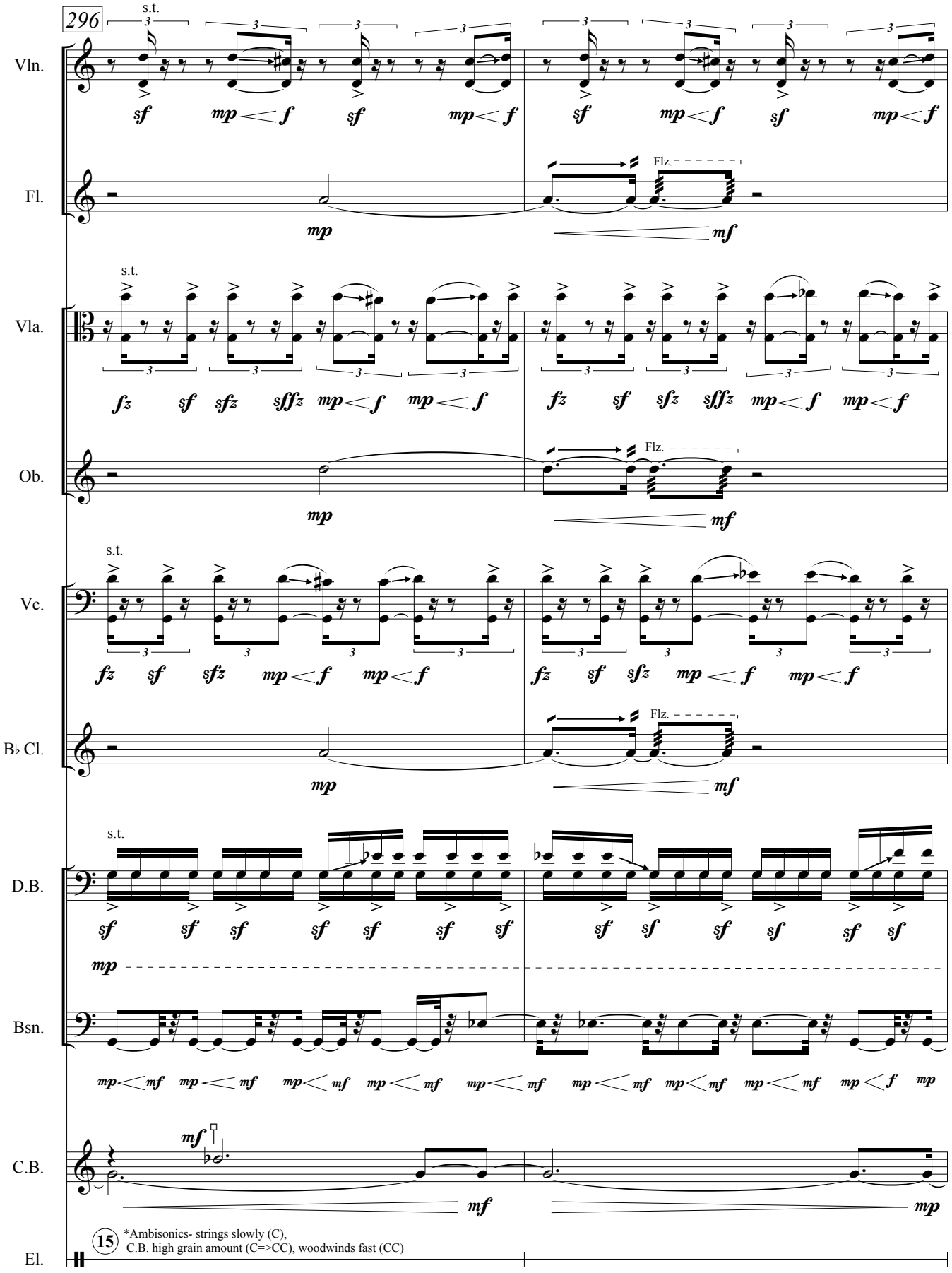

286
Vln.
m.s.p.
Fl.
Vla.
m.s.p.
Ob.
Vc.
m.s.p.
B♭ Cl.
D.B.
ord.
m.s.p.
Sim.
Bsn.
C.B.
sim.
El.

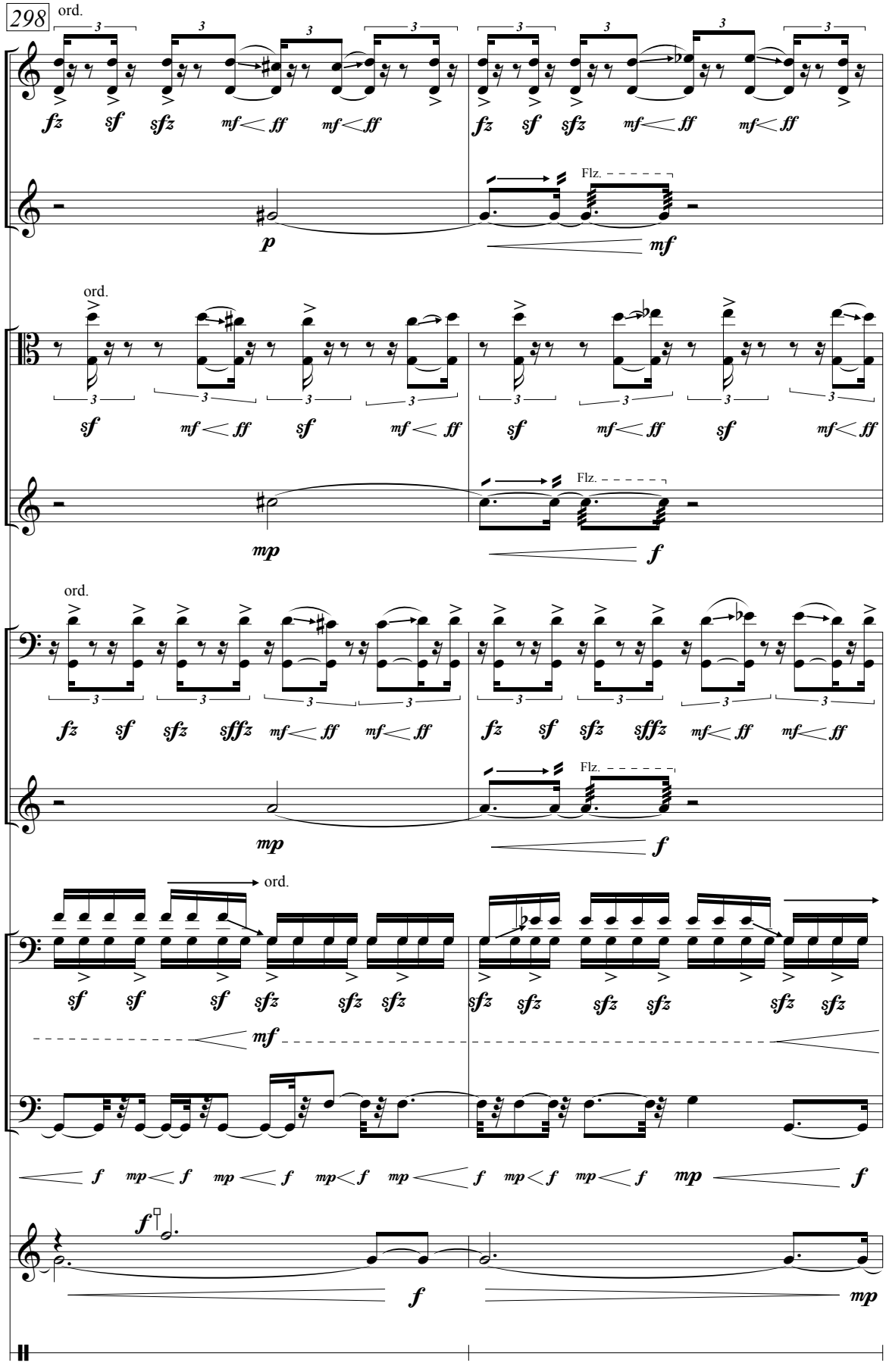

288
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
Flz.
suede mallet

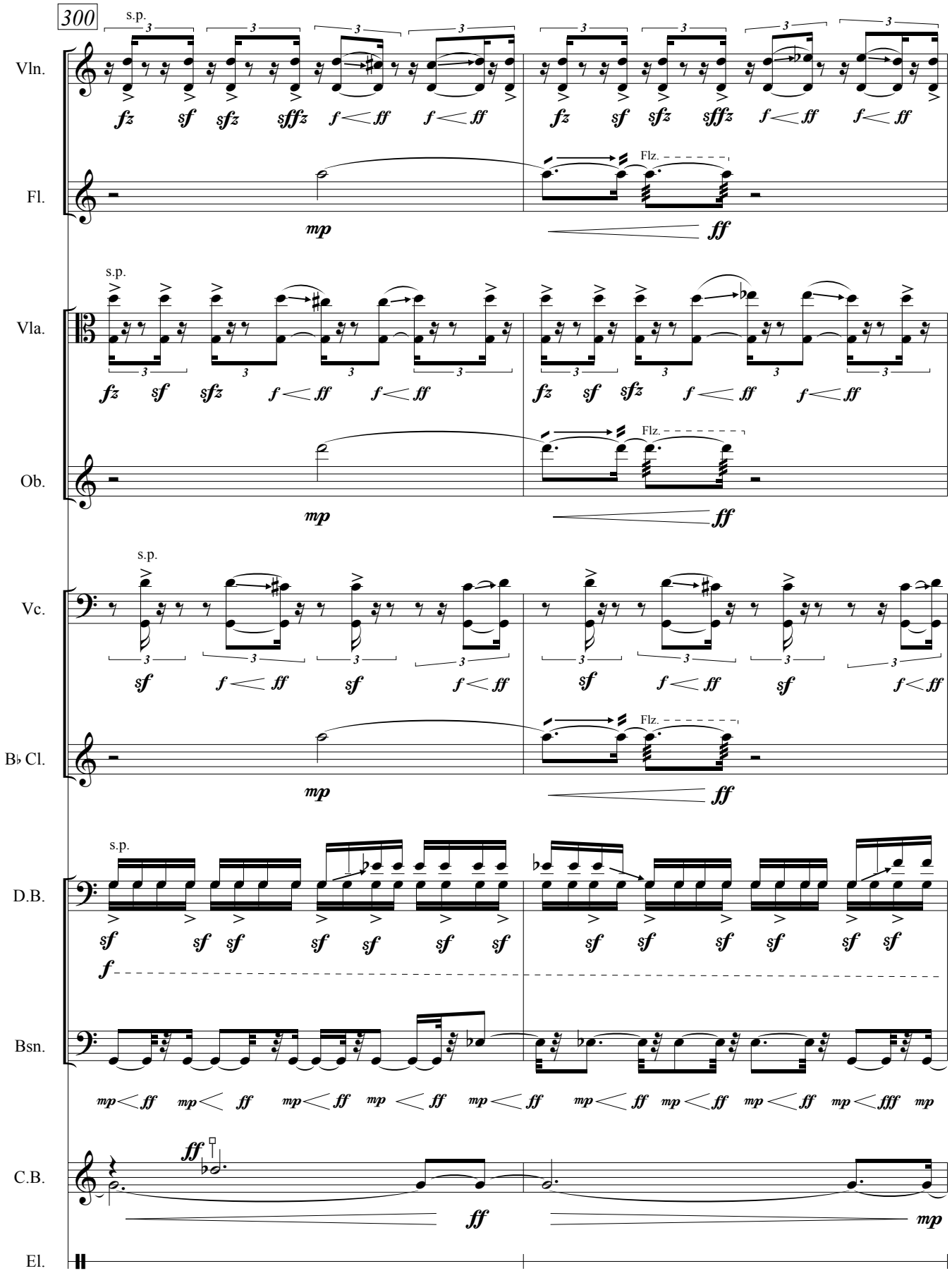

290
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
ord.
sim.
Flz.

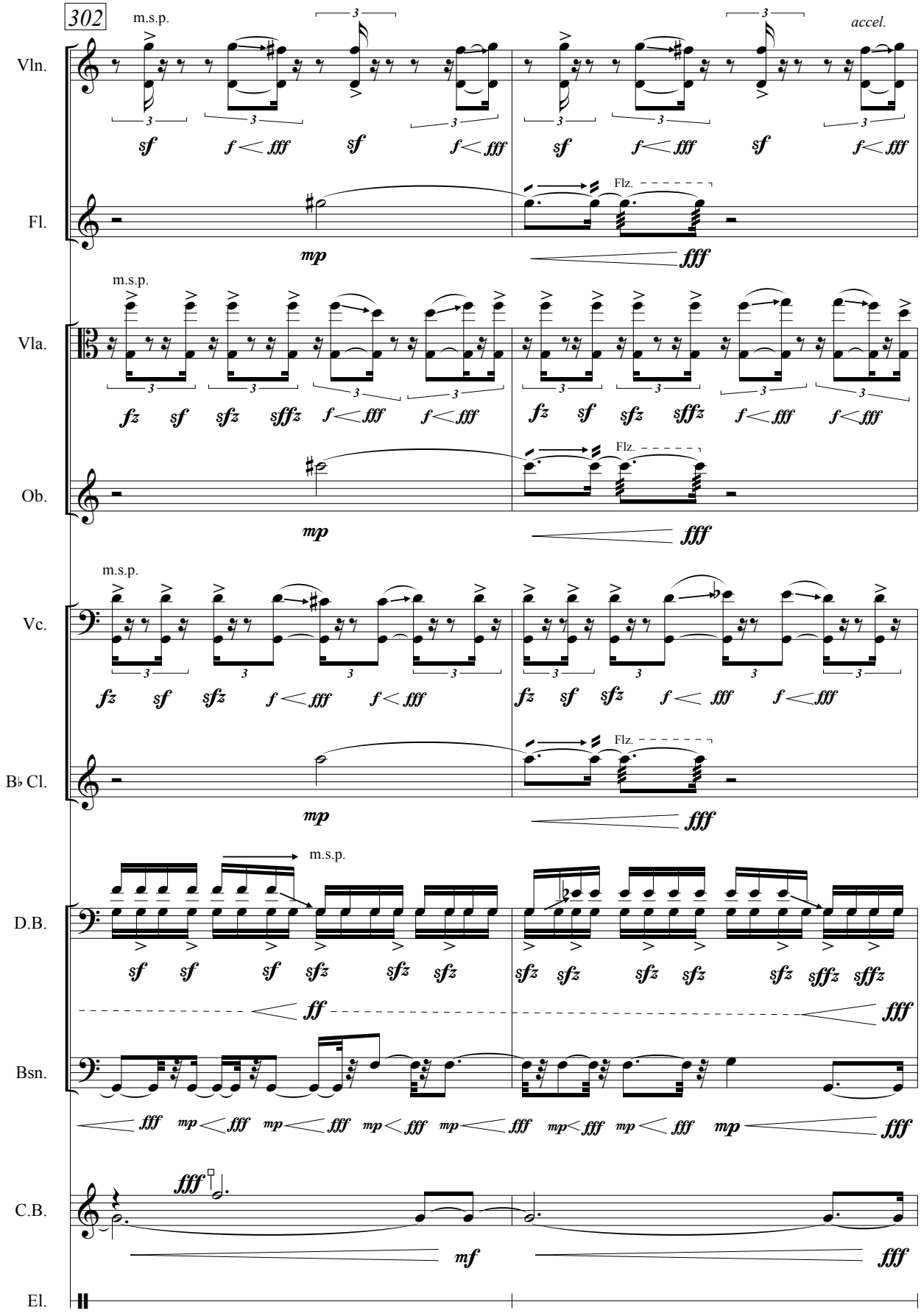

292
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.p.
Flz.

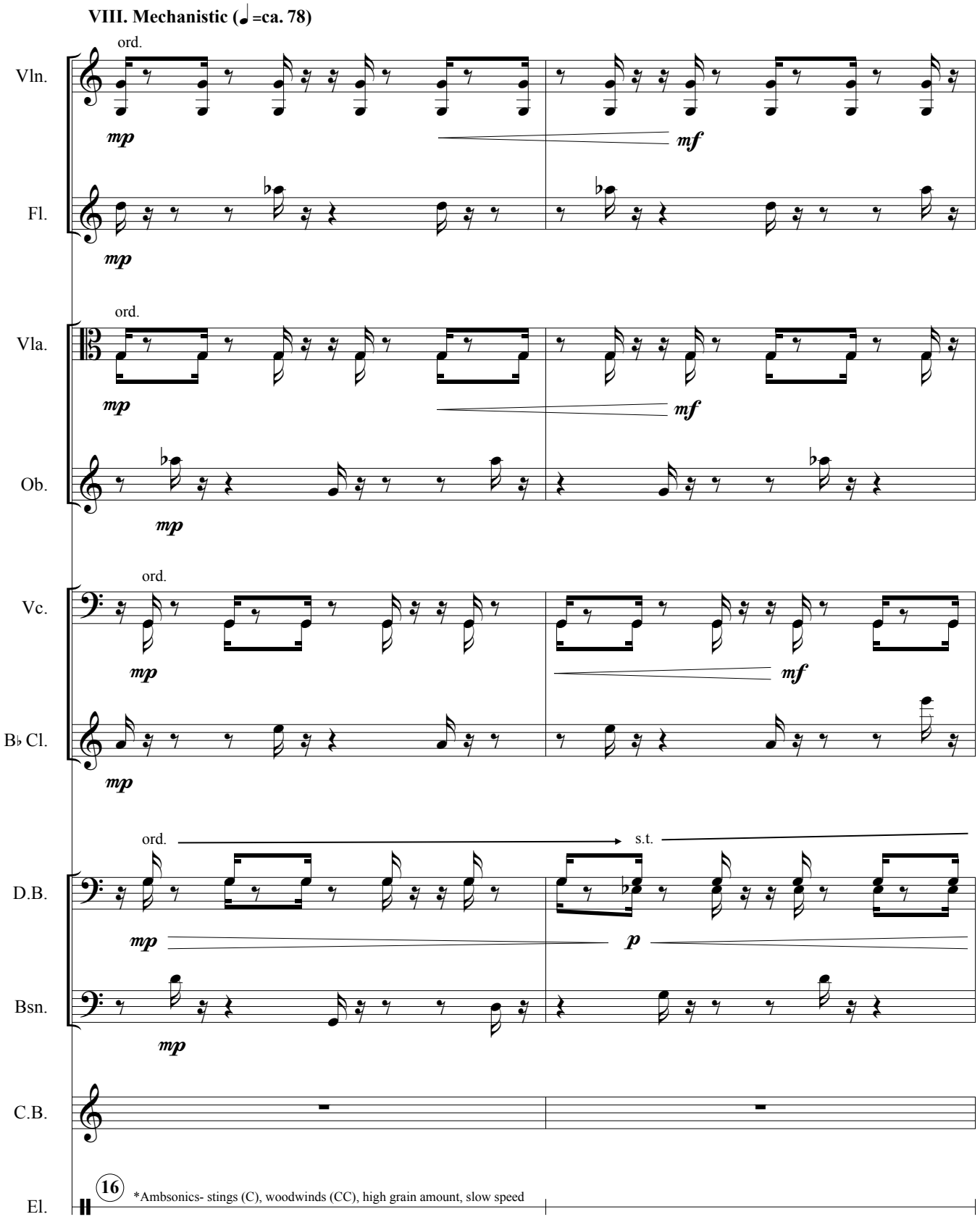

294
m.s.p.
Vln.
Fl.
Flz.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.

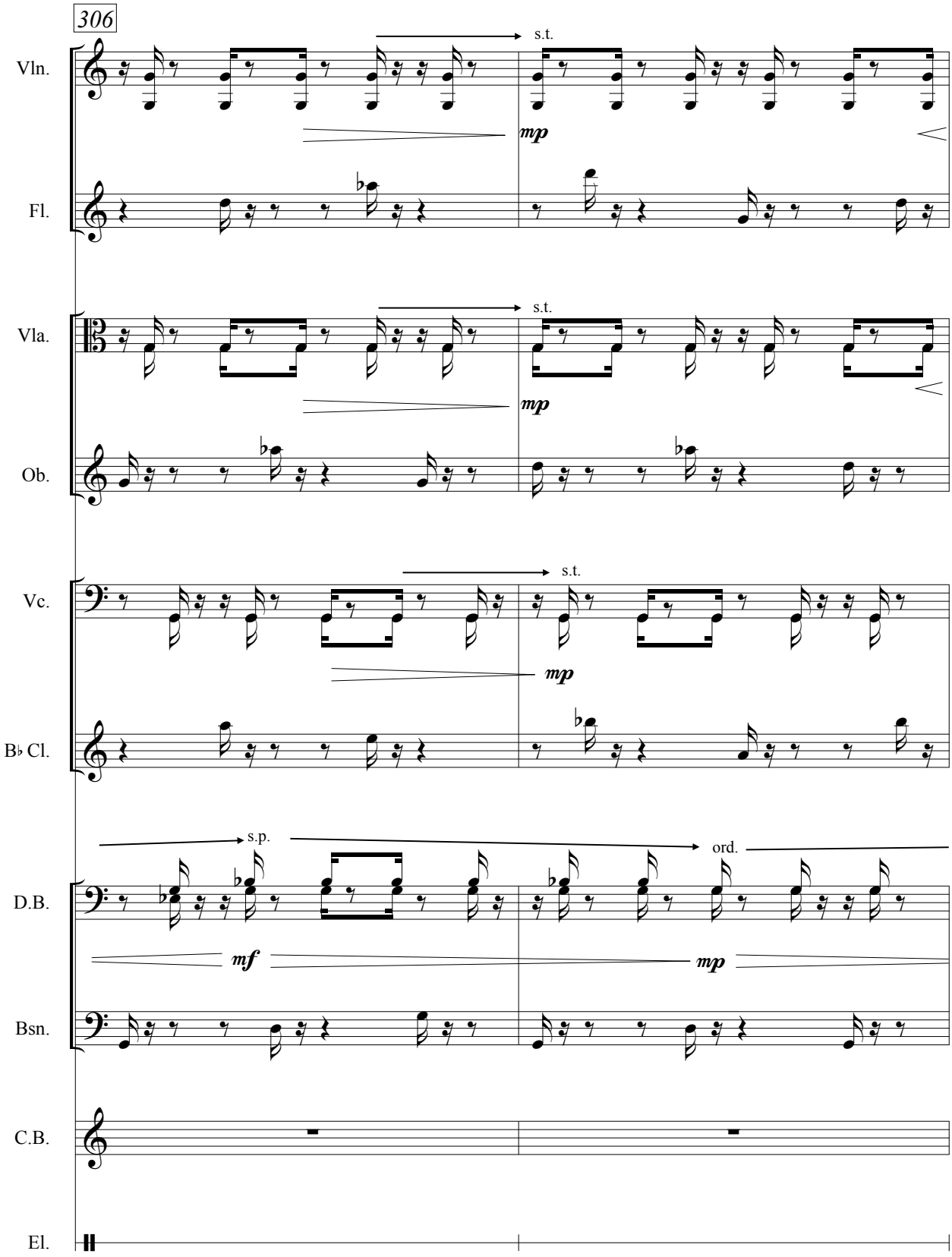

296
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
Flz.
15
*Ambisonics- strings slowly (C),
C.B. high grain amount (C=>CC), woodwinds fast (CC)

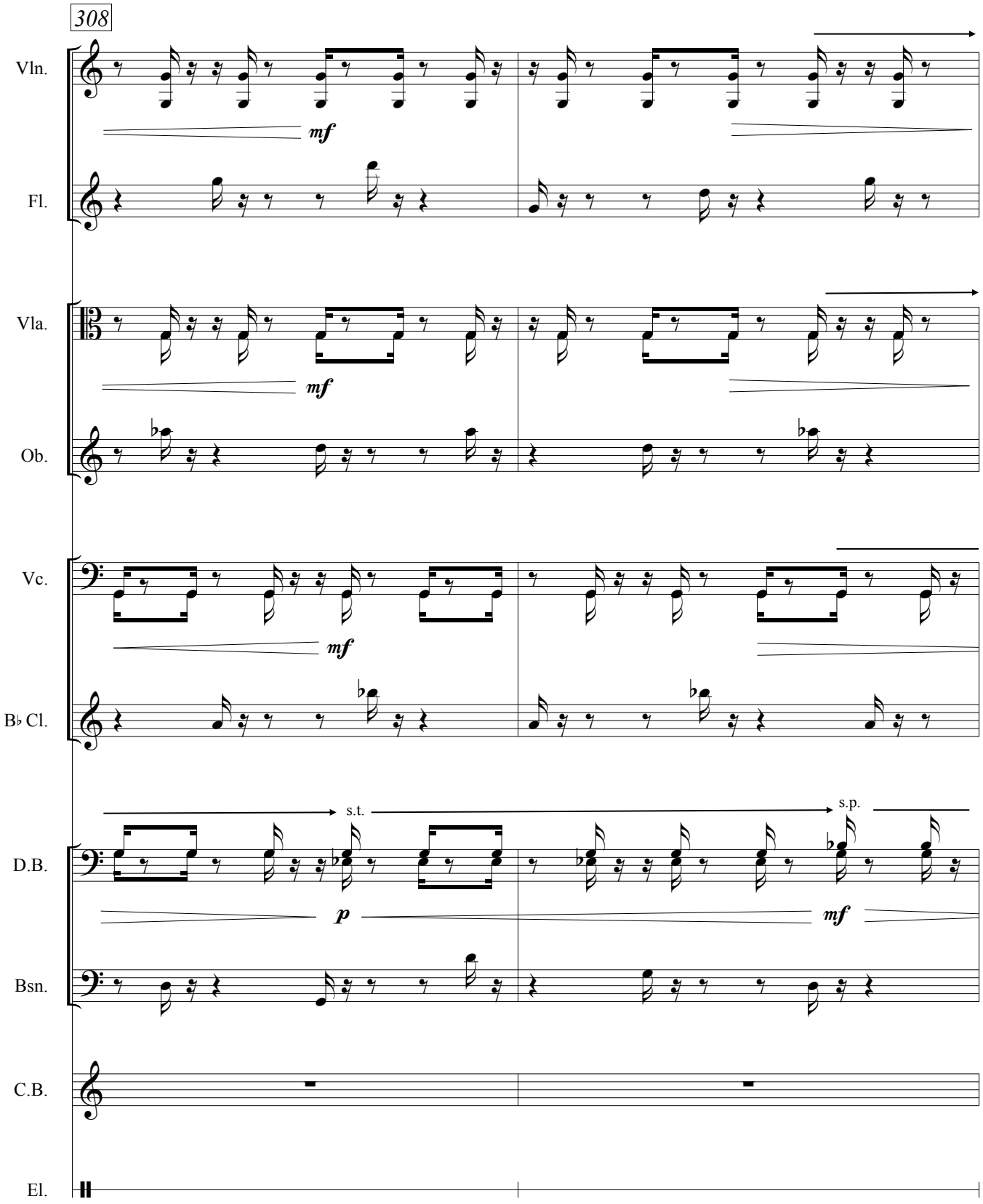

298
ord.
Vln.
Fl.
Flz.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.

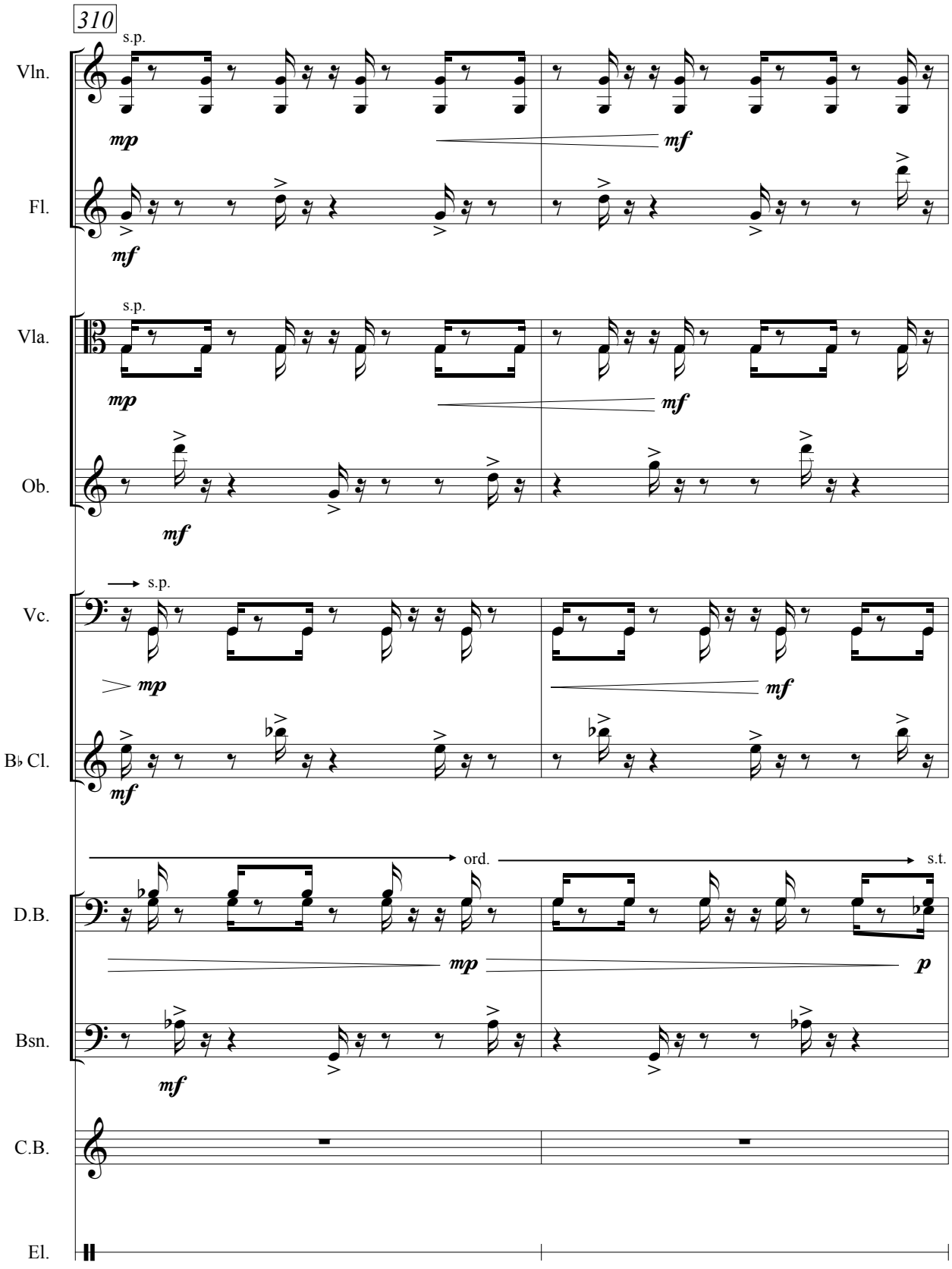

300
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.p.
Flz.

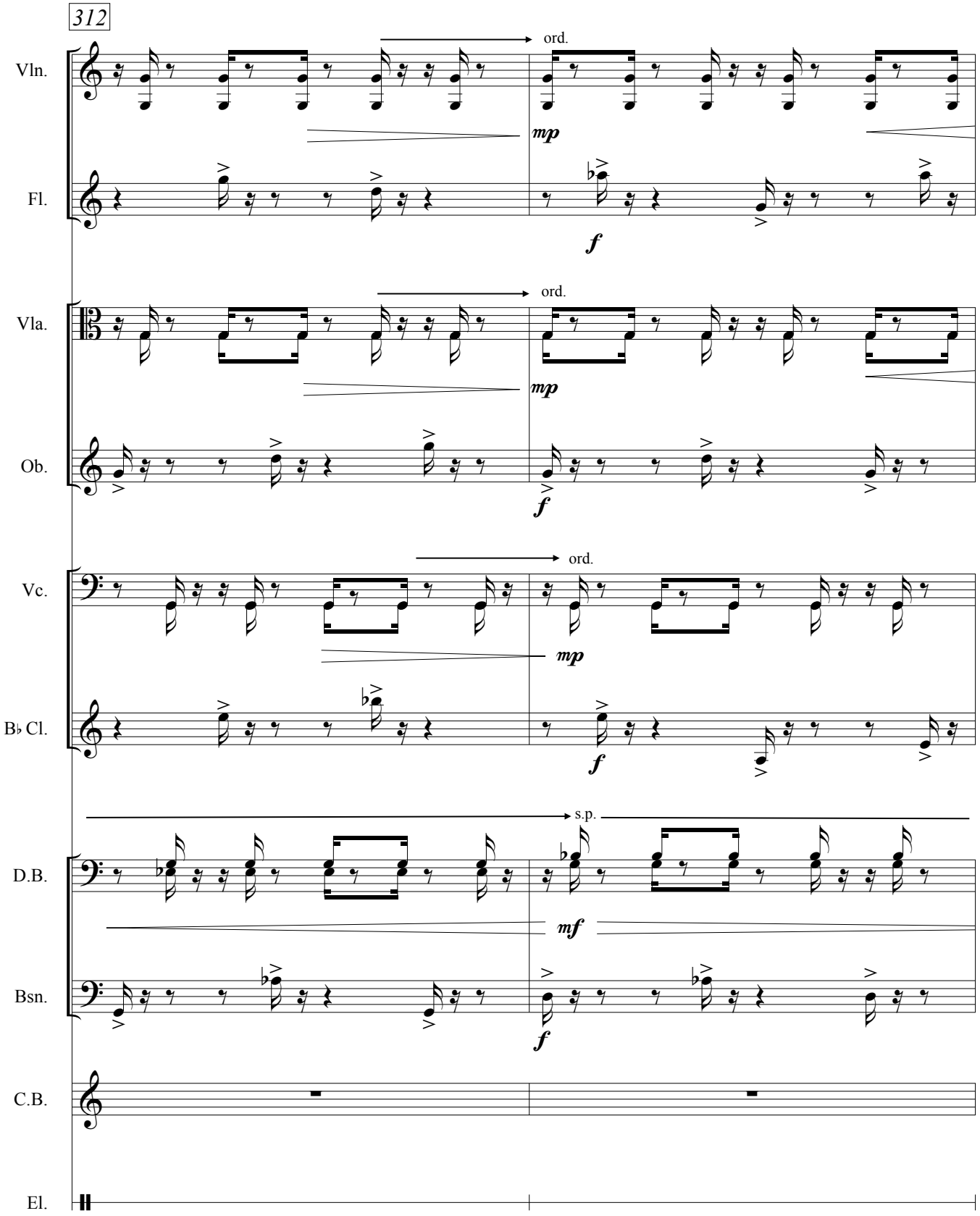

302
m.s.p.
accel.
Vln.
Fl.
Flz.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.

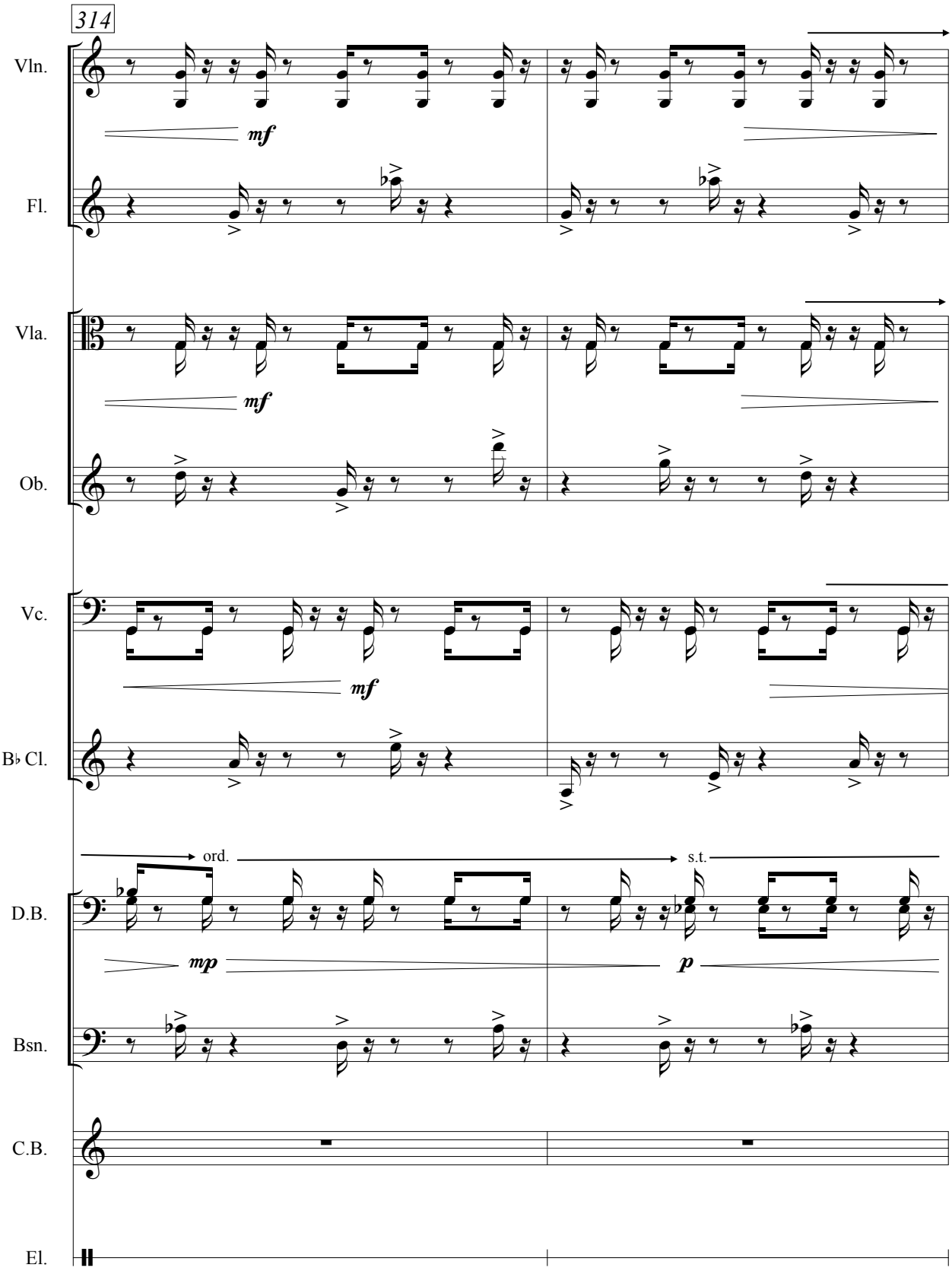

VIII. Mechanistic (♩=ca. 78)
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
ord.
s.t.
mp
mf
p
16
*Ambsonics- stings (C), woodwinds (CC), high grain amount, slow speed

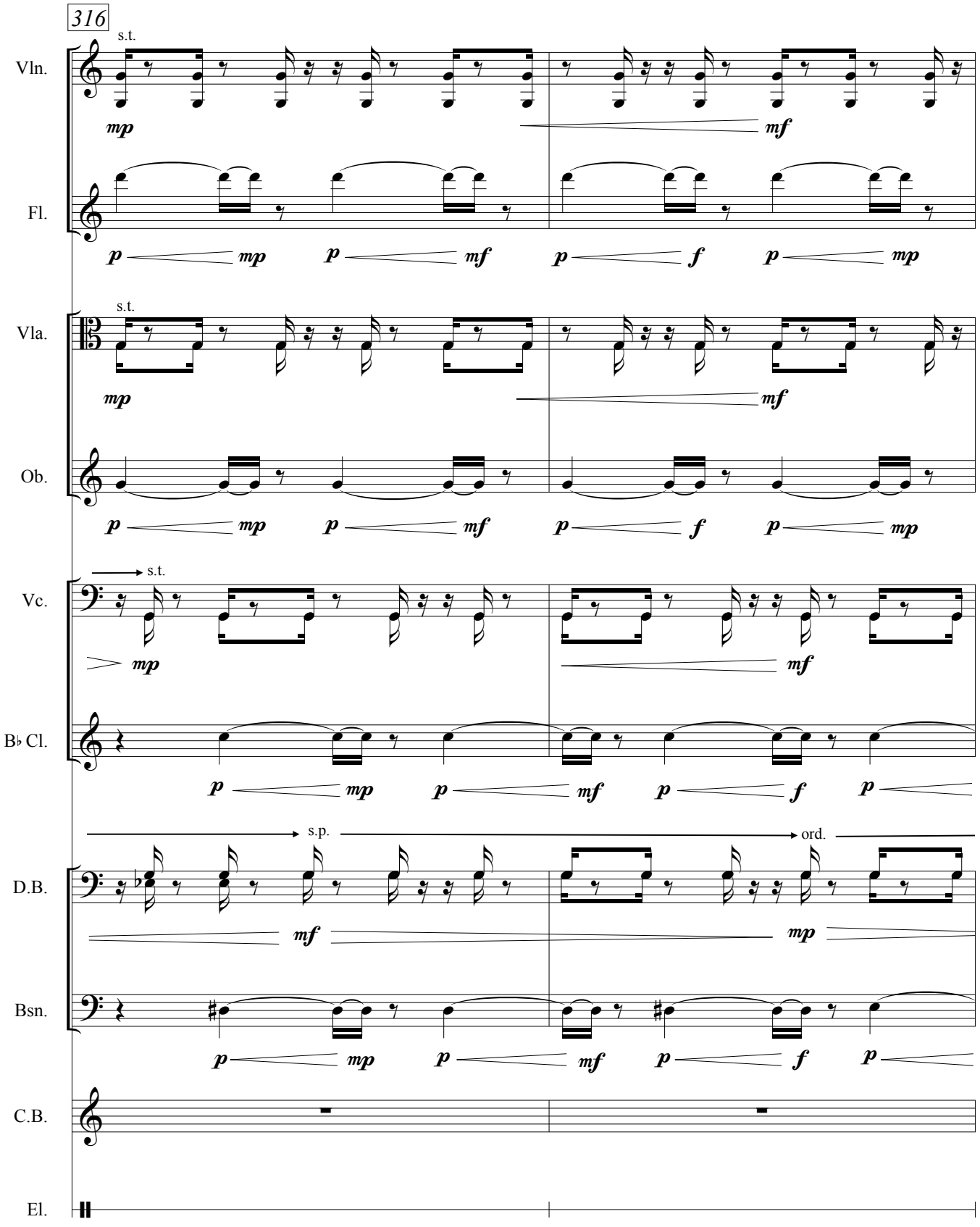

306
Vln.
s.t.
mp
Fl.
Vla.
s.t.
mp
Ob.
Vc.
s.t.
mp
B♭ Cl.
s.p.
ord.
D.B.
mf
mp
Bsn.
C.B.
El.

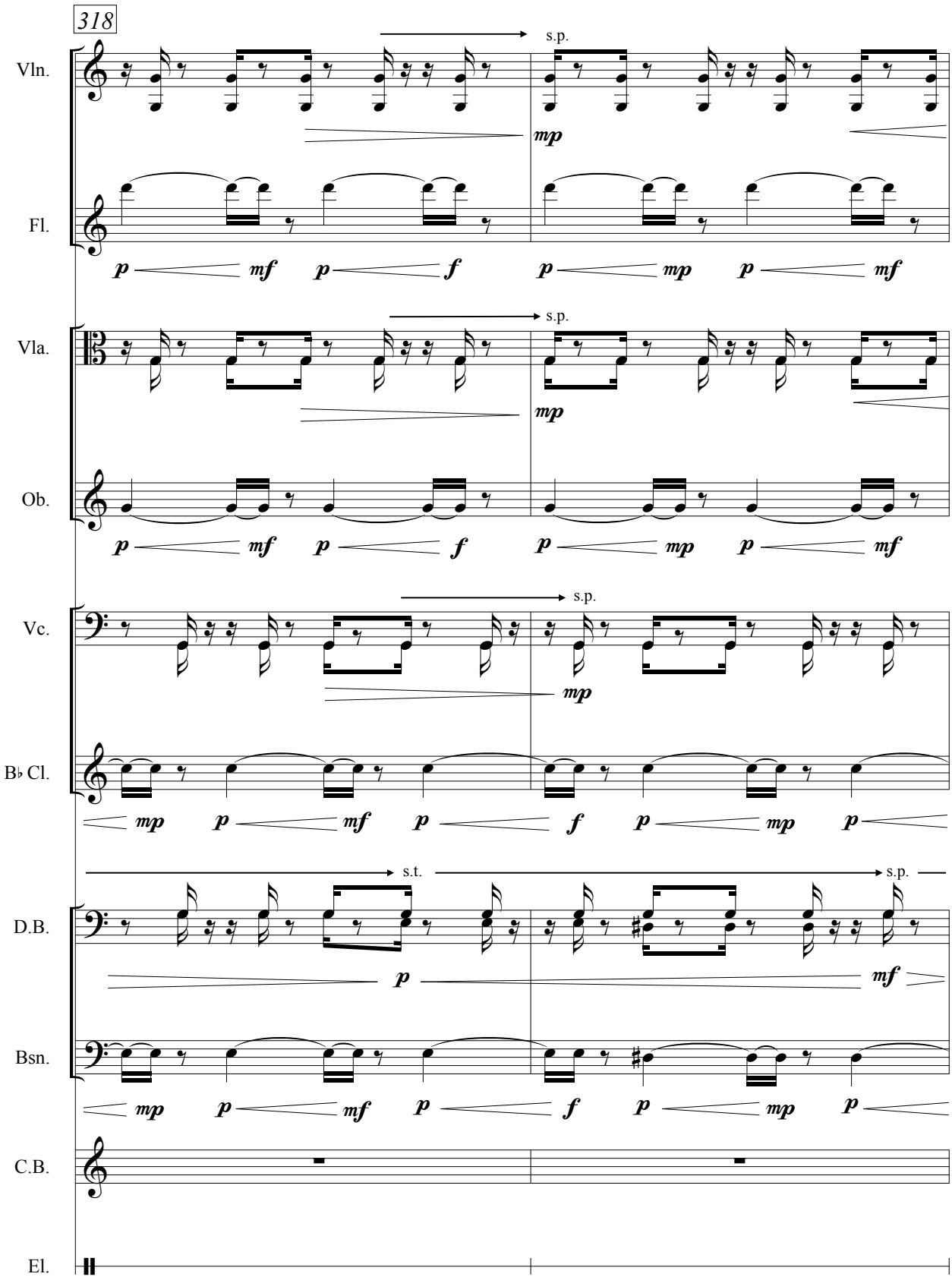

308
Vln.
mf
Fl.
Vla.
mf
Ob.
Vc.
mf
B♭ Cl.
s.t.
s.p.
D.B.
p
mf
Bsn.
C.B.
El.

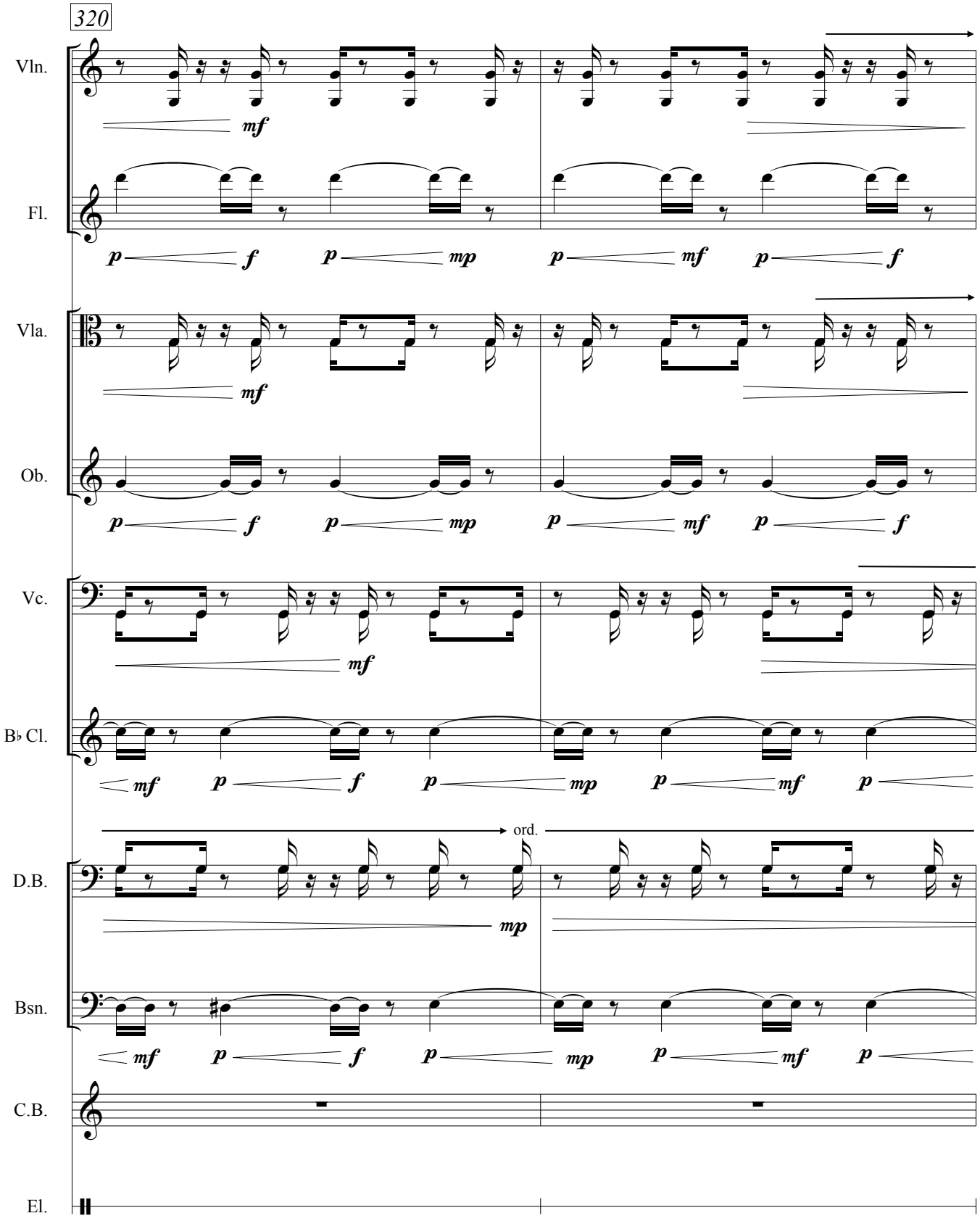

310
Vln.
s.p.
mp
mf
Fl.
mf
Vla.
s.p.
mp
mf
Ob.
mf
Vc.
s.p.
mp
mf
B♭ Cl.
mf
D.B.
ord.
s.t.
mp
p
Bsn.
mf
C.B.
El.

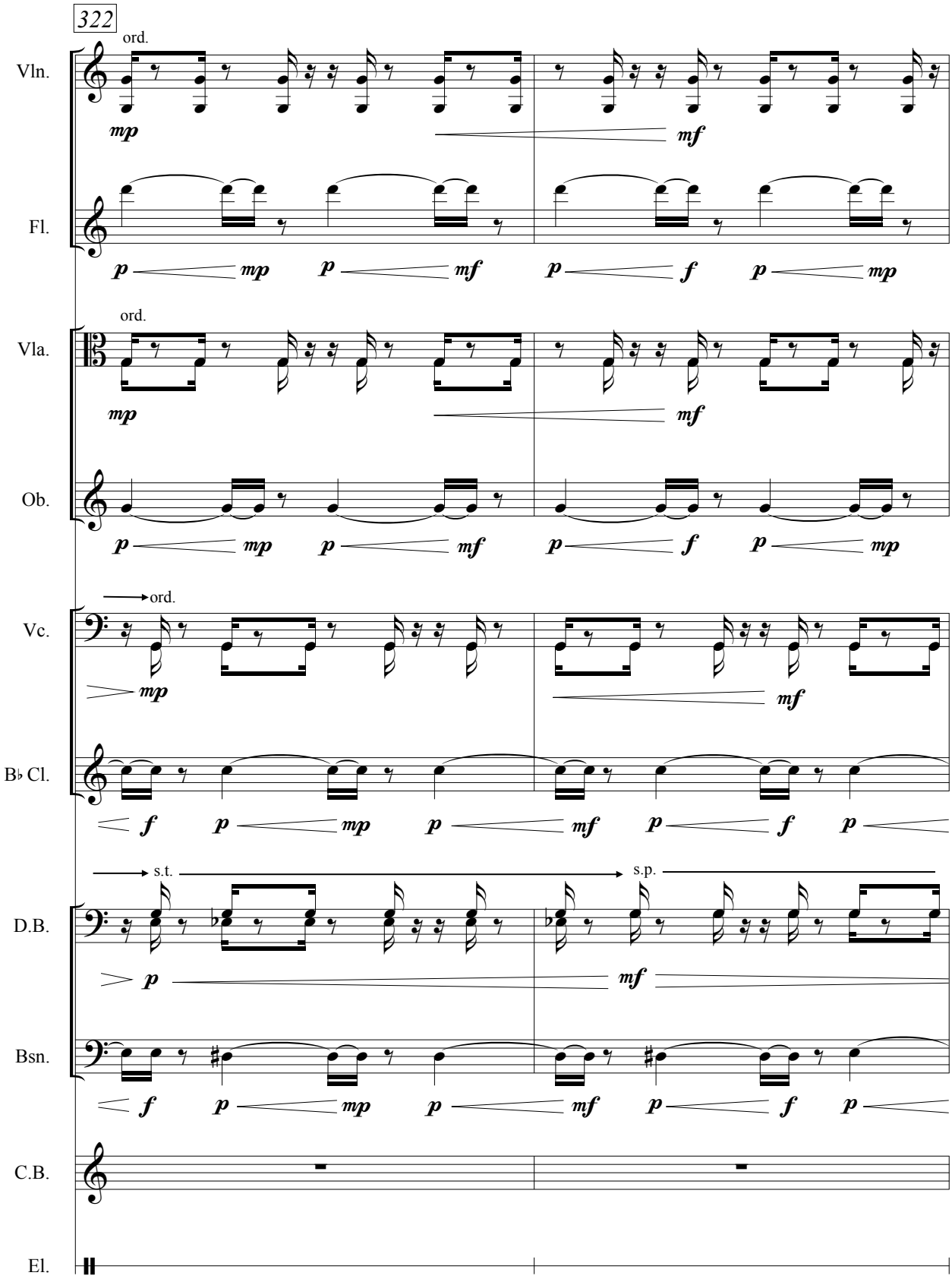

312
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
ord.
mp
f
s.p.
mf

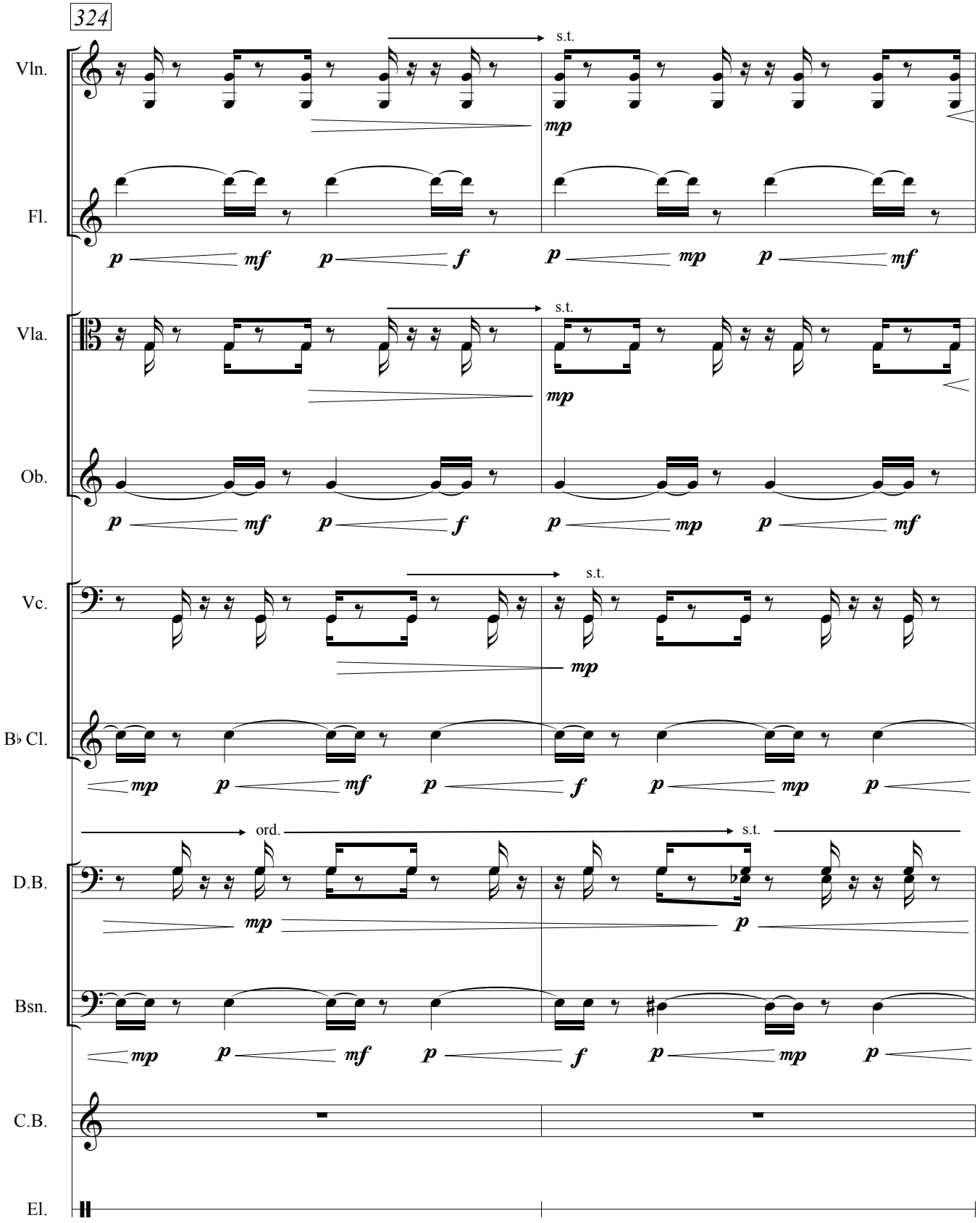

314
Vln.
mf
Fl.
Vla.
mf
Ob.
Vc.
mf
B♭ Cl.
ord.
s.t.
D.B.
mp
p
Bsn.
C.B.
El.

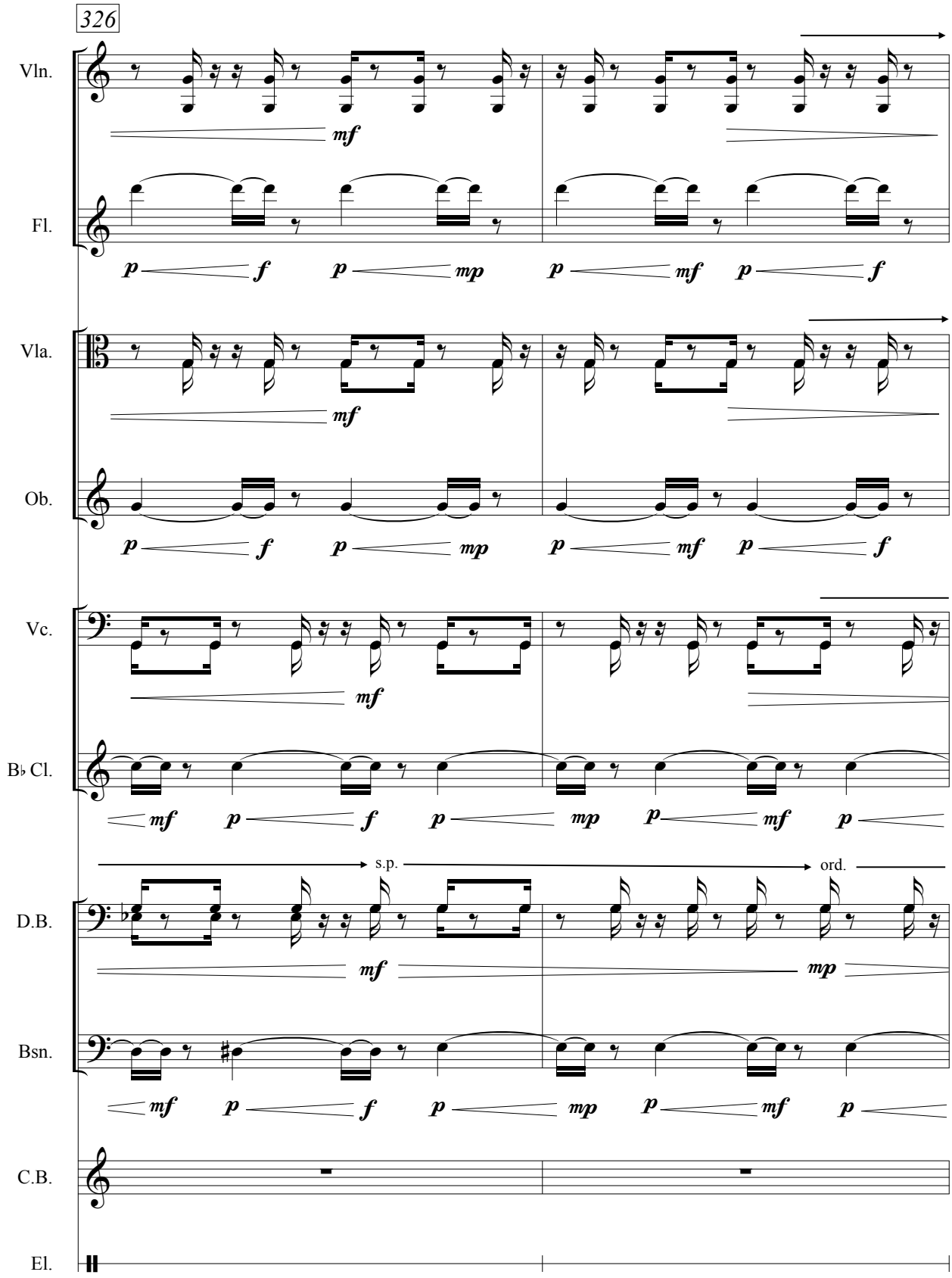

316
Vln.
s.t.
mp
mf
Fl.
p mp p mf p f p mp
Vla.
s.t.
mp
mf
Ob.
p mp p mf p f p mp
Vc.
s.t.
mp
mf
B♭ Cl.
p mp p mf p f p
D.B.
s.p.
ord.
mf
mp
Bsn.
p mp p mf p f p
C.B.
El.

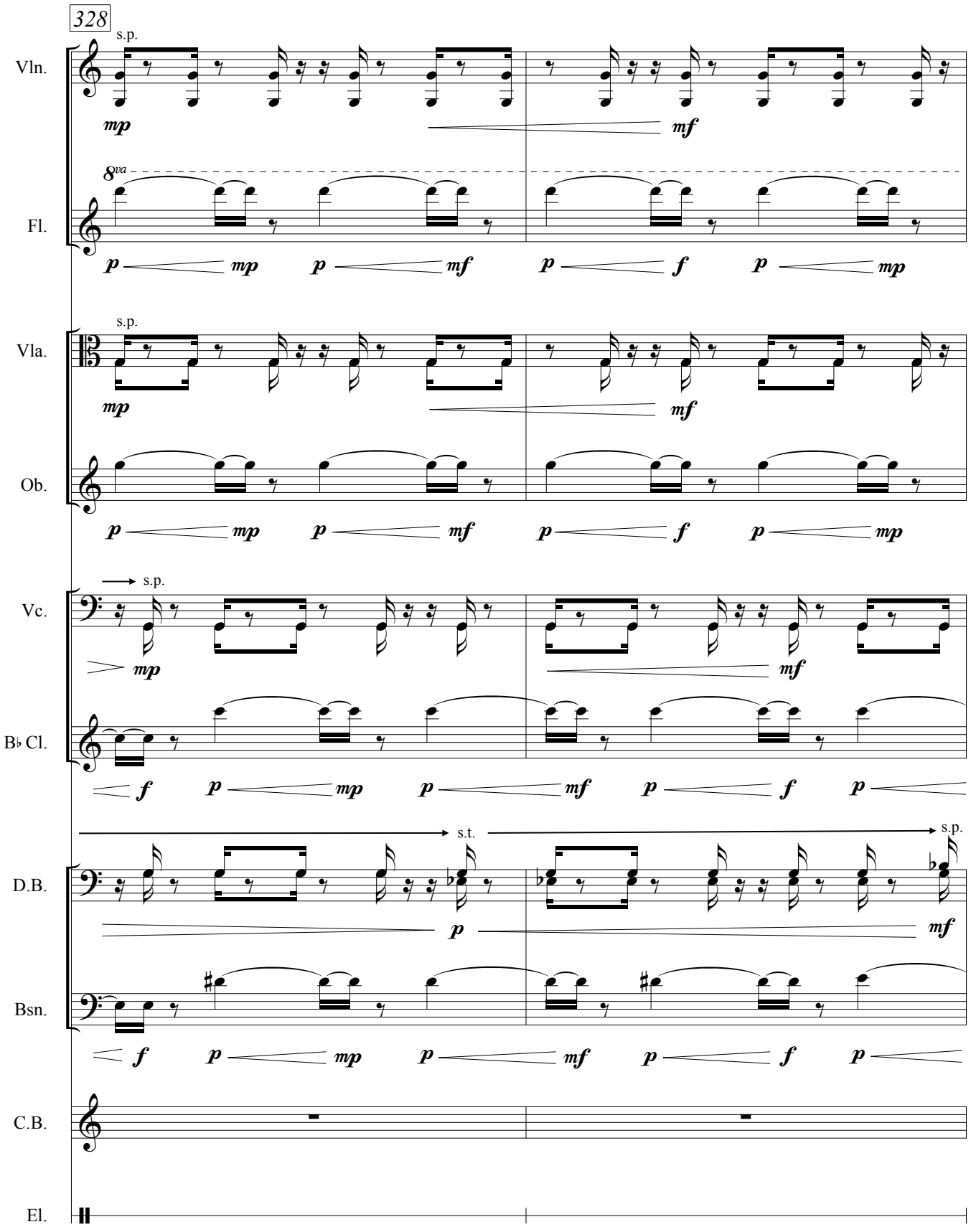

318
Vln.
s.p.
mp
Fl.
p mf p f p mp p mf
Vla.
s.p.
mp
Ob.
p mf p f p mp p mf
Vc.
s.p.
mp
B♭ Cl.
mp p mf p f p mp p
s.t.
s.p.
D.B.
p
mf
Bsn.
mp p mf p f p mp p
C.B.
El.

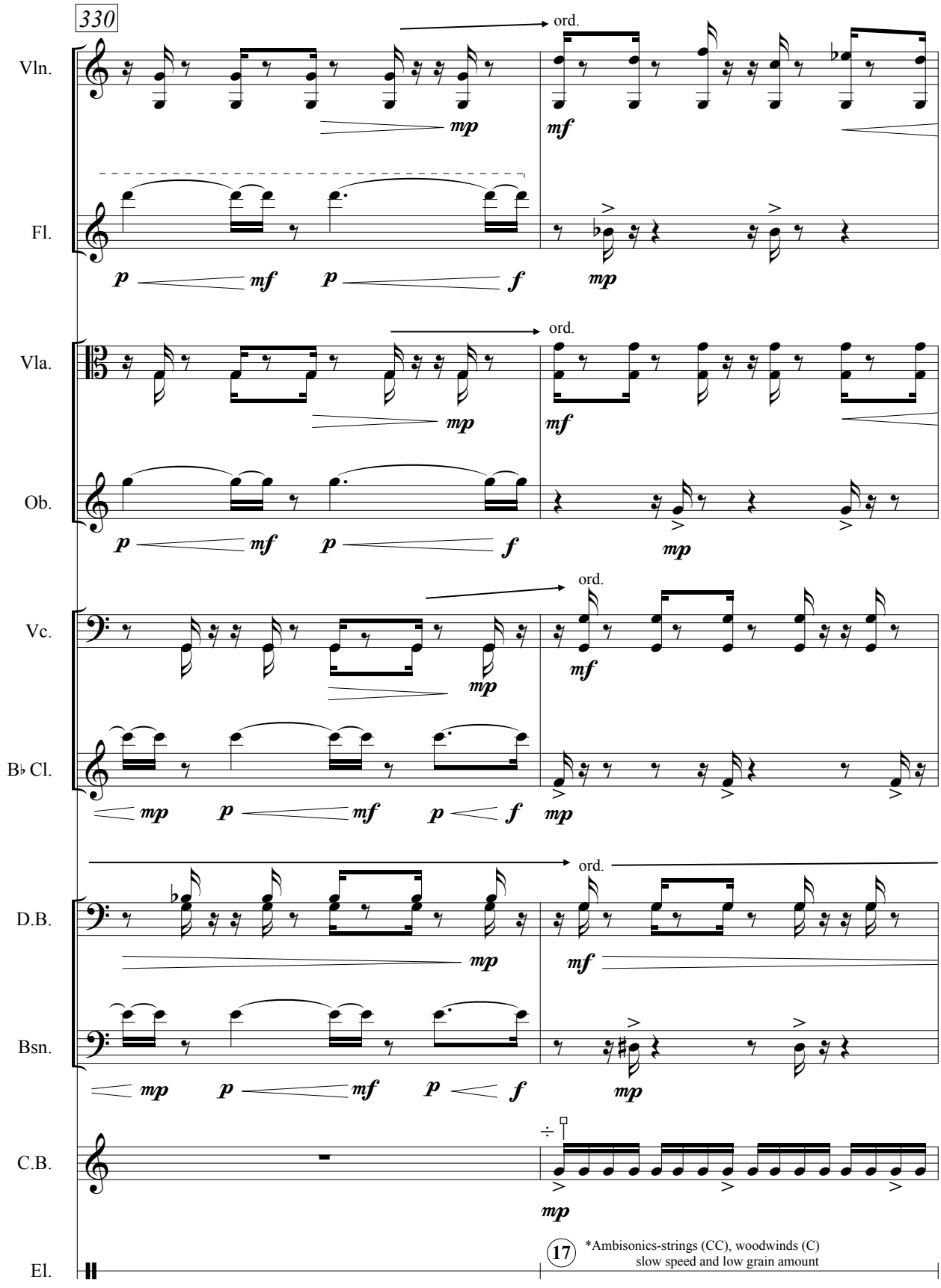

320
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
ord.

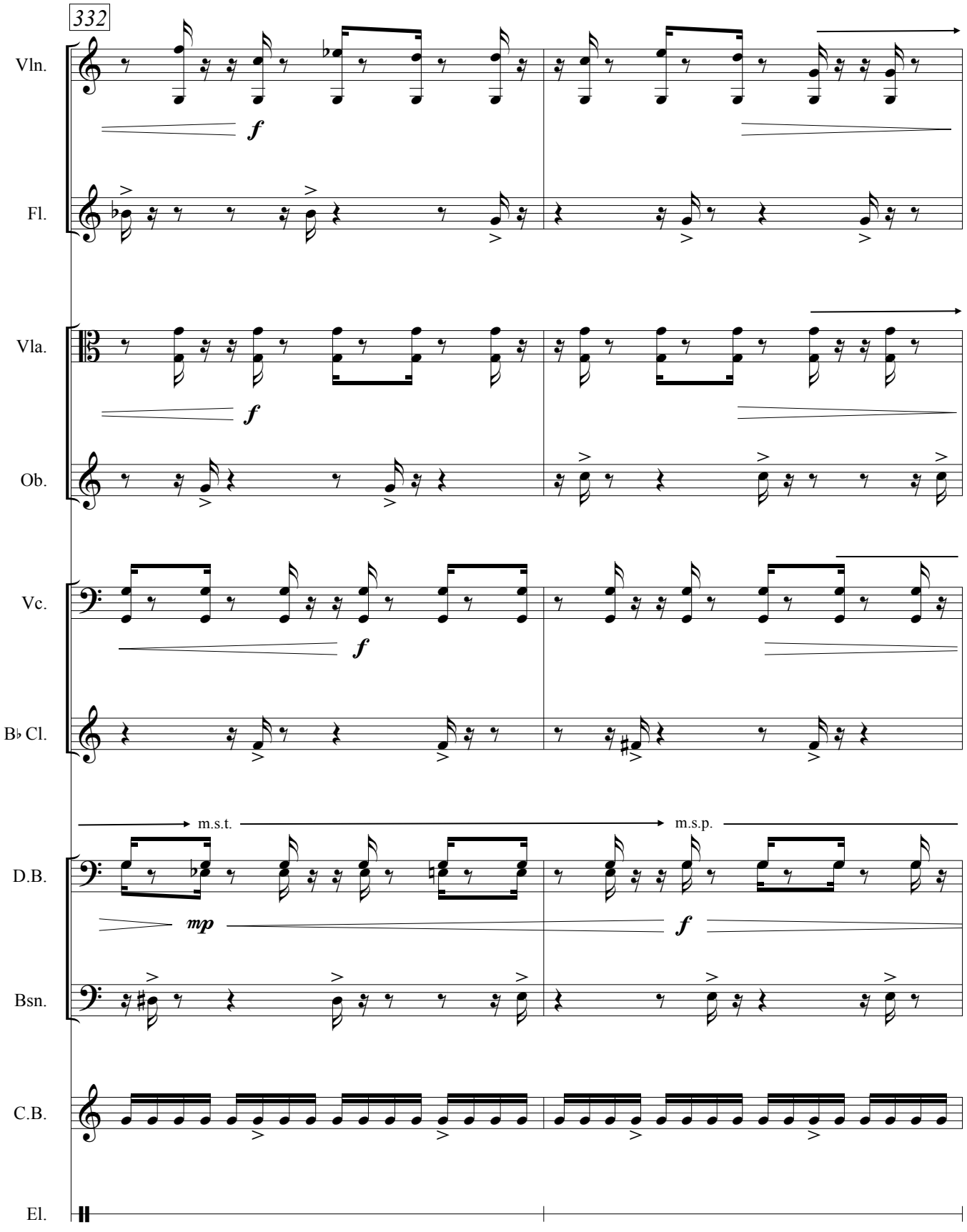

322
Vln.
ord.
mp
mf
Fl.
p mp p mf p f p mp
Vla.
ord.
mp
mf
Ob.
p mp p mf p f p mp
Vc.
ord.
mp
mf
B♭ Cl.
f p mp p mf p f p
D.B.
s.t.
s.p.
p
mf
Bsn.
f p mp p mf p f p
C.B.
El.

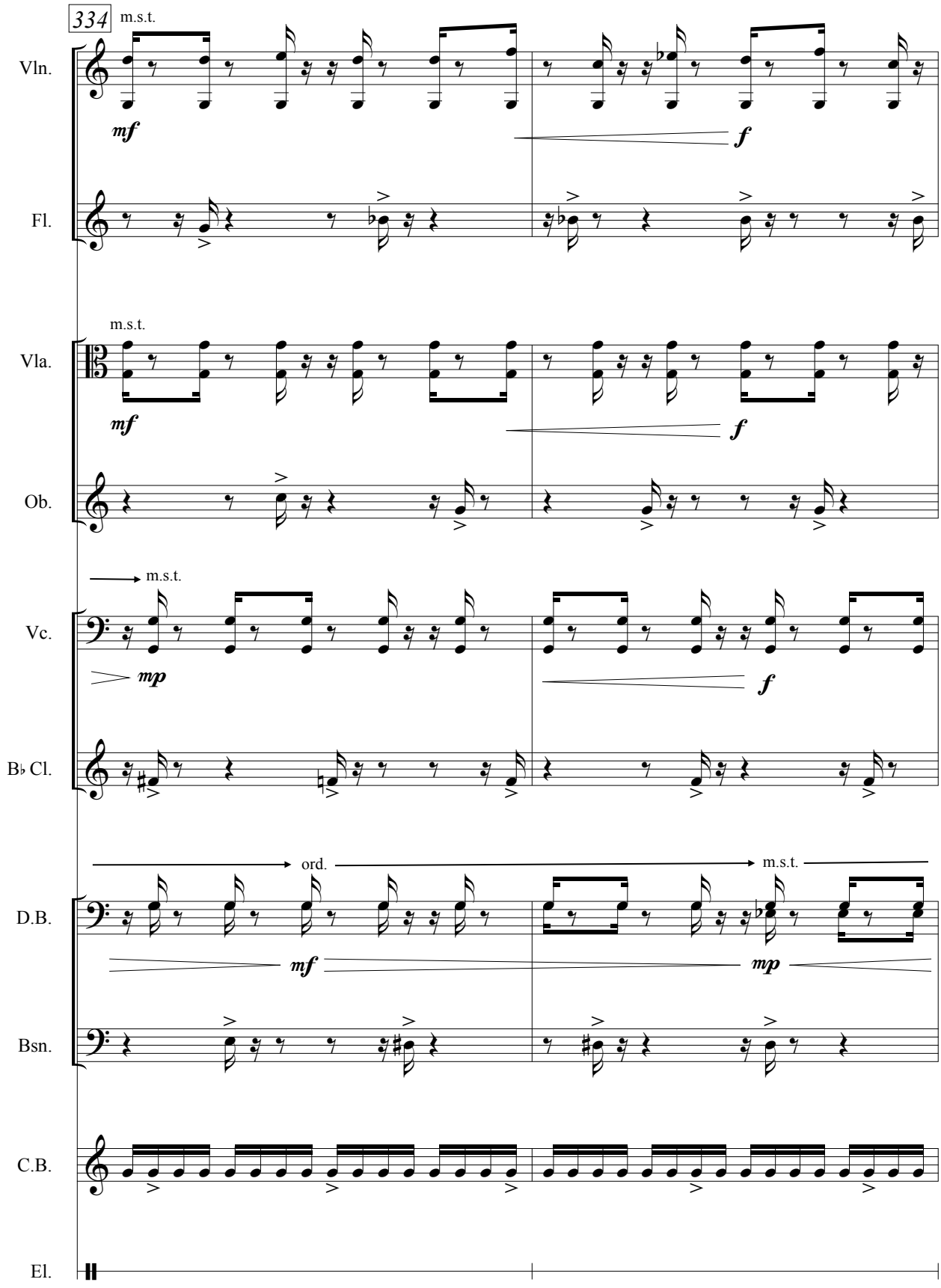

324
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
ord.
mp
p
mf
f

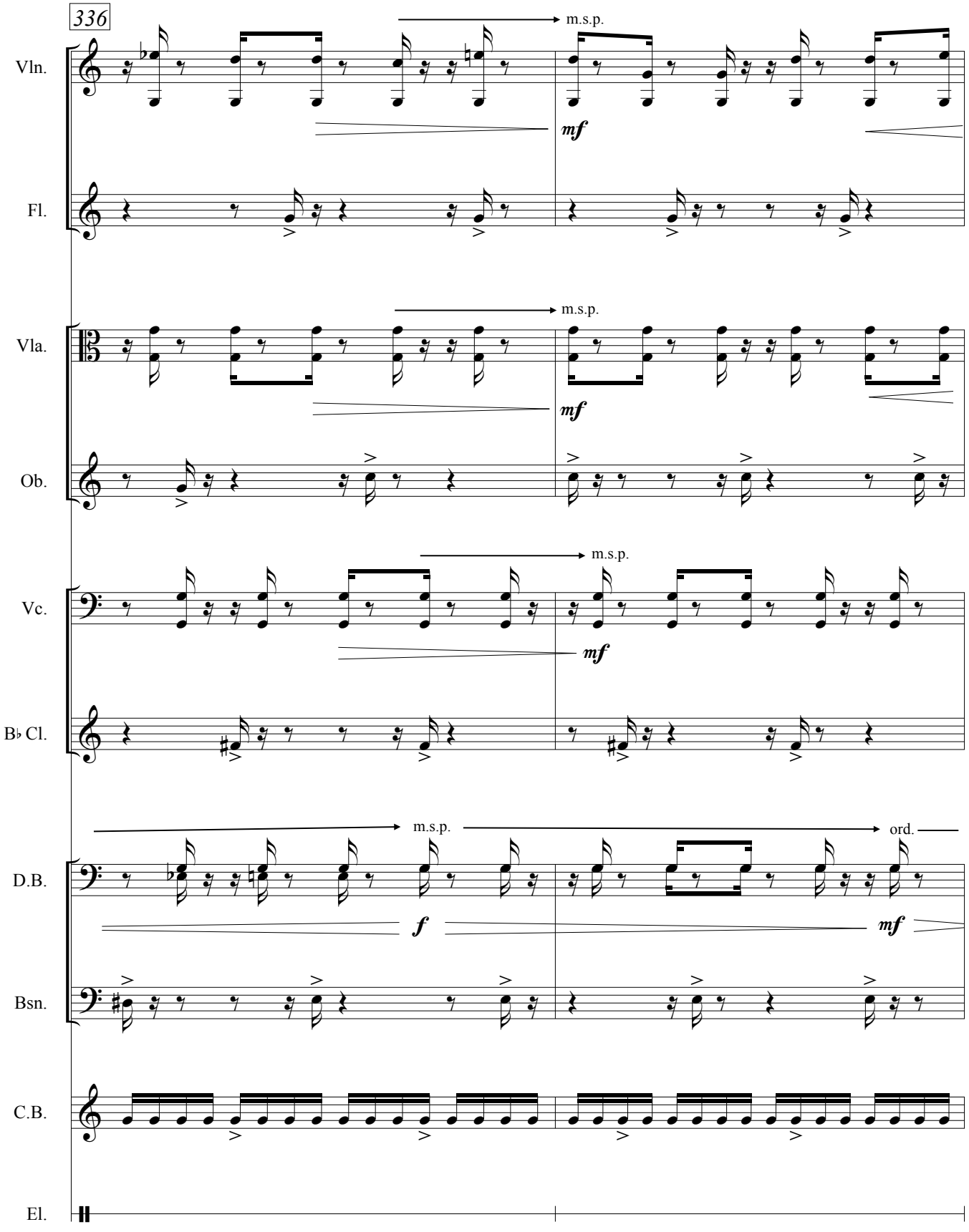

326
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.p.
ord.

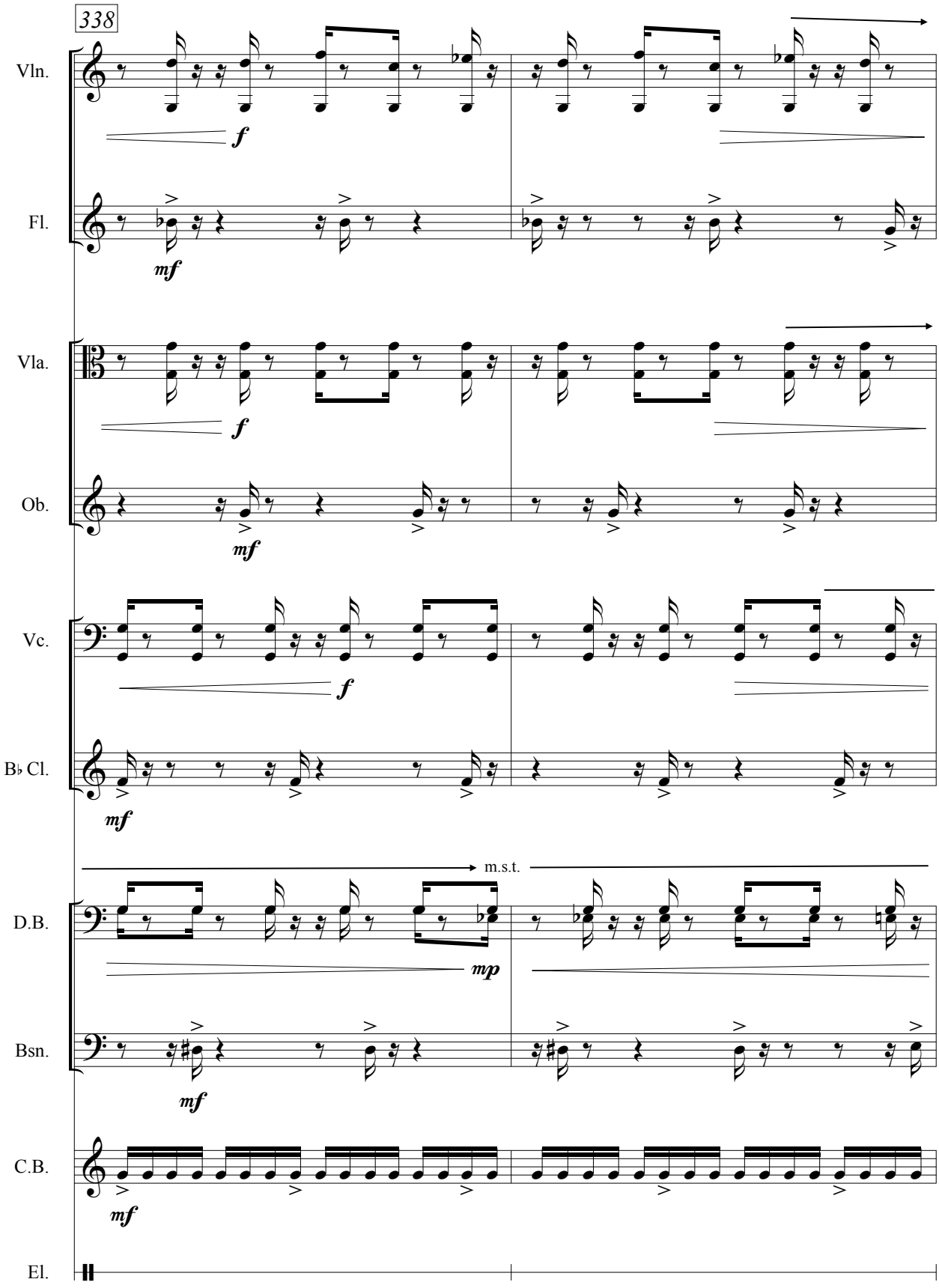

328
Vln.
s.p.
mp
mf
8va
Fl.
p
mp
p
mf
p
f
p
mp
Vla.
s.p.
mp
mf
Ob.
p
mp
p
mf
p
f
p
mp
Vc.
s.p.
mp
mf
B♭ Cl.
f
p
mp
p
mf
p
f
p
D.B.
s.t.
s.p.
p
mf
Bsn.
f
p
mp
p
mf
p
f
p
C.B.
El.

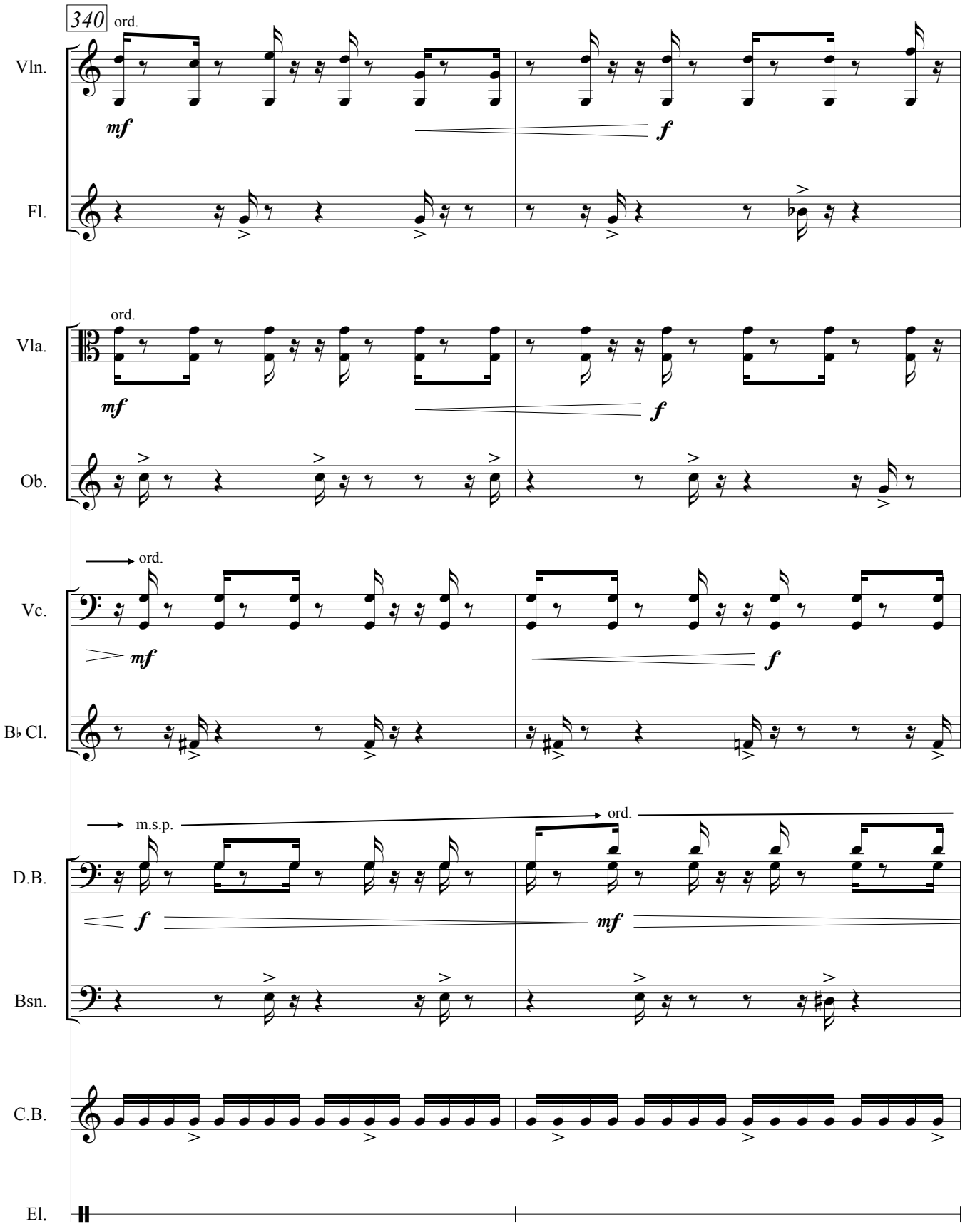

330
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
ord.
mp
mf
p
f
17
*Ambisonics-strings (CC), woodwinds (C)
slow speed and low grain amount

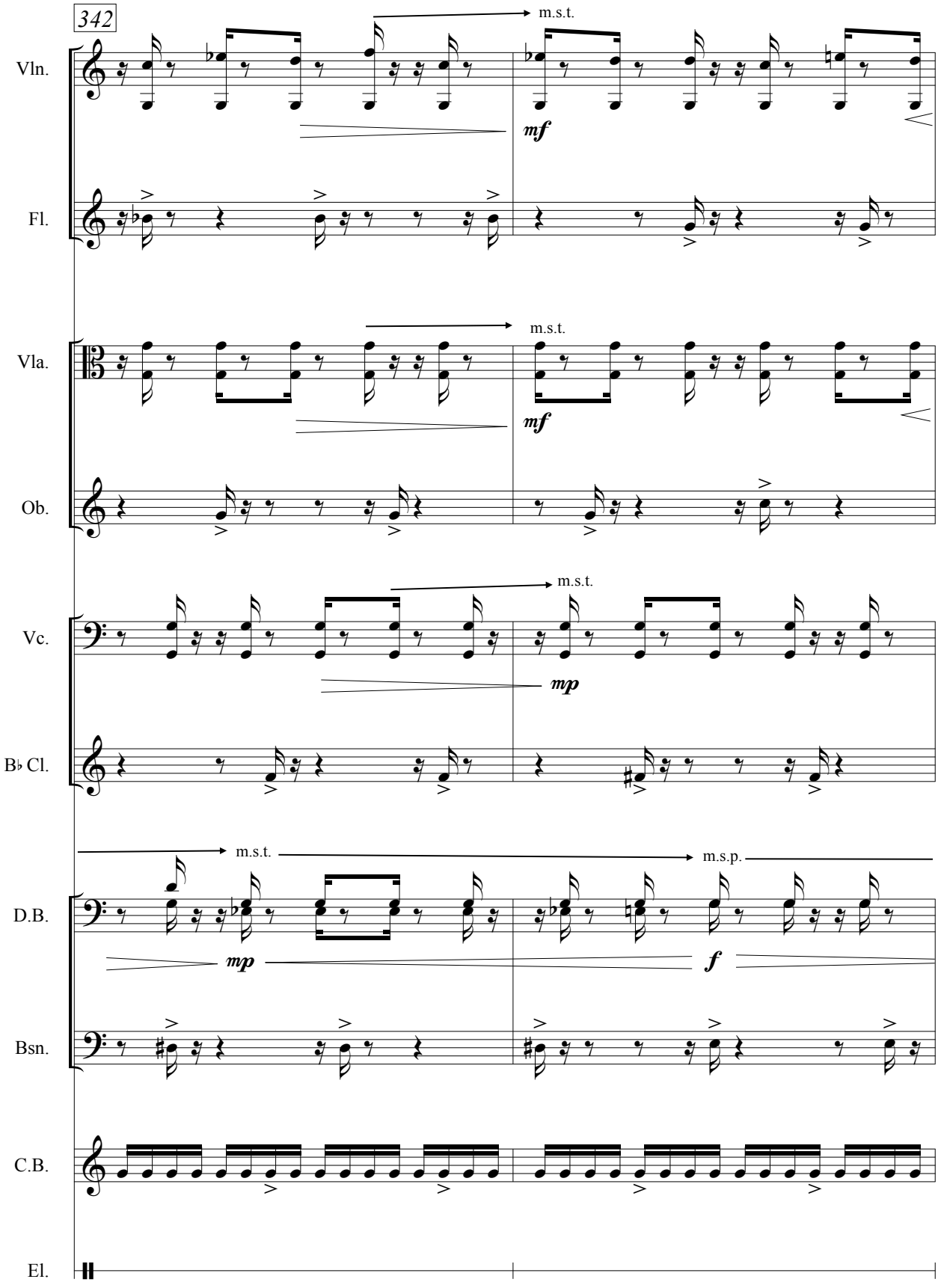

332
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
f
mp
m.s.t.
m.s.p.

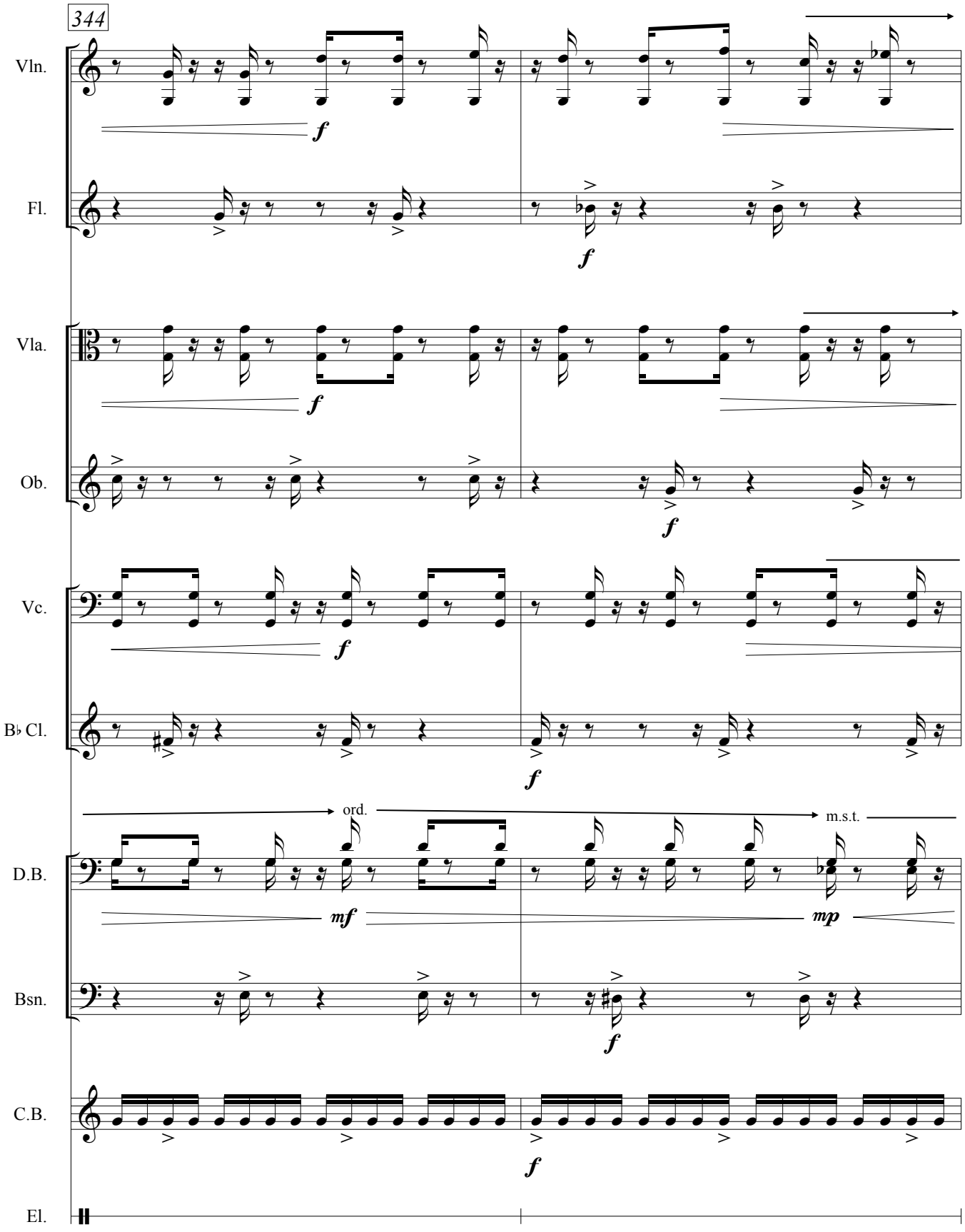

334
m.s.t.
Vln.
mf
f
Fl.
m.s.t.
Vla.
mf
f
Ob.
m.s.t.
Vc.
mp
f
B♭ Cl.
ord.
m.s.t.
D.B.
mf
mp
Bsn.
C.B.
El.

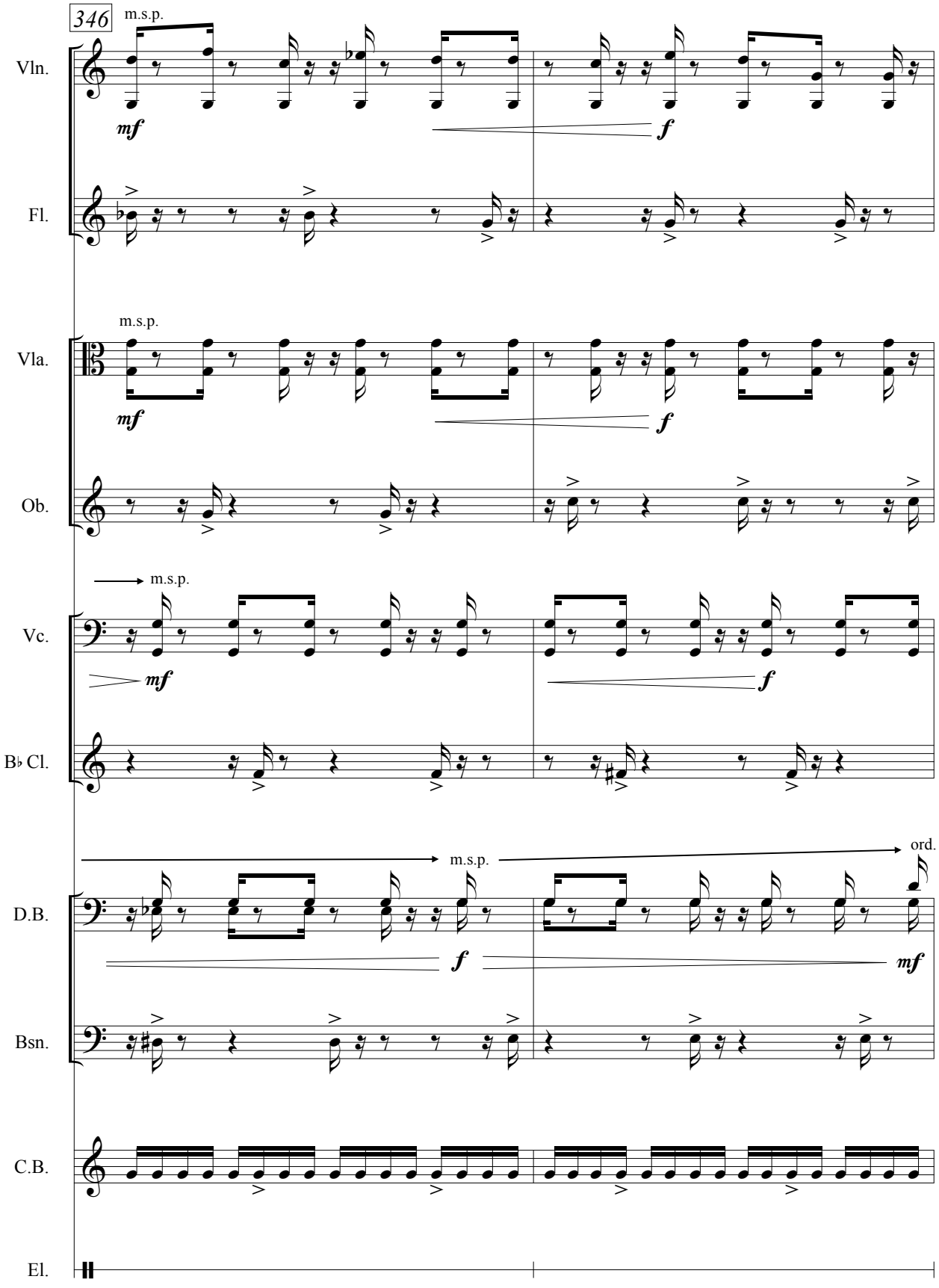

336
Vln.
m.s.p.
mf
Fl.
Vla.
m.s.p.
mf
Ob.
Vc.
m.s.p.
mf
B♭ Cl.
D.B.
m.s.p.
ord.
f
mf
Bsn.
C.B.
El.

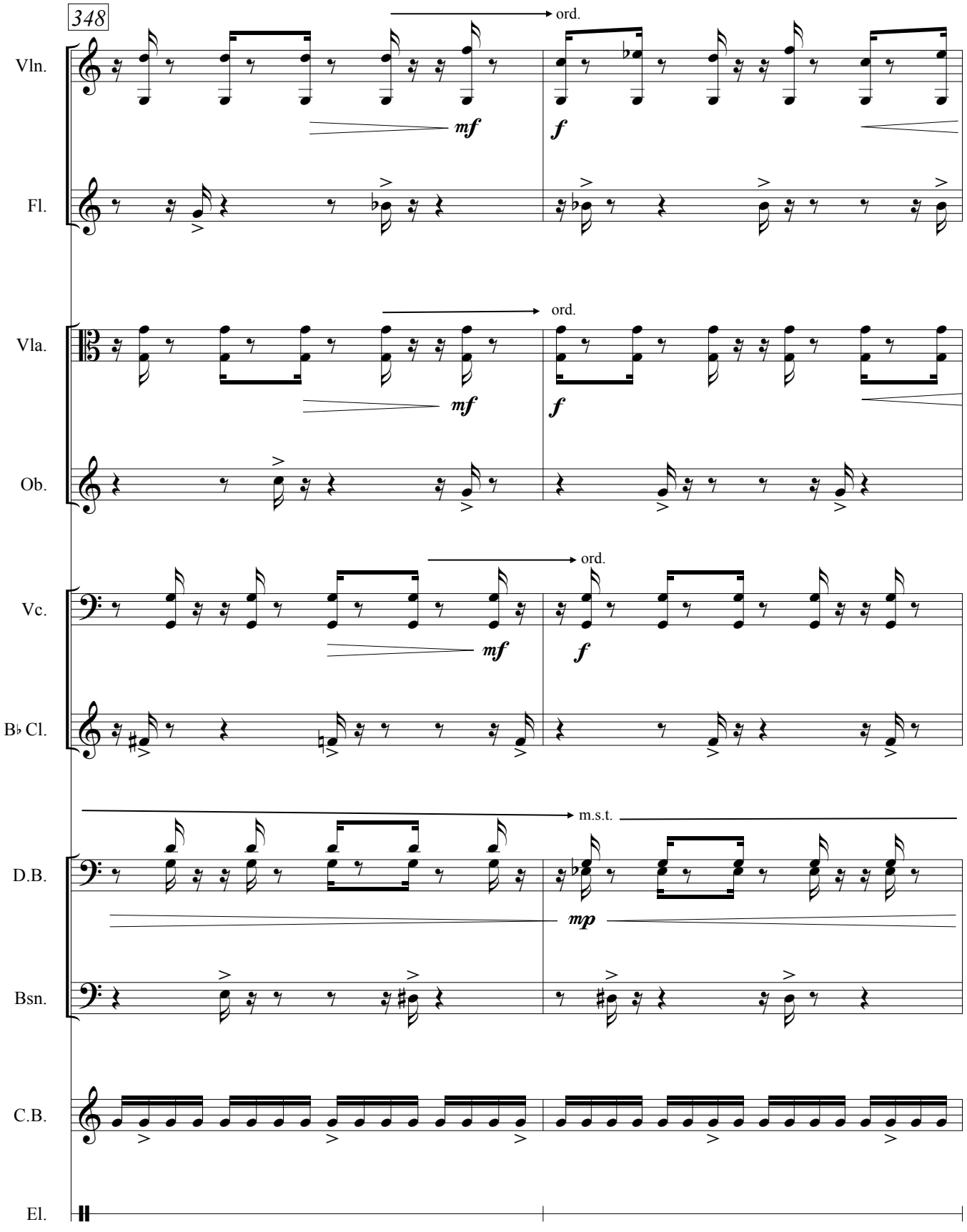

338
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
m.s.t.
f
mf
mp

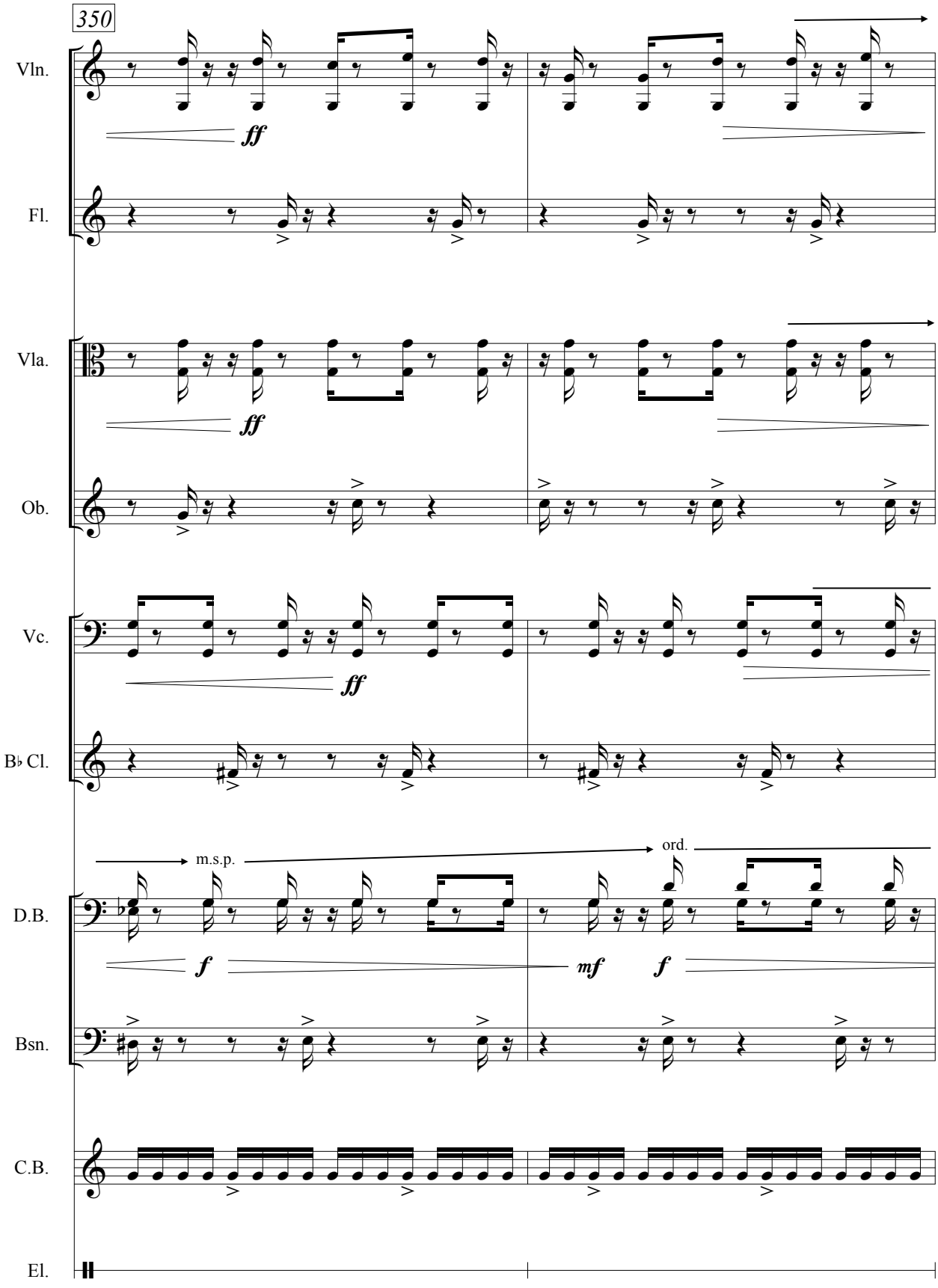

340
ord.
Vln.
mf
f
Fl.
ord.
Vla.
mf
f
Ob.
ord.
Vc.
mf
f
B♭ Cl.
m.s.p.
ord.
D.B.
f
mf
Bsn.
C.B.
El.

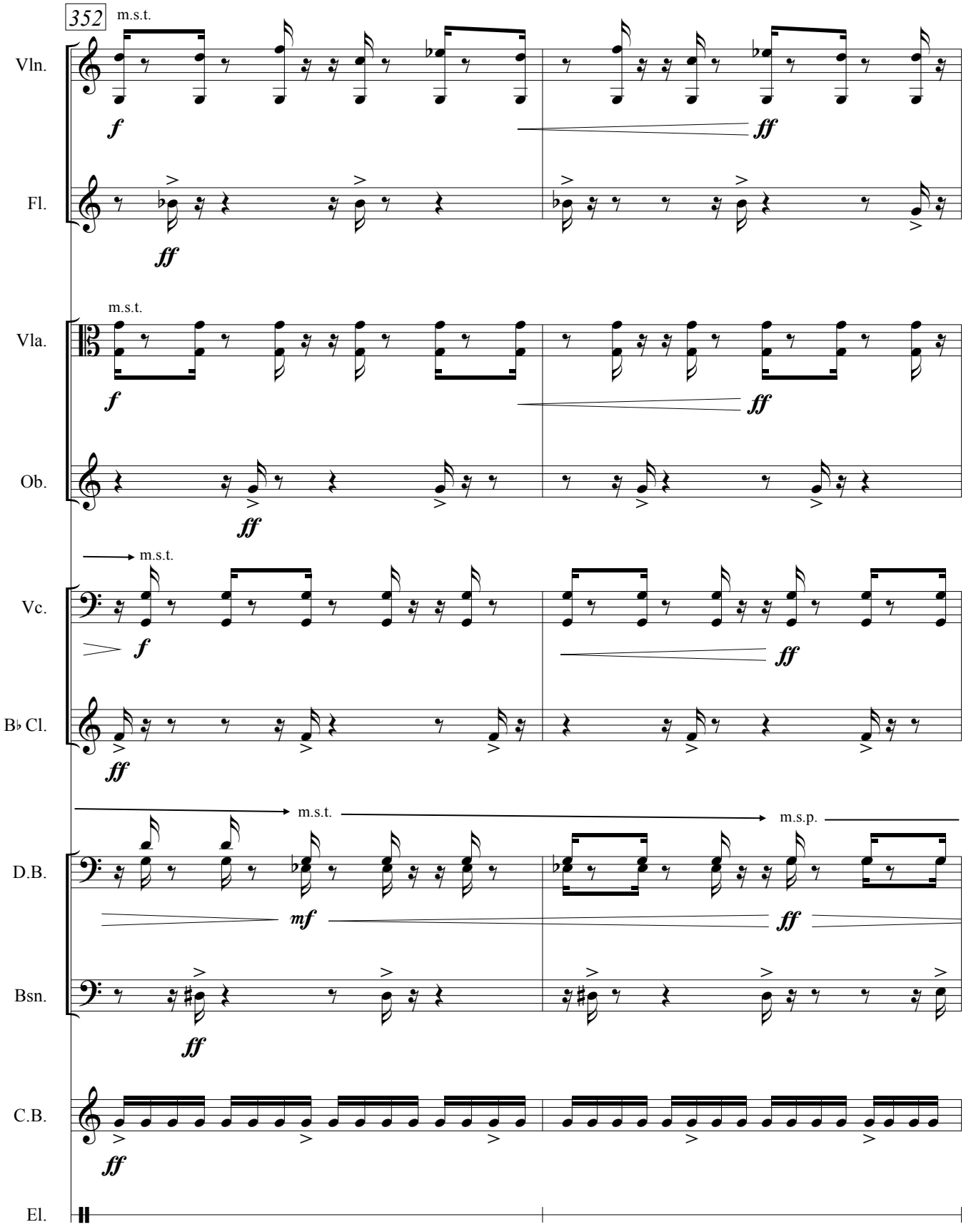

342
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
m.s.t.
m.s.p.
mf
mp
f

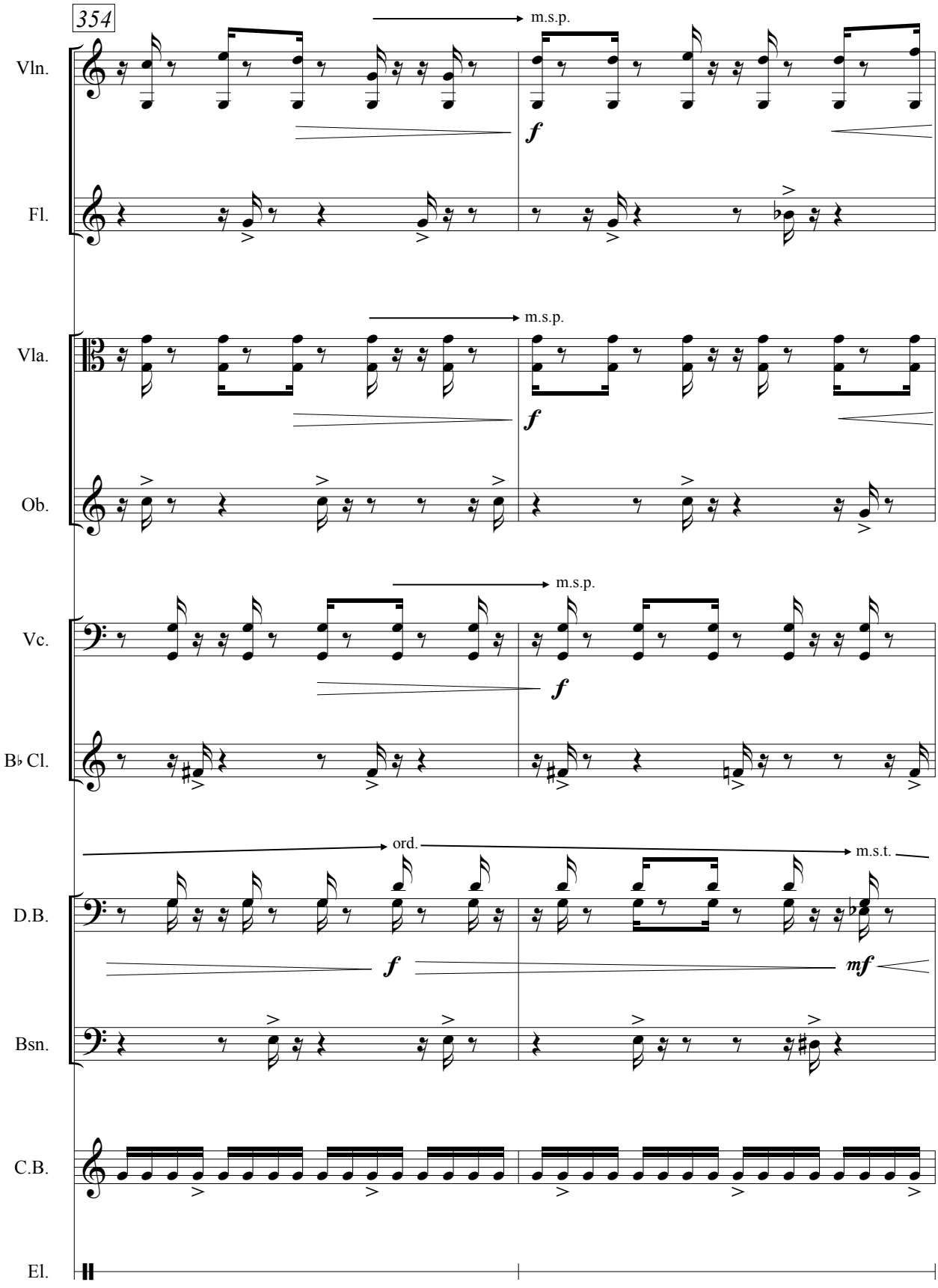

344
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
ord.
m.s.t.
f
mf
mp

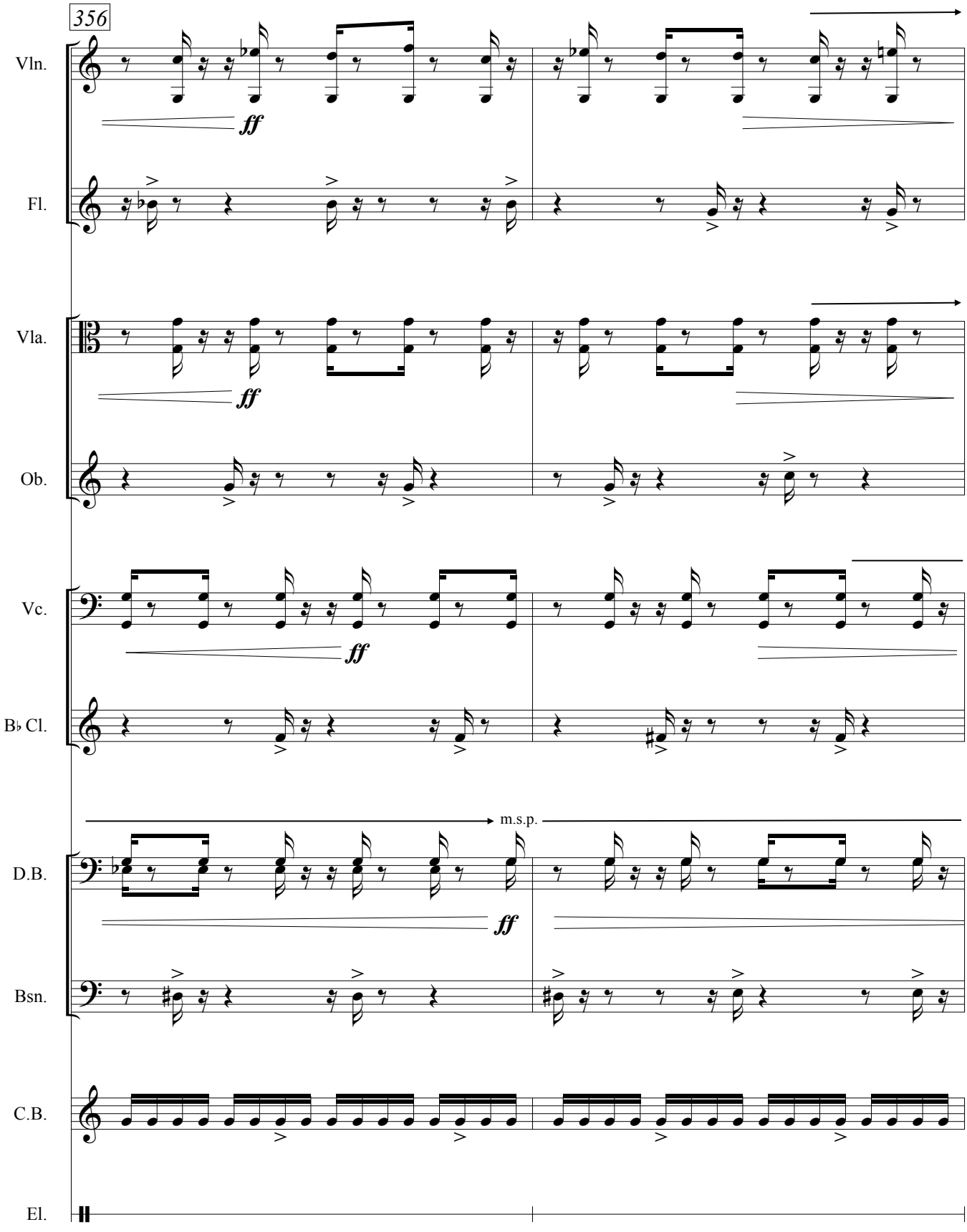

346
m.s.p.
Vln.
mf
f
Fl.
m.s.p.
Vla.
mf
f
Ob.
m.s.p.
Vc.
mf
f
B♭ Cl.
m.s.p.
ord.
D.B.
f
mf
Bsn.
C.B.
El.

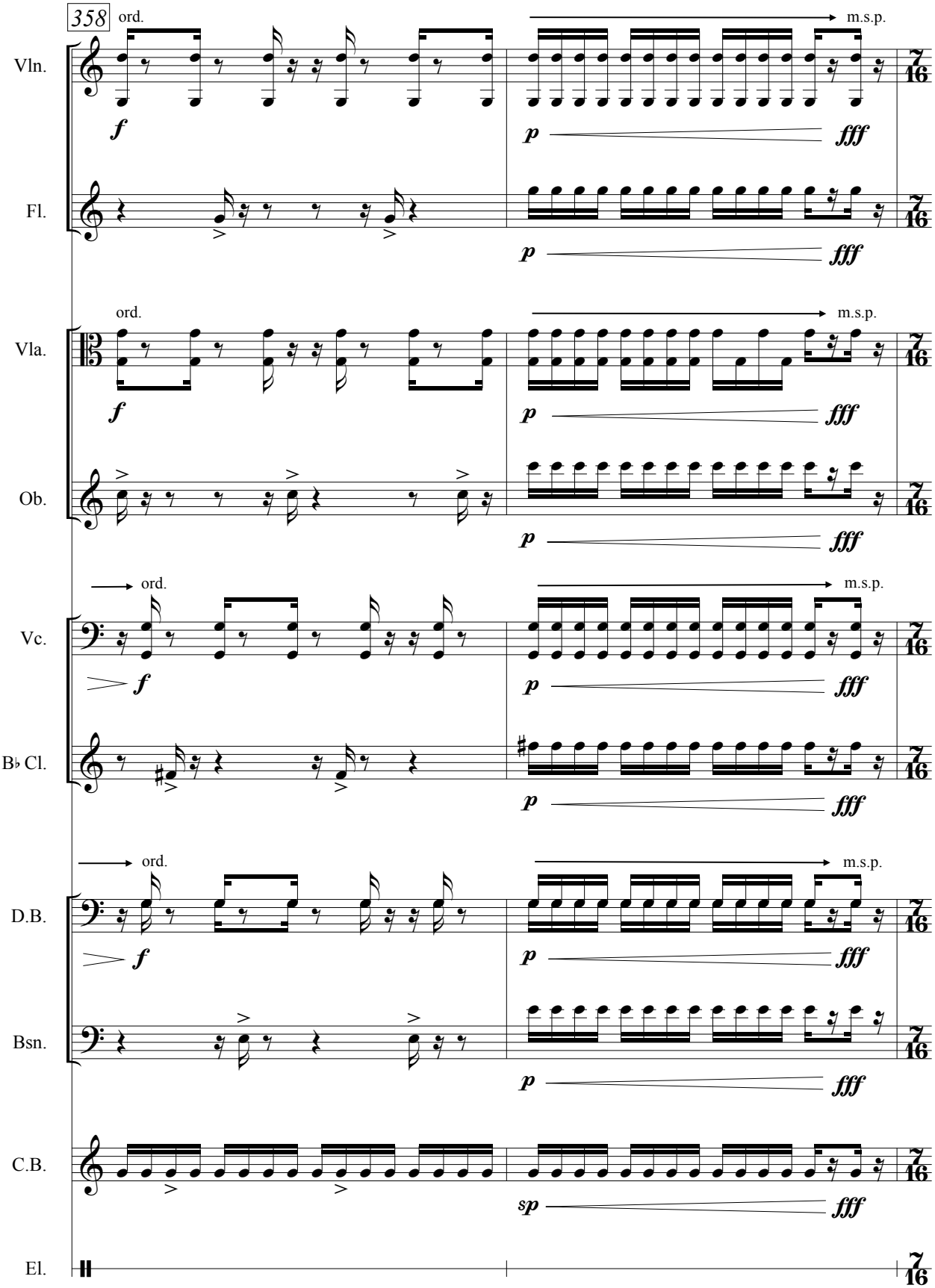

348
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
ord.
mf
f
mp
m.s.t.

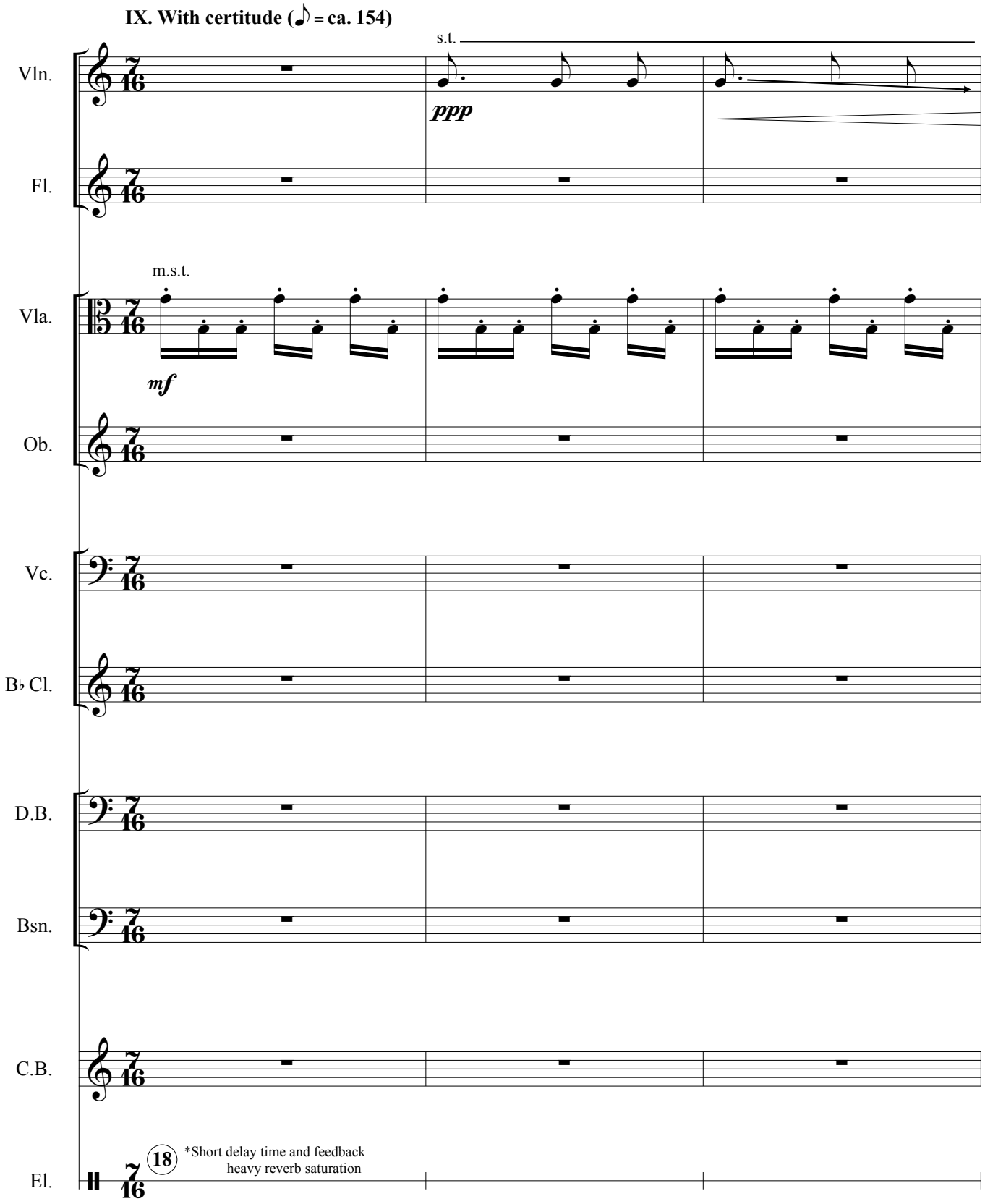

350
Vln.
ff
Fl.
Vla.
ff
Ob.
Vc.
ff
B♭ Cl.
m.s.p.
ord.
D.B.
f
mf
f
Bsn.
C.B.
El.

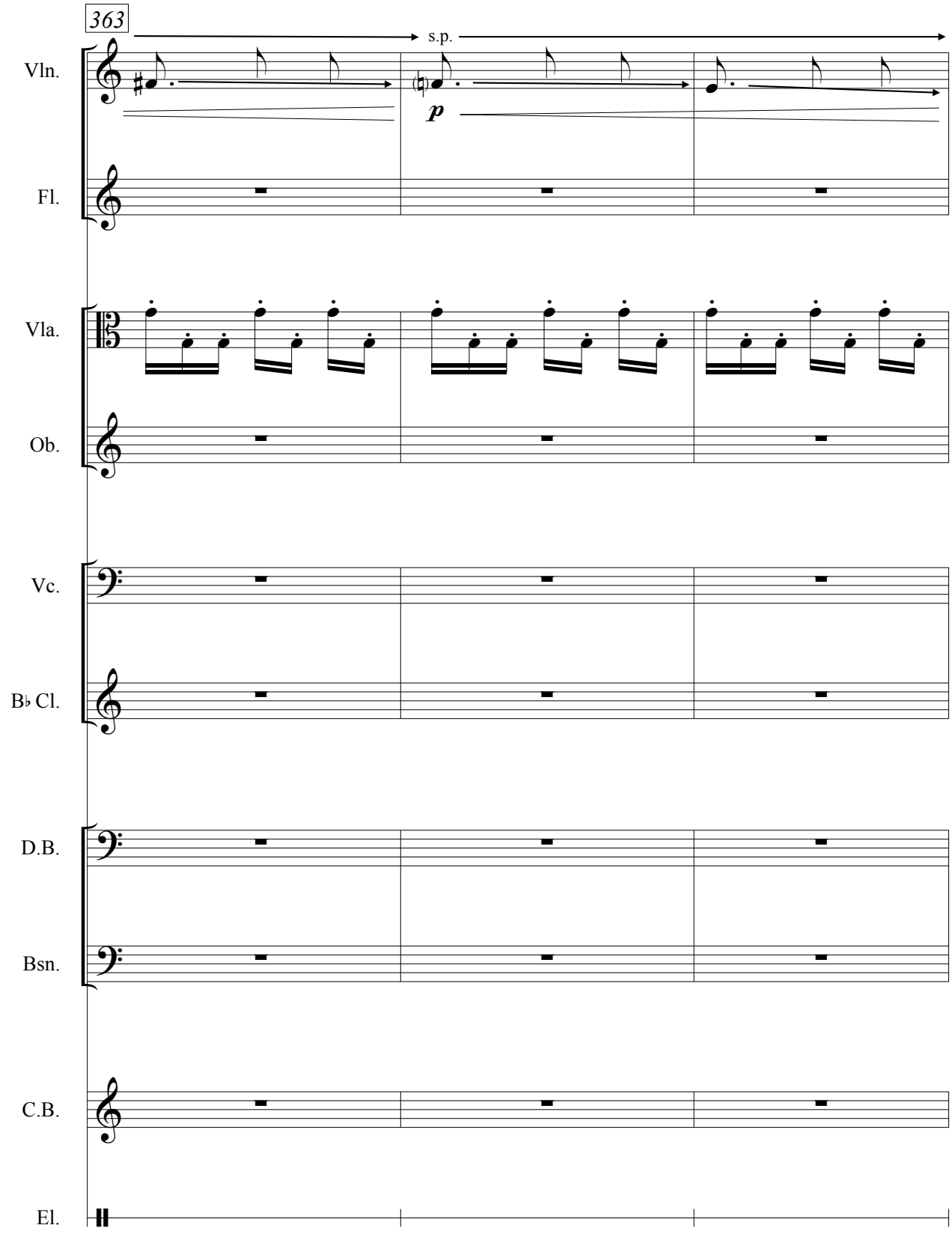

352
m.s.t.
Vln.
f
ff
Fl.
ff
m.s.t.
Vla.
f
ff
Ob.
ff
m.s.t.
Vc.
f
ff
B♭ Cl.
ff
m.s.t.
m.s.p.
D.B.
mf
ff
Bsn.
ff
C.B.
ff
El.

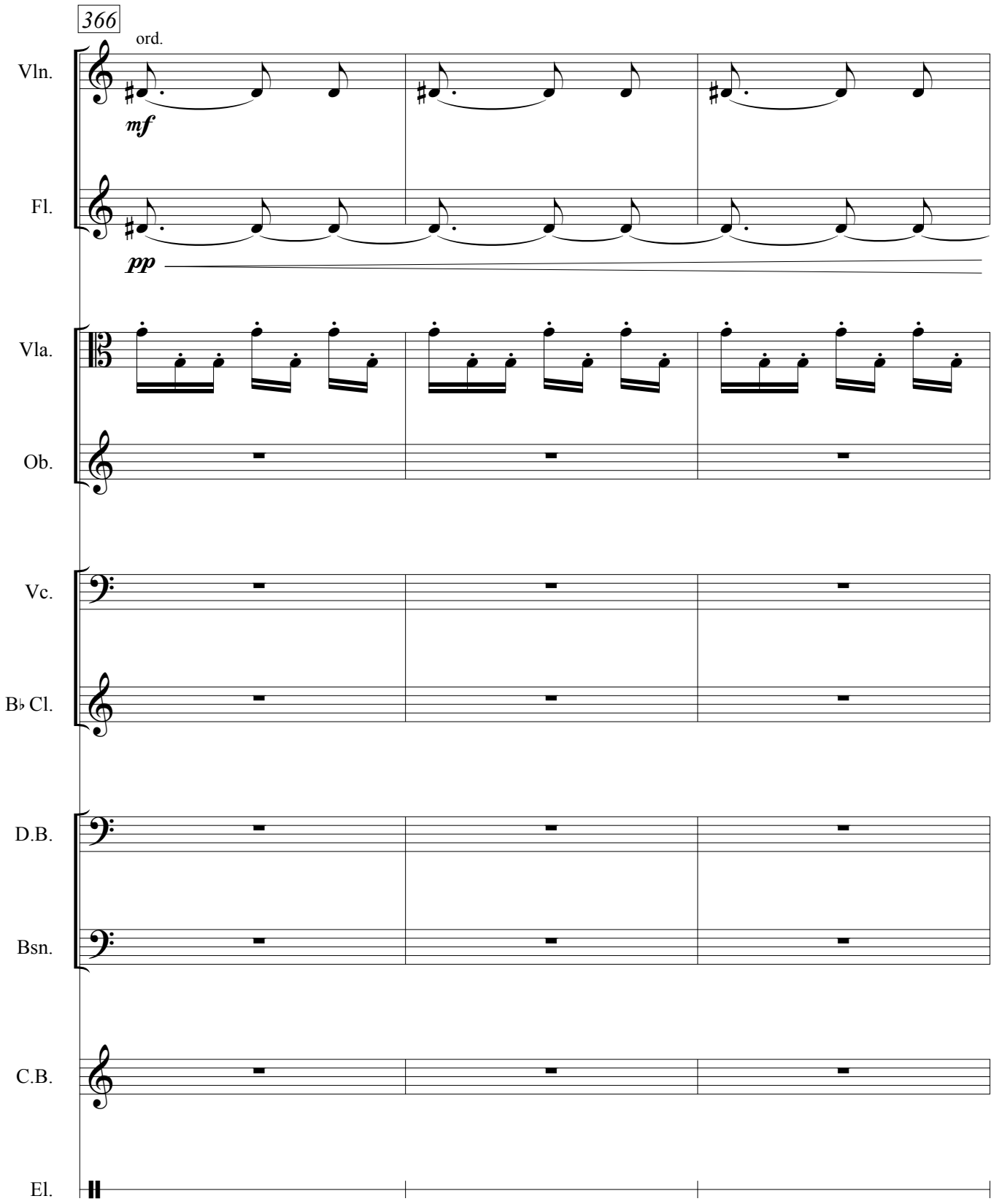

354
Vln.
m.s.p.
f
Fl.
Vla.
m.s.p.
f
Ob.
Vc.
m.s.p.
f
B♭ Cl.
D.B.
ord.
m.s.t.
f
mf
Bsn.
C.B.
El.

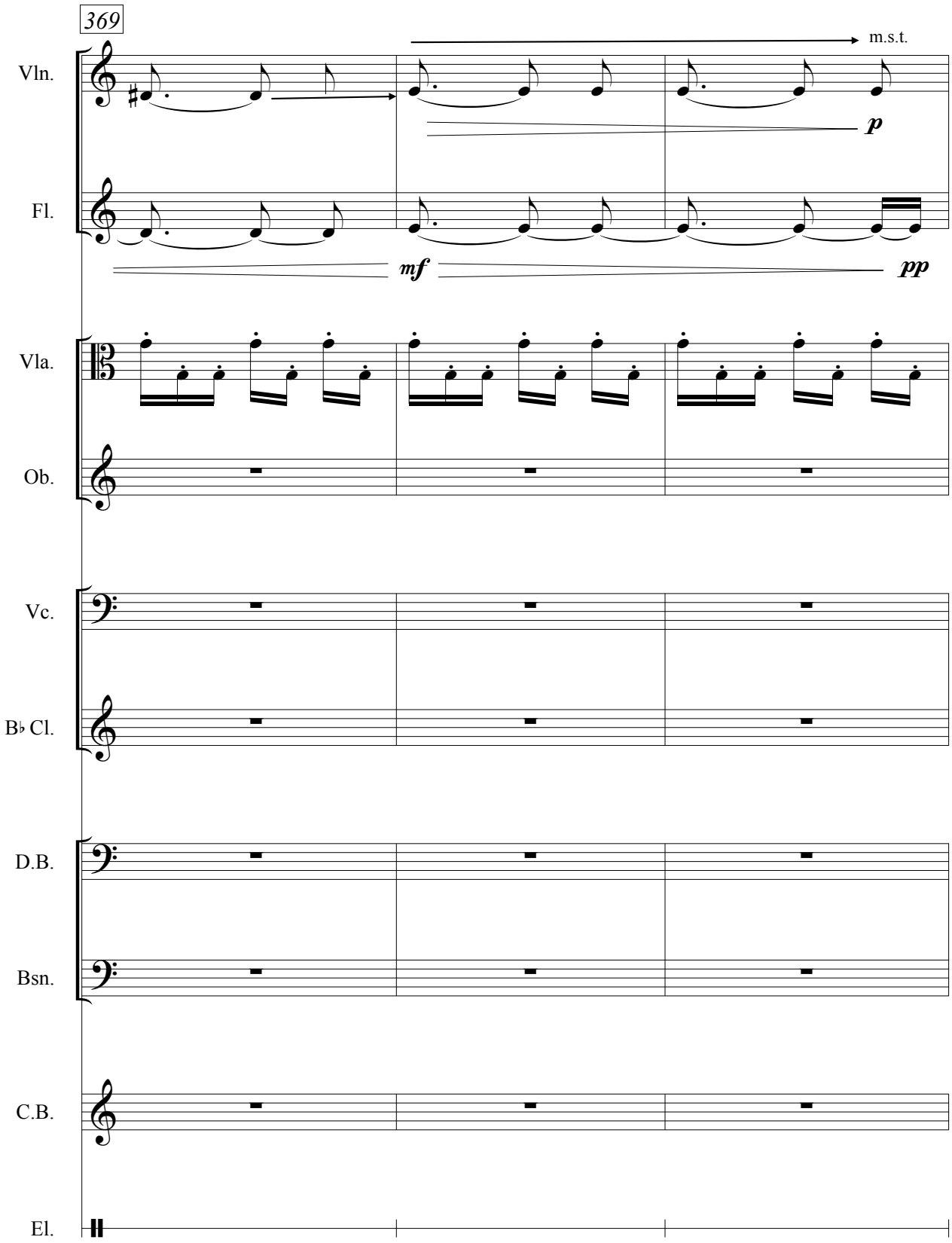

356
Vln.
ff
Fl.
Vla.
ff
Ob.
Vc.
ff
B♭ Cl.
m.s.p.
D.B.
ff
Bsn.
C.B.
El.

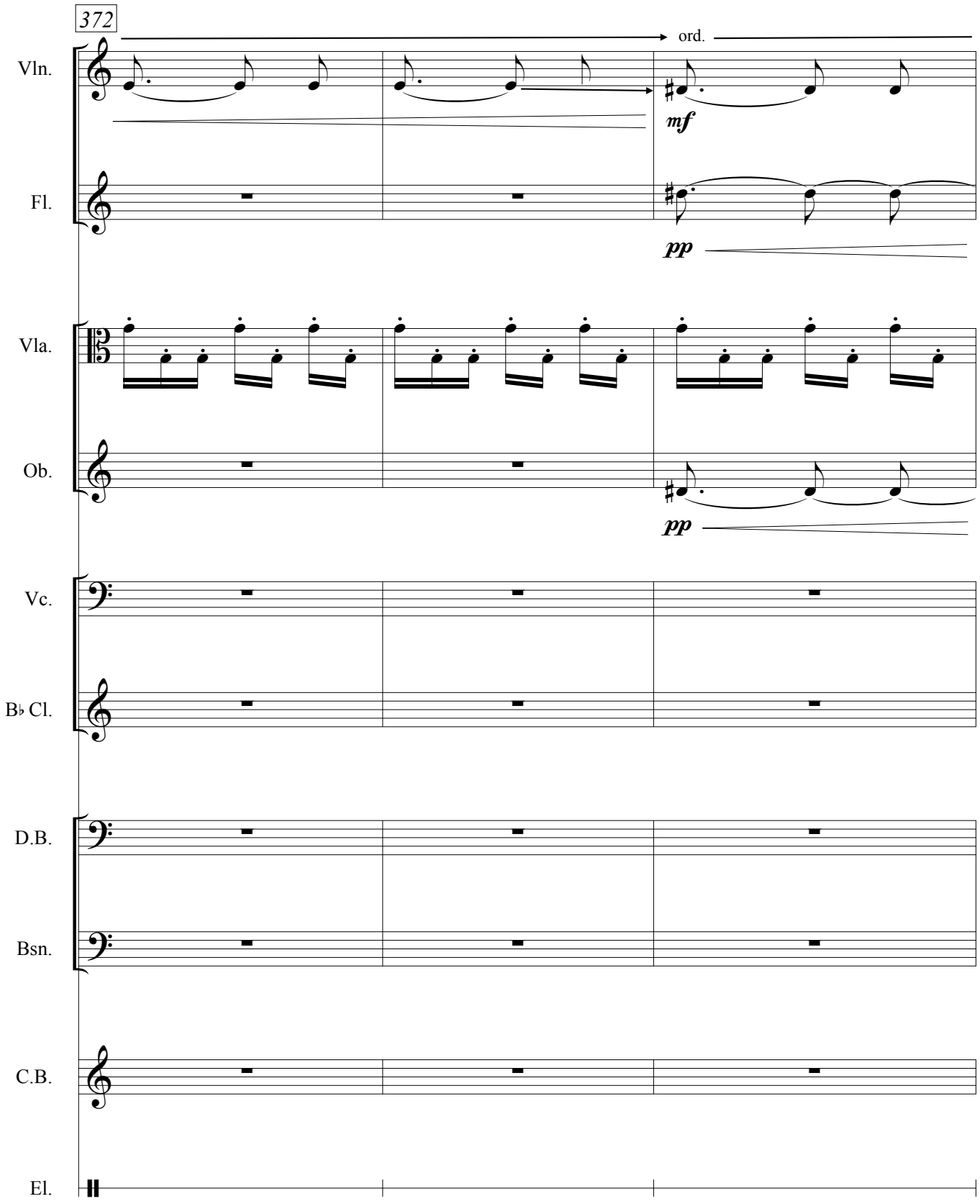

358
ord.
m.s.p.
Vln.
f
p
fff
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
sp
El.
7/16

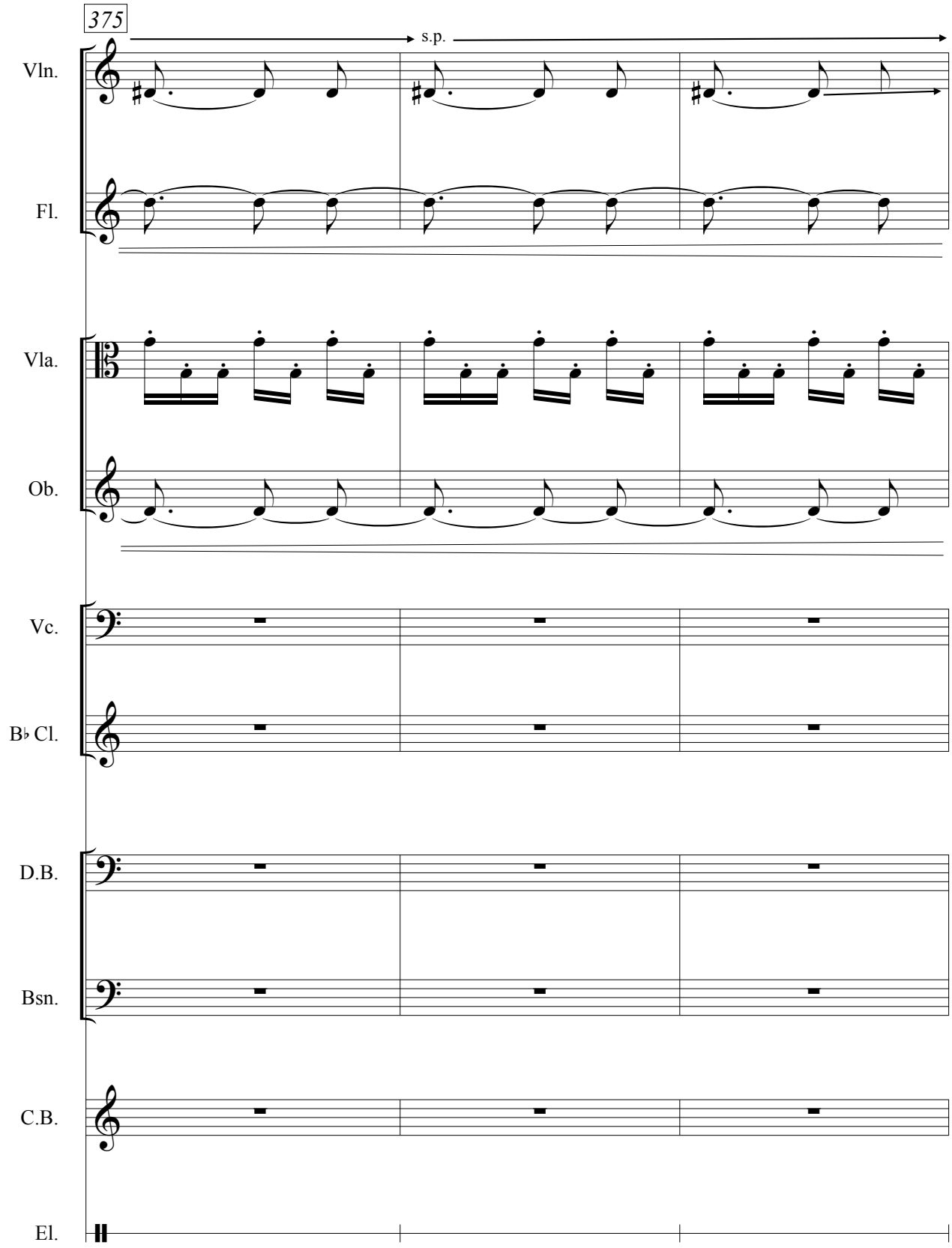

IX. With certitude (♪ = ca. 154)
s.t.
ppp
Vln.
Fl.
m.s.t.
mf
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
18
*Short delay time and feedback
heavy reverb saturation
El.

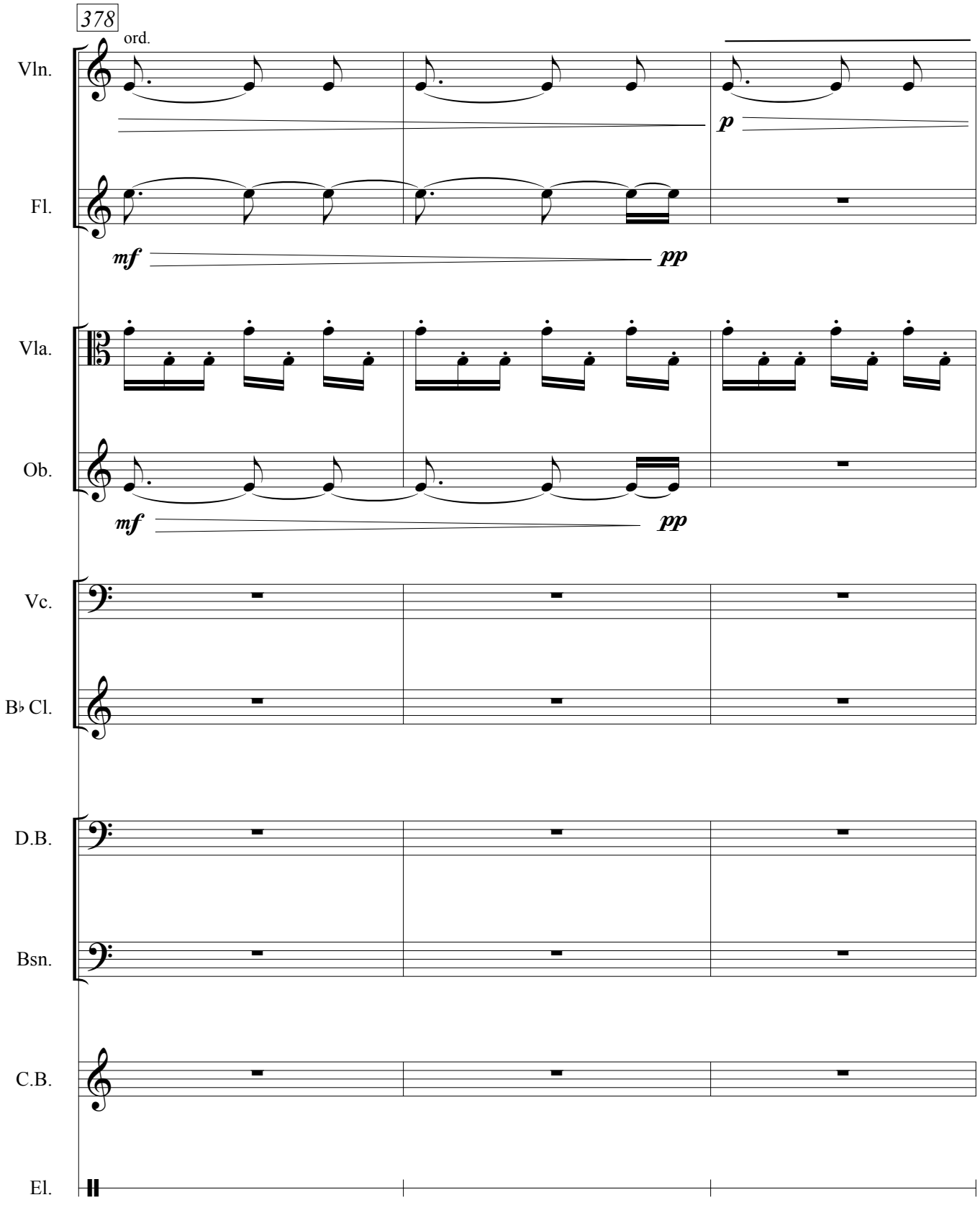

363
s.p.
p
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.

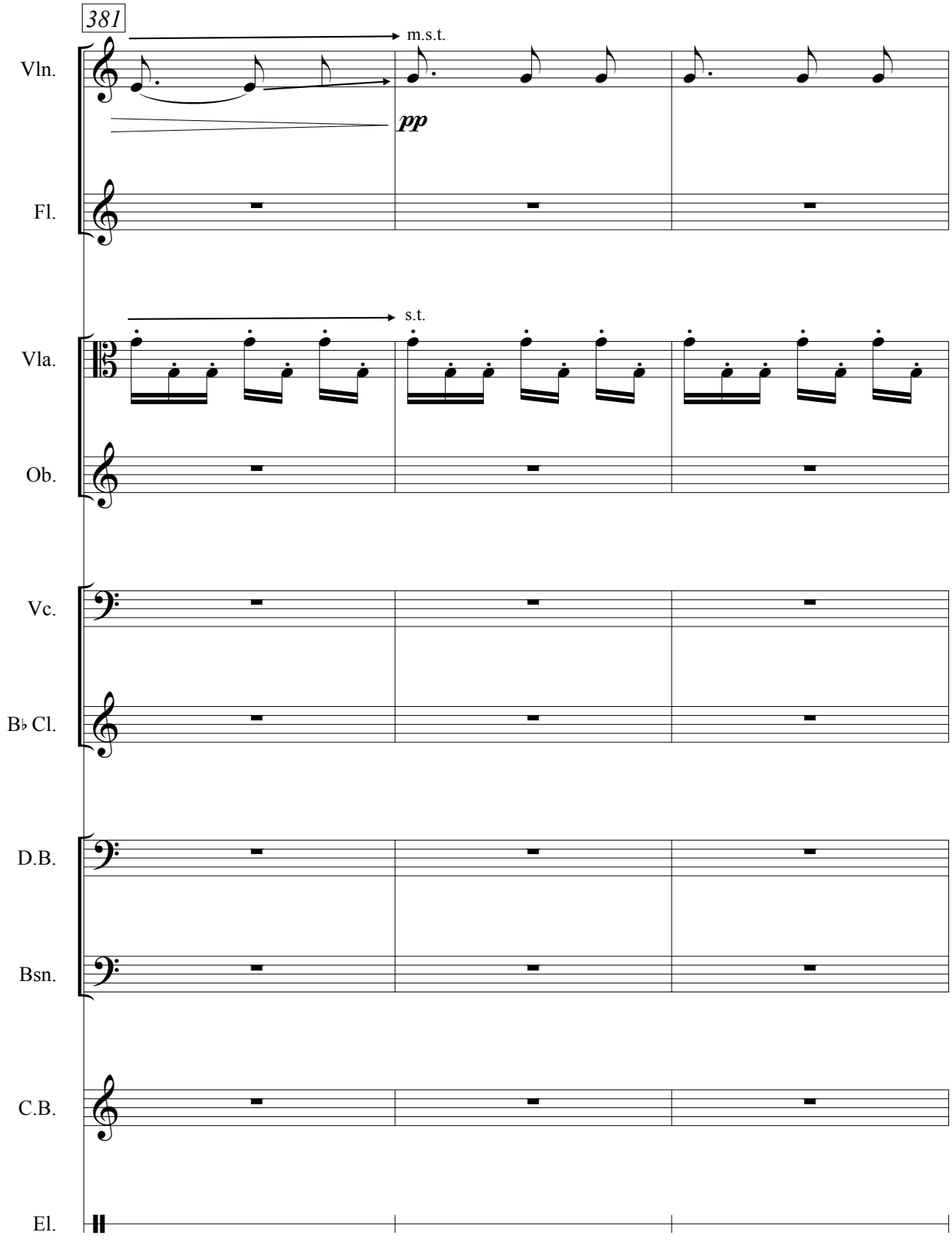

366
ord.
Vln.
mf
Fl.
pp
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.

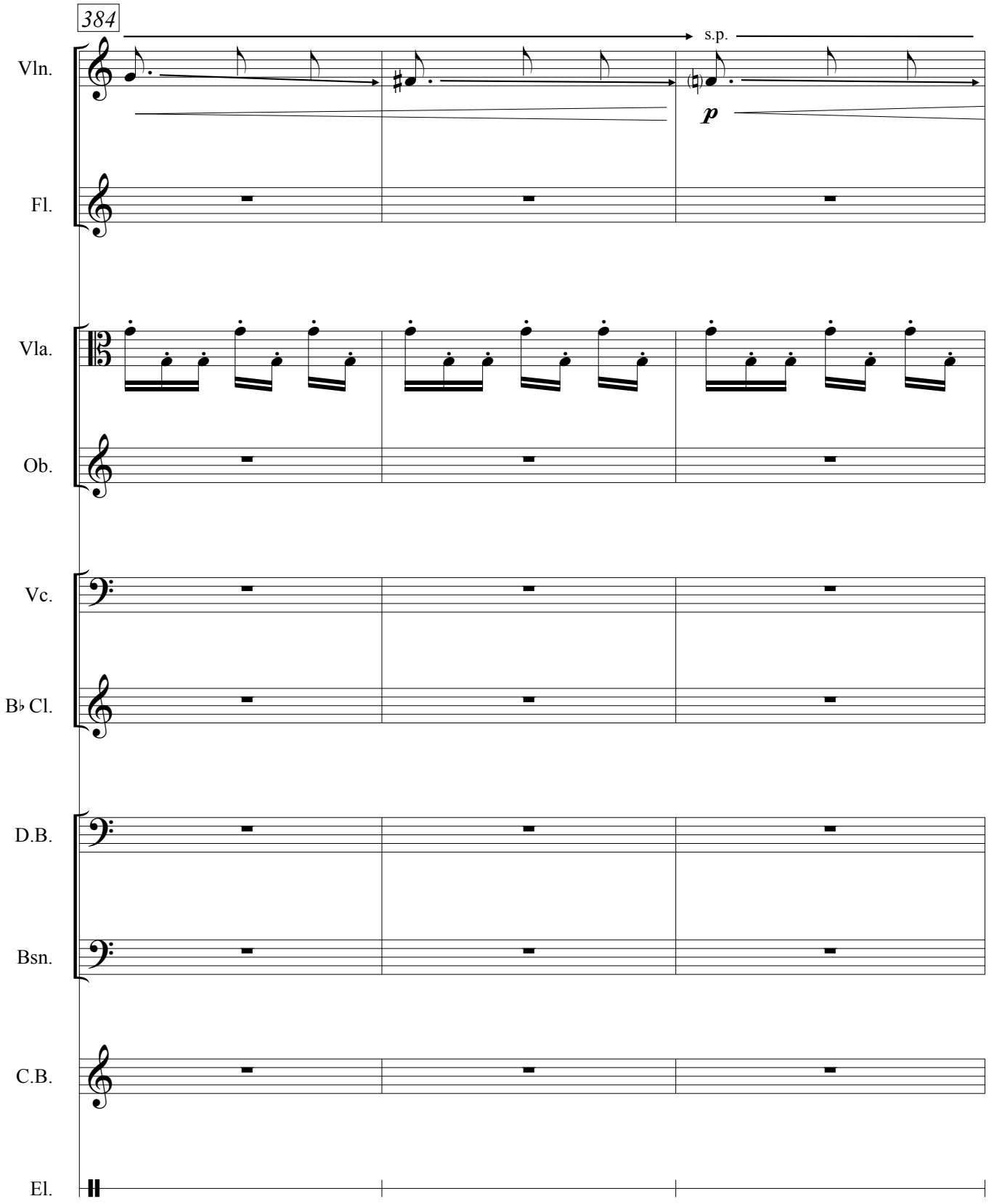

369
m.s.t.
Vln.
p
Fl.
mf
pp
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.

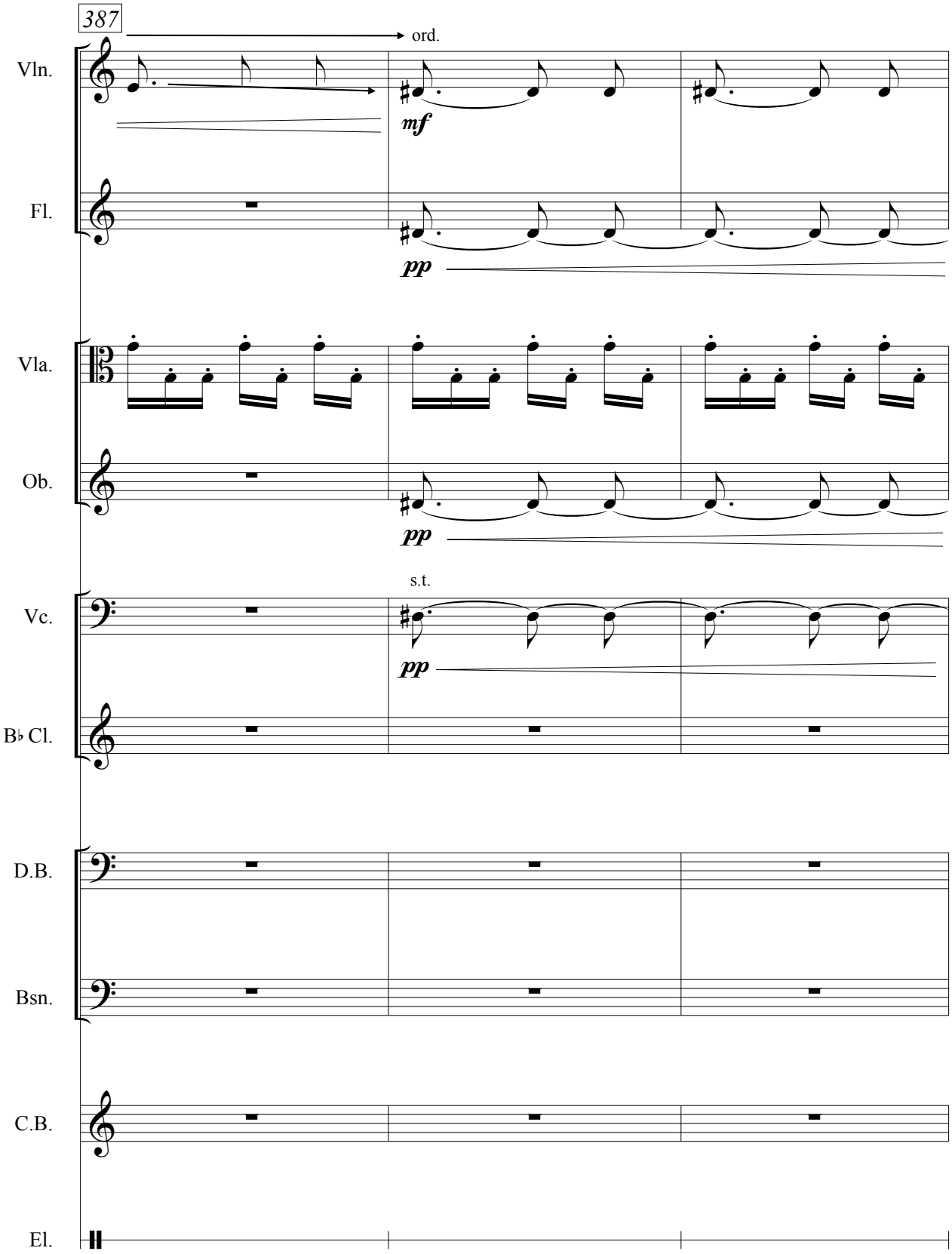

372
ord.
Vln.
mf
Fl.
pp
Vla.
Ob.
pp
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.

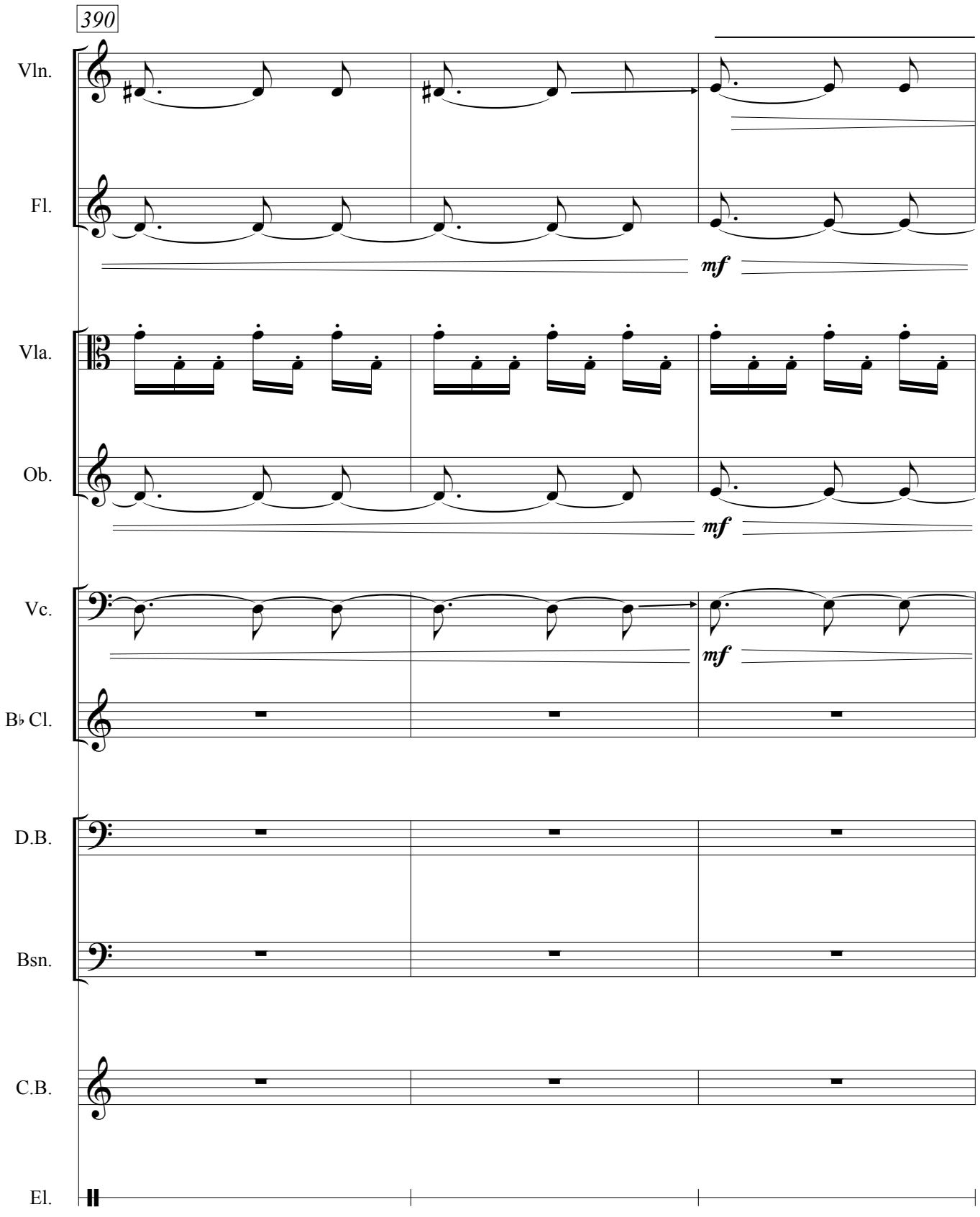

375
s.p.
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.

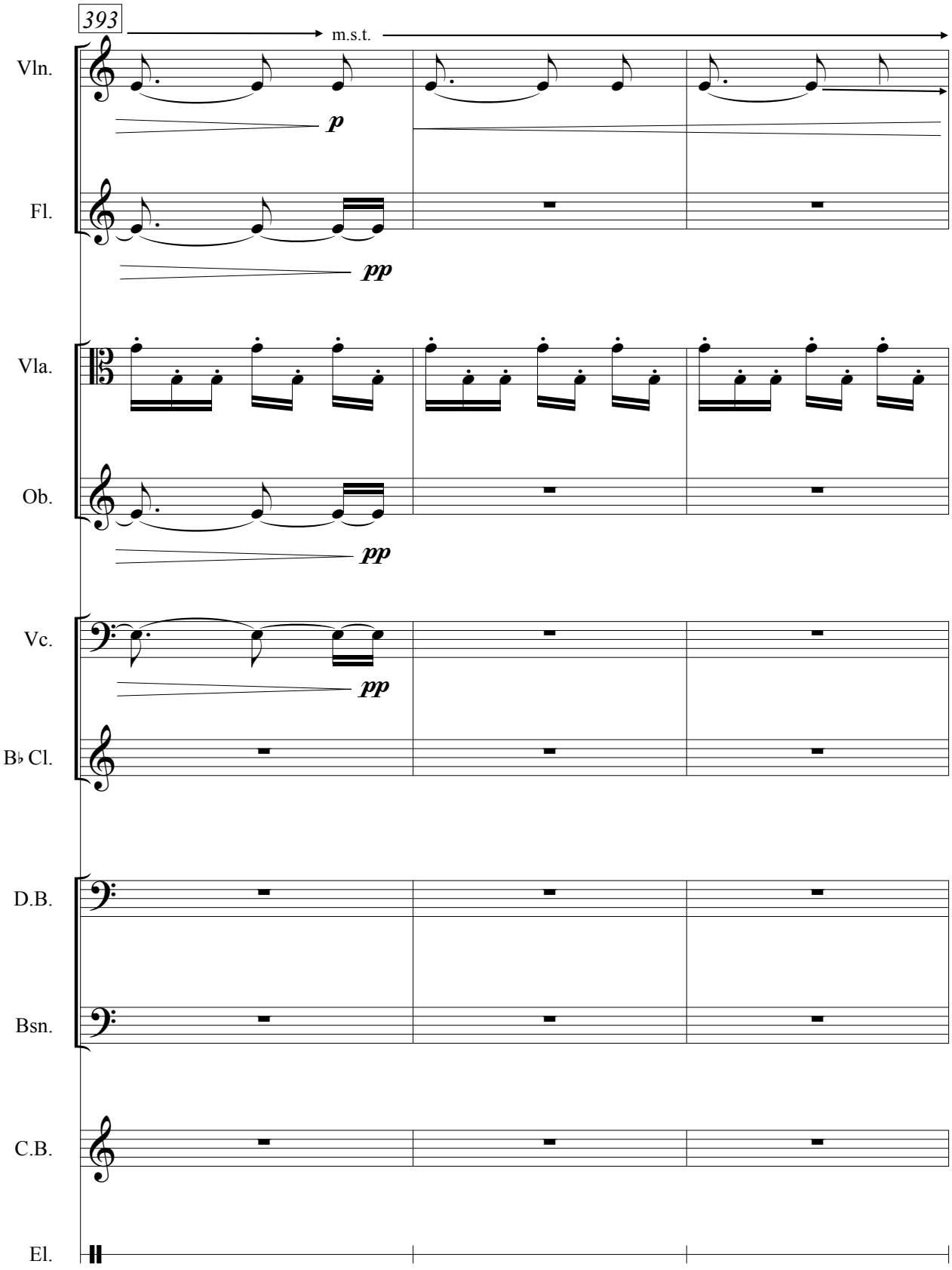

378
ord.
Vln.
p
Fl.
mf
pp
Vla.
Ob.
mf
pp
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.

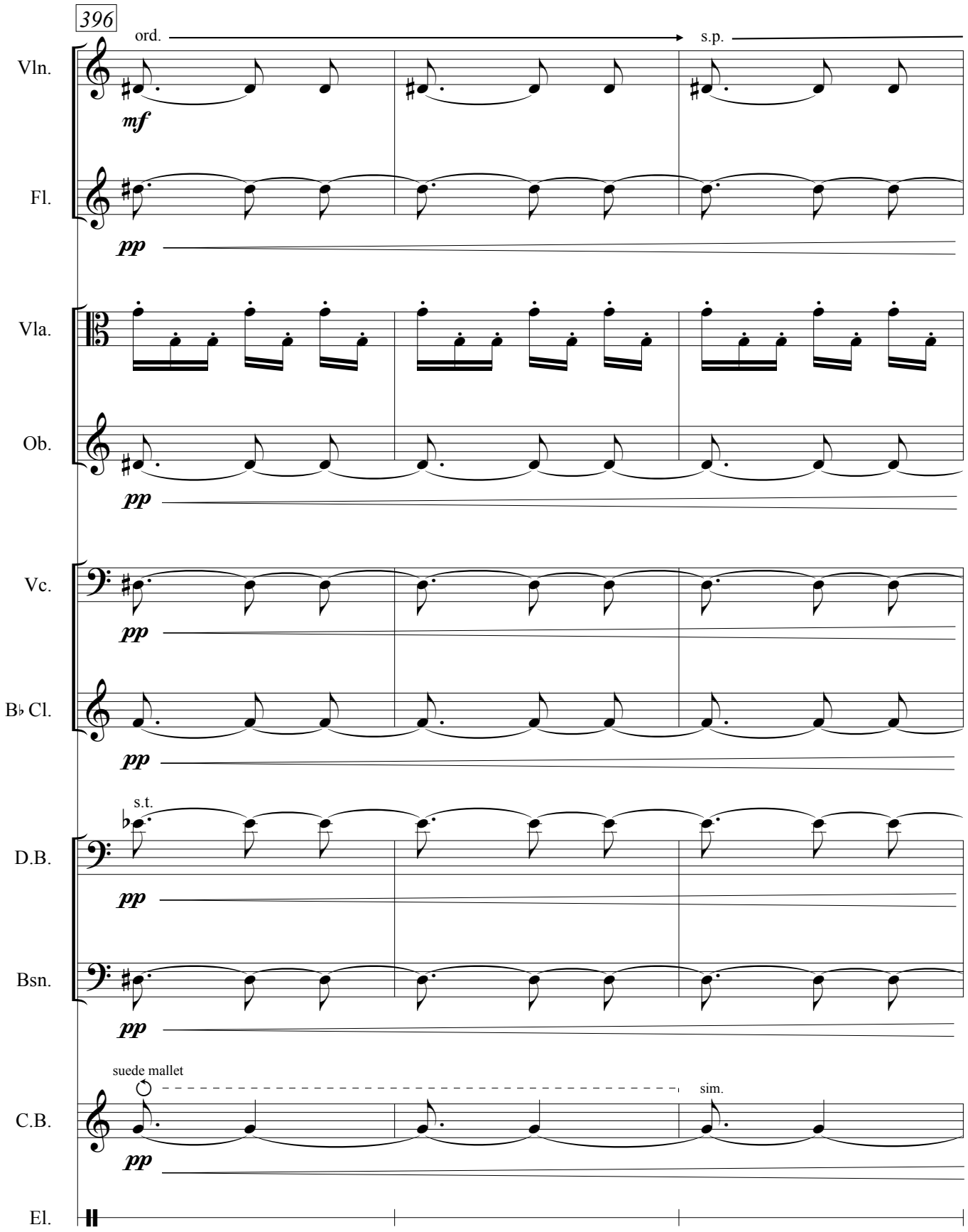

381
m.s.t.
Vln.
pp
Fl.
s.t.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.

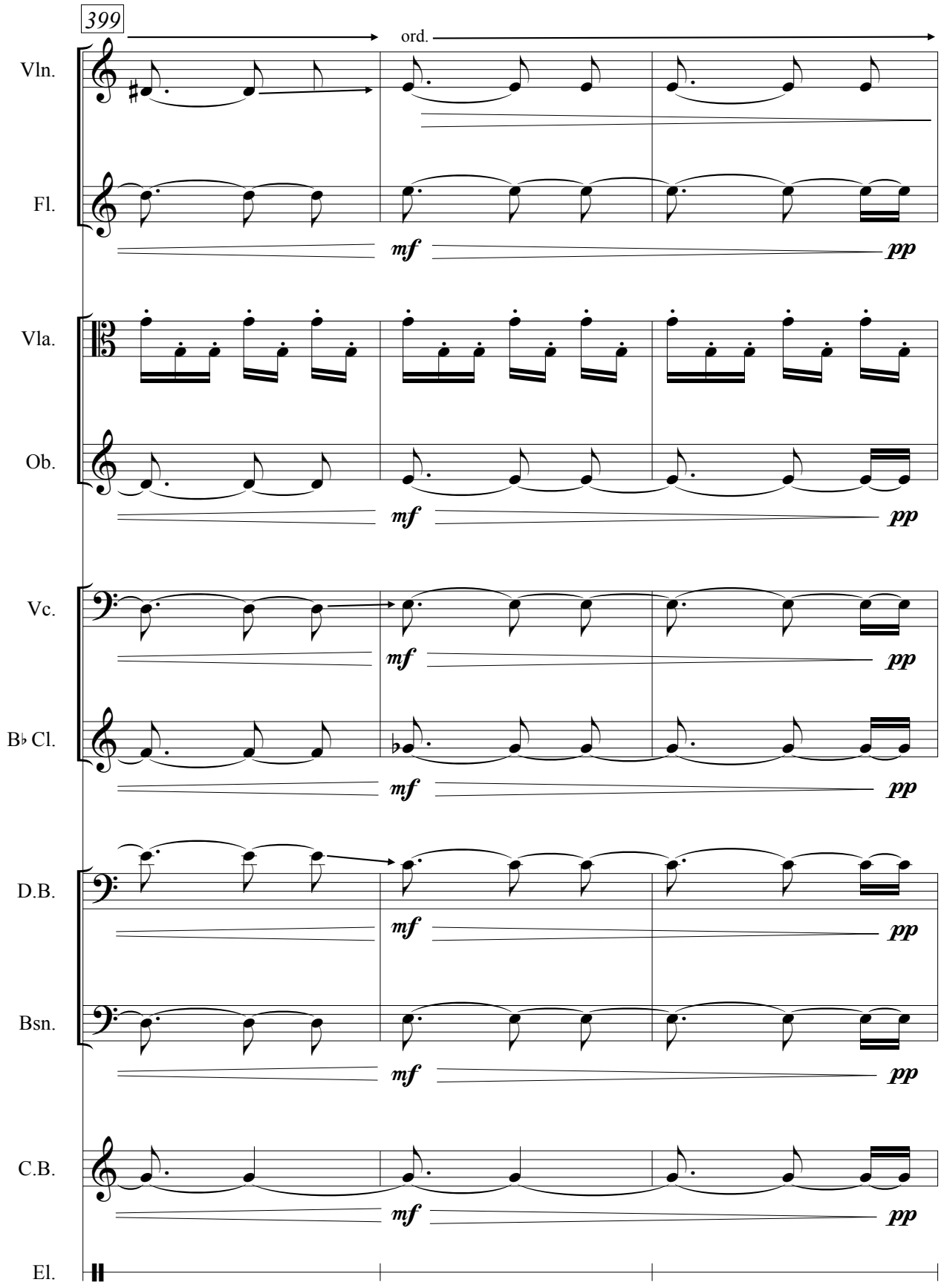

384
s.p.
p
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.

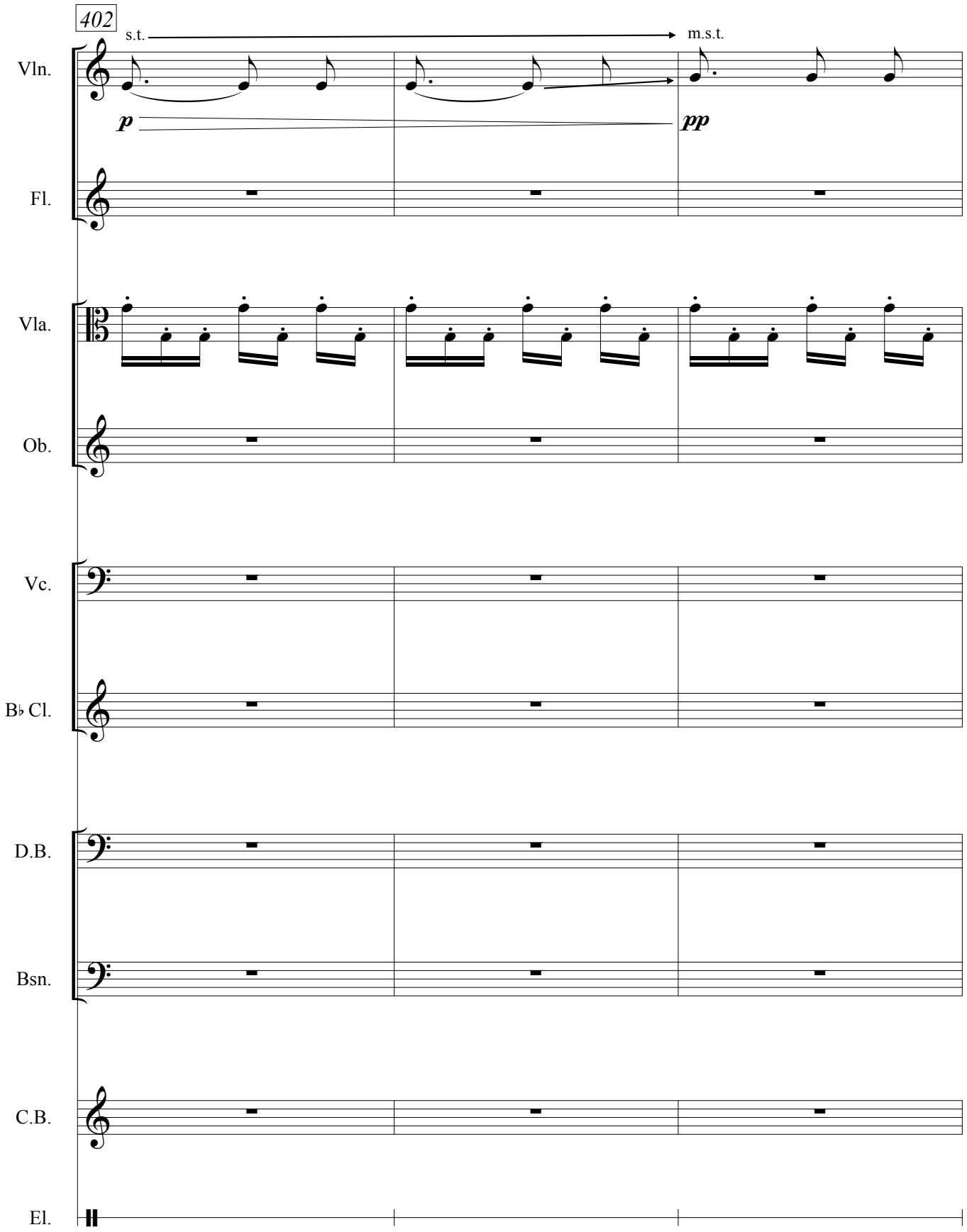

387
ord.
Vln.
mf
Fl.
pp
Vla.
Ob.
pp
s.t.
Vc.
pp
B♭ Cl.
D.B.
Bsn.
C.B.
El.

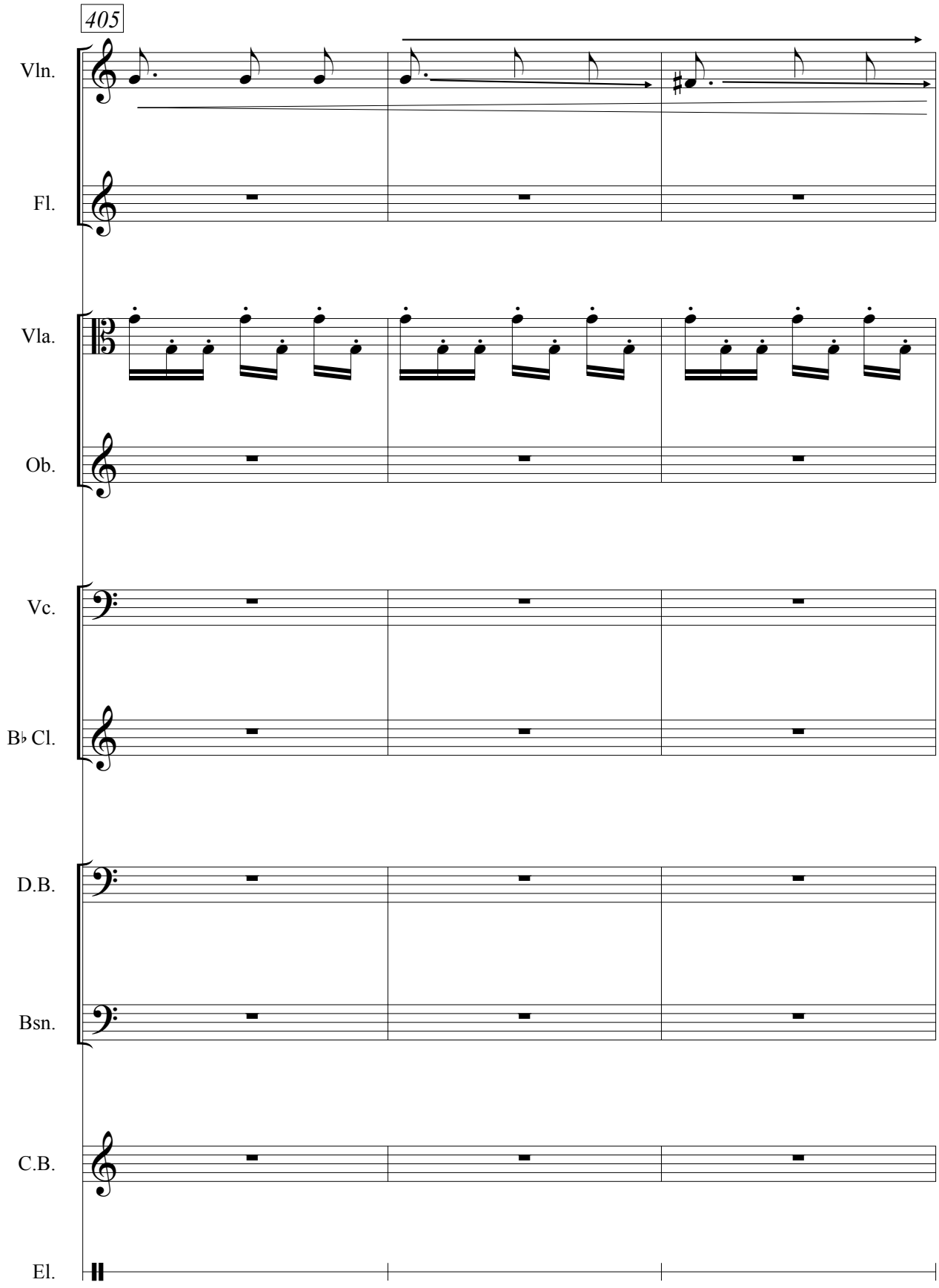

390
Vln.
Fl.
mf
Vla.
Ob.
mf
Vc.
mf
B♭ Cl.
D.B.
Bsn.
C.B.
El.

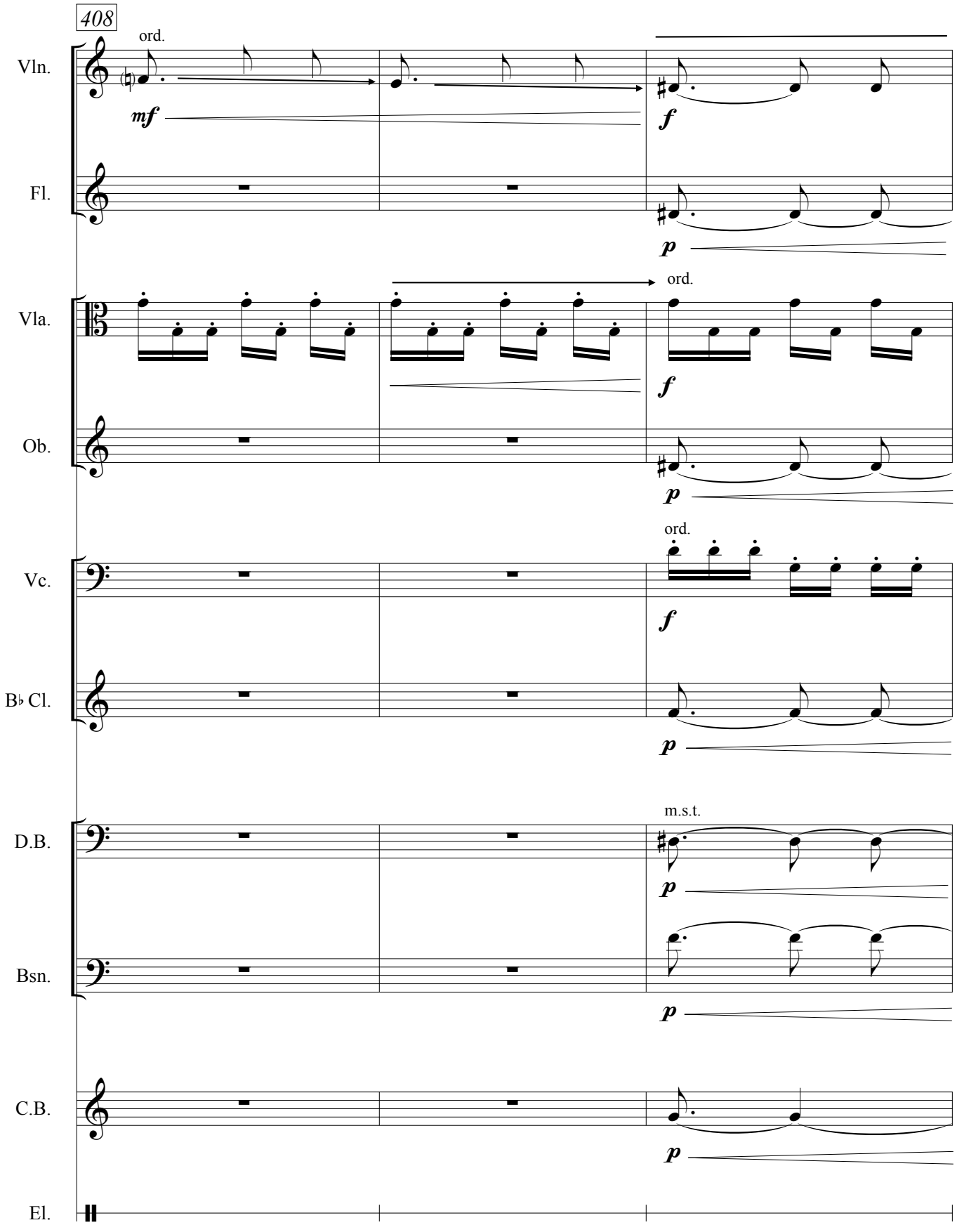

393
m.s.t.
Vln.
p
Fl.
pp
Vla.
Ob.
pp
Vc.
pp
B♭ Cl.
D.B.
Bsn.
C.B.
El.

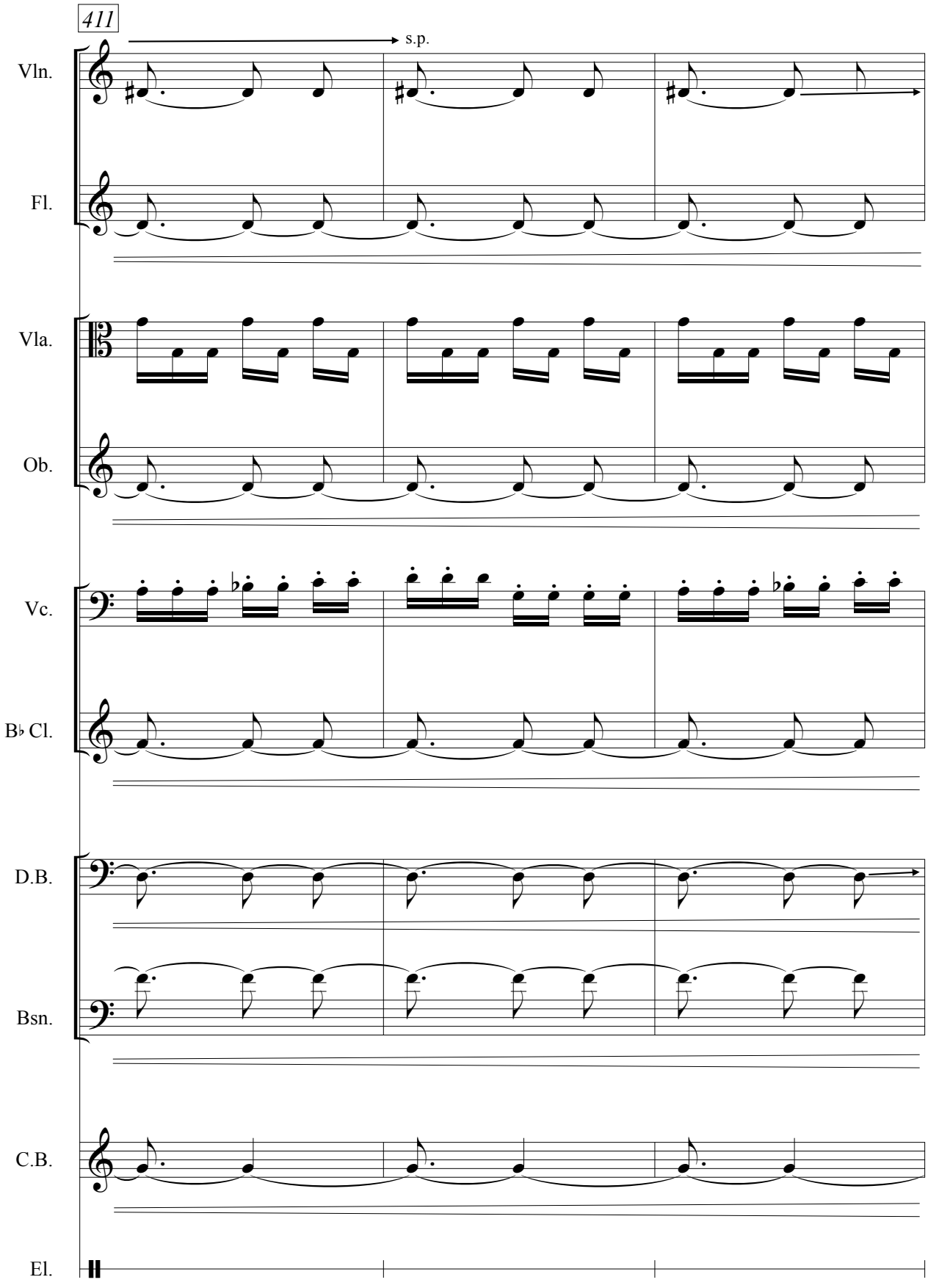

396
ord.
s.p.
Vln.
mf
Fl.
pp
Vla.
Ob.
pp
Vc.
pp
B♭ Cl.
pp
s.t.
D.B.
pp
Bsn.
pp
suede mallet
sim.
C.B.
pp
El.

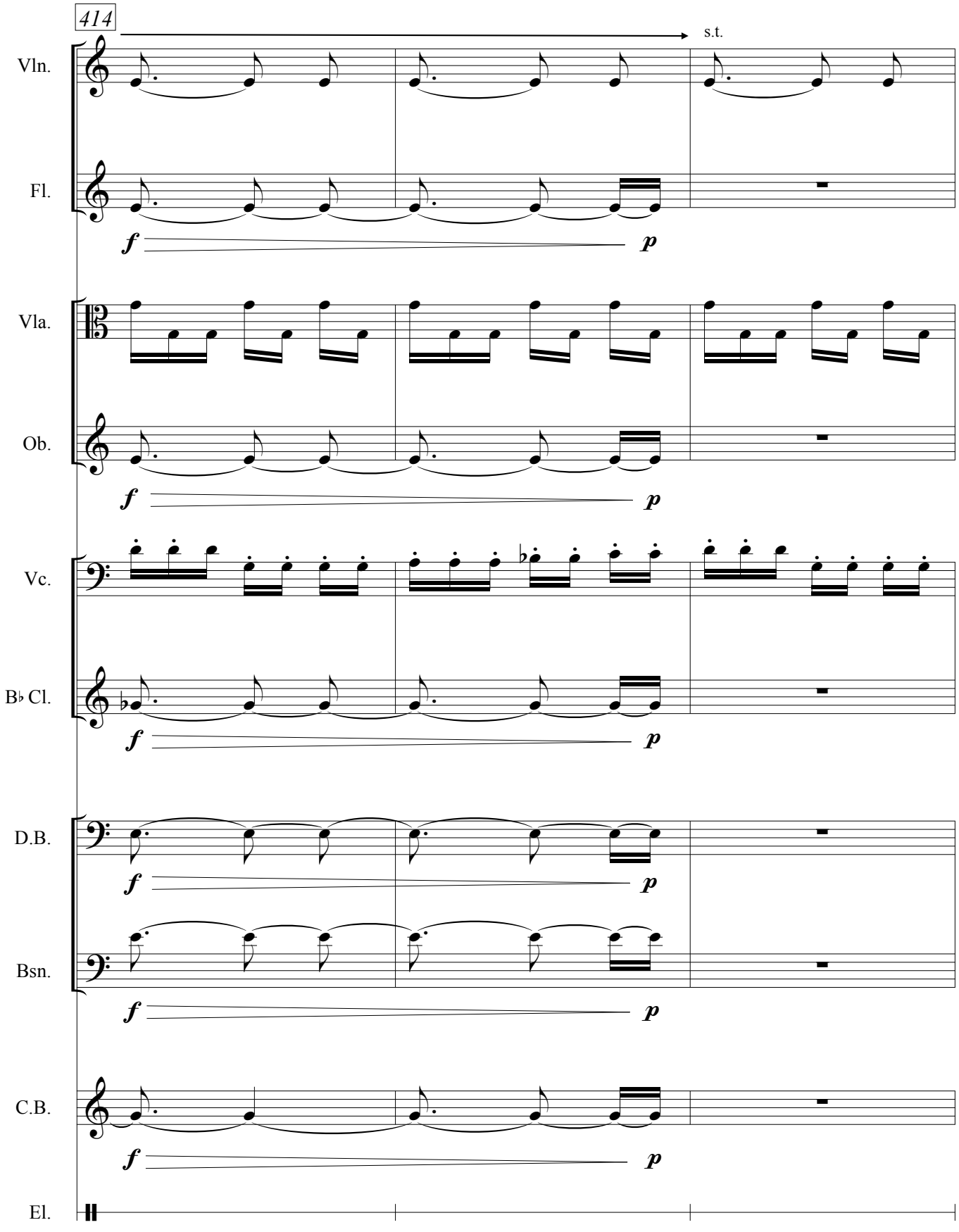

399
ord.
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
mf
pp

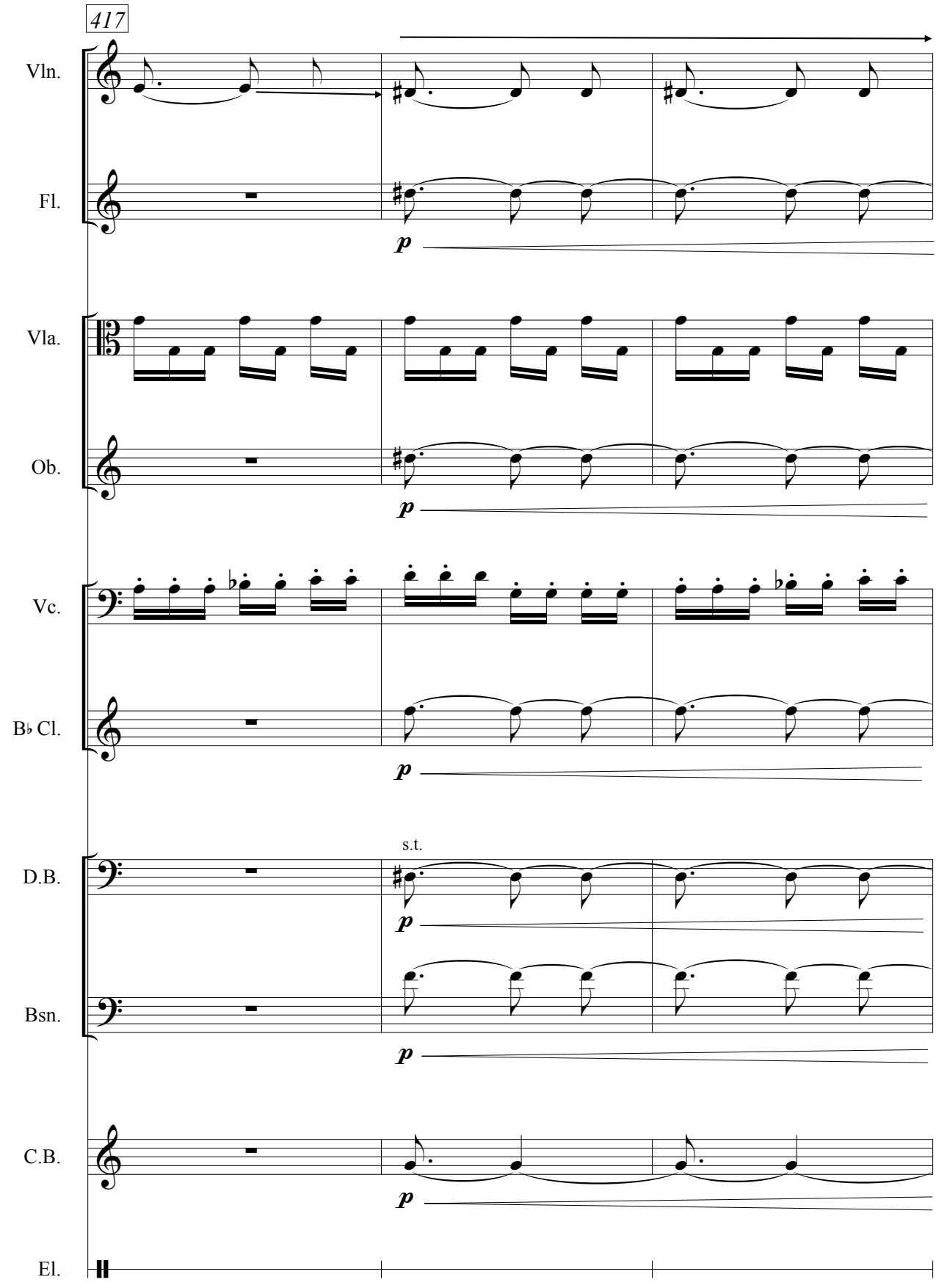

402
s.t.
m.s.t.
Vln.
p
pp
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.

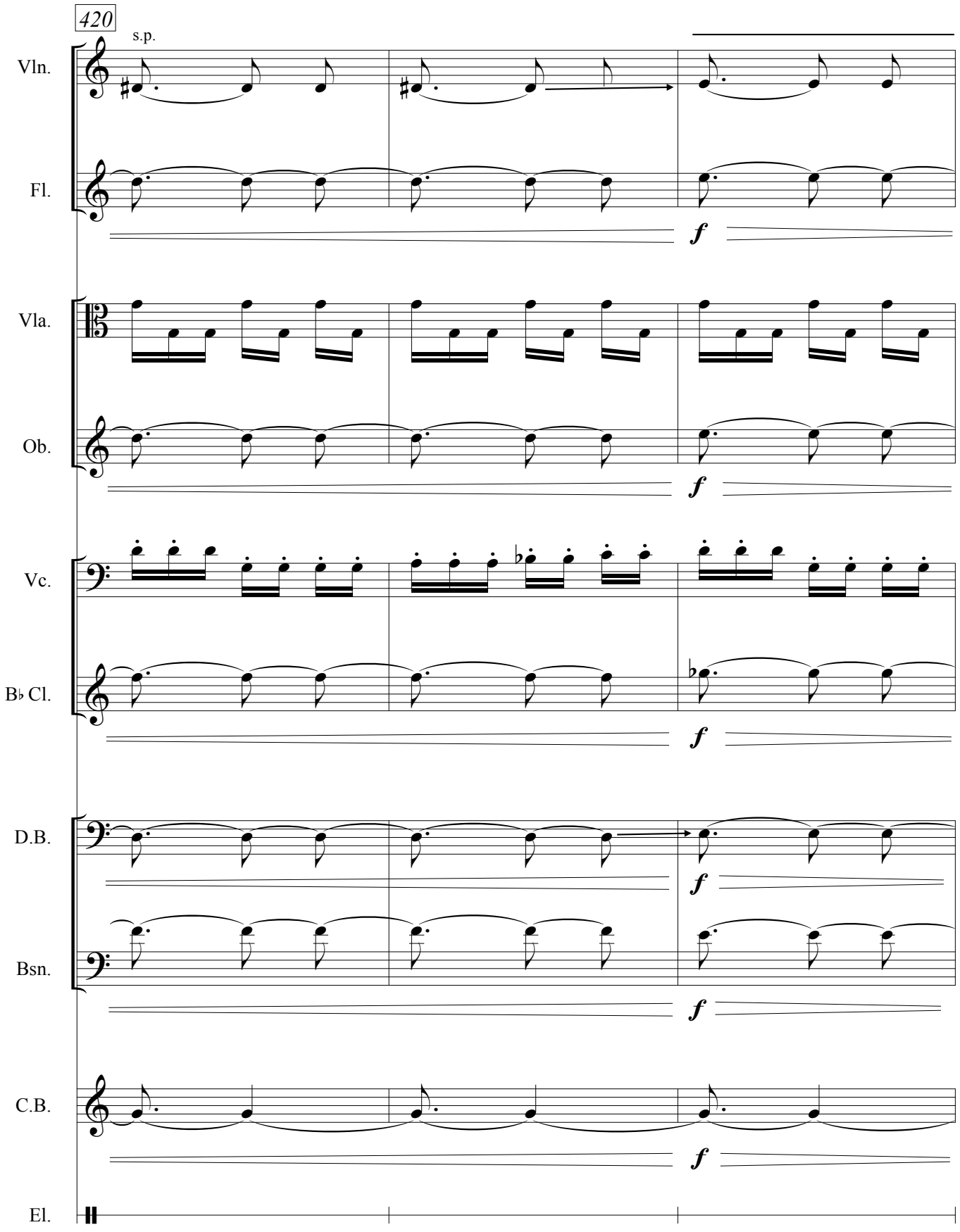

405
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.

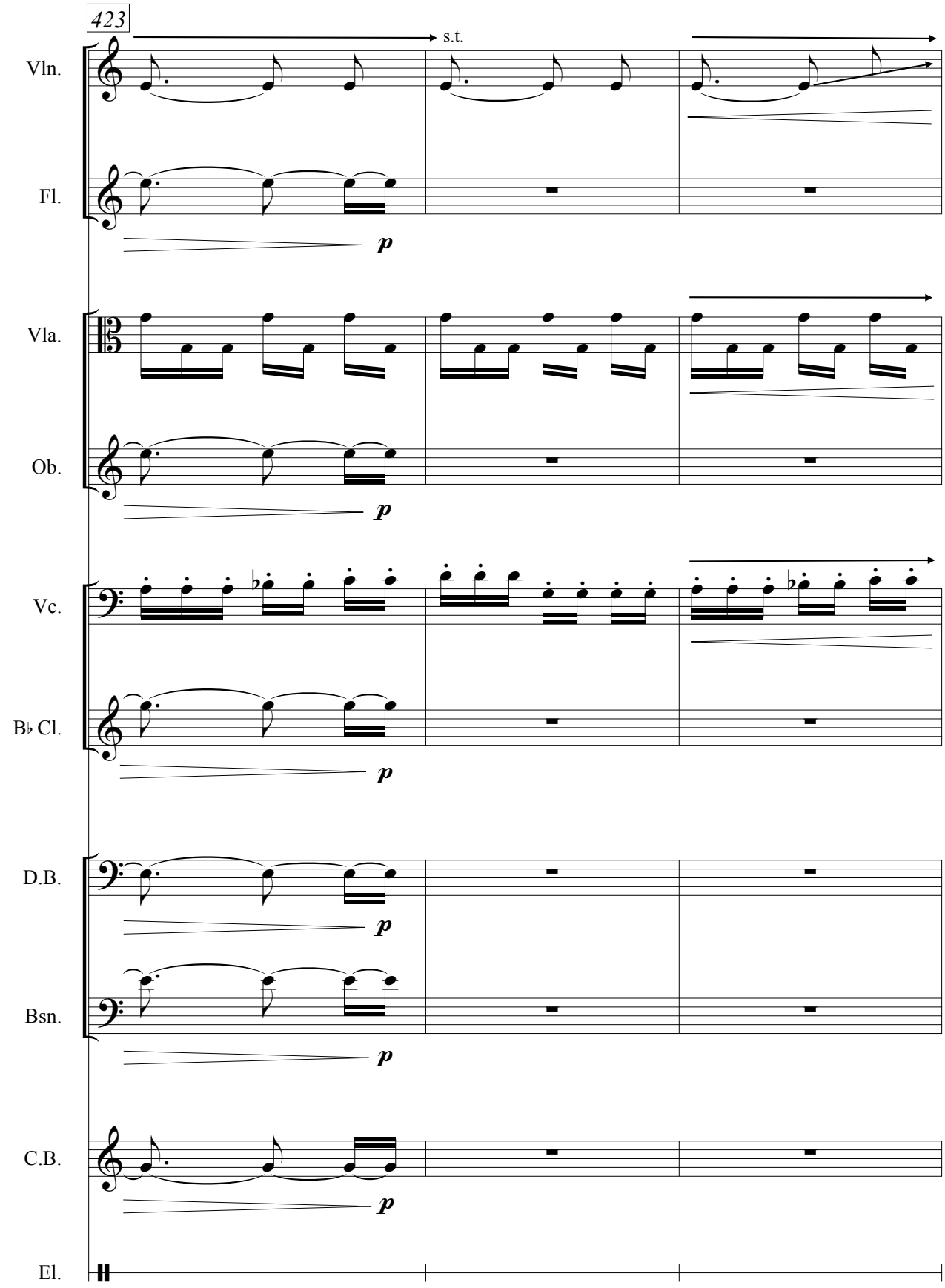

408
Vln.
ord.
mf
f
Fl.
p
Vla.
ord.
f
Ob.
p
Vc.
ord.
f
B♭ Cl.
p
D.B.
m.s.t.
p
Bsn.
p
C.B.
p
El.

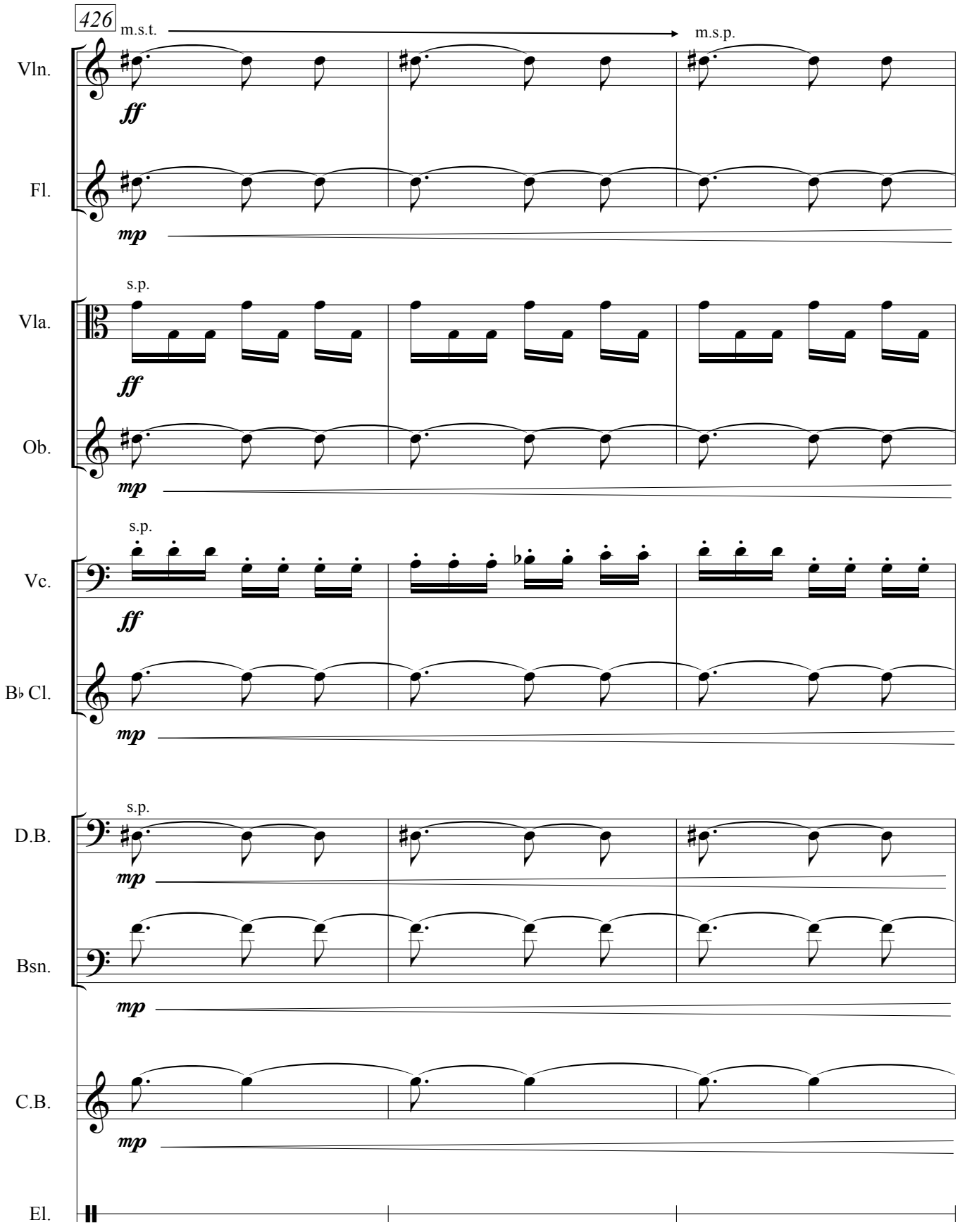

411
s.p.
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.

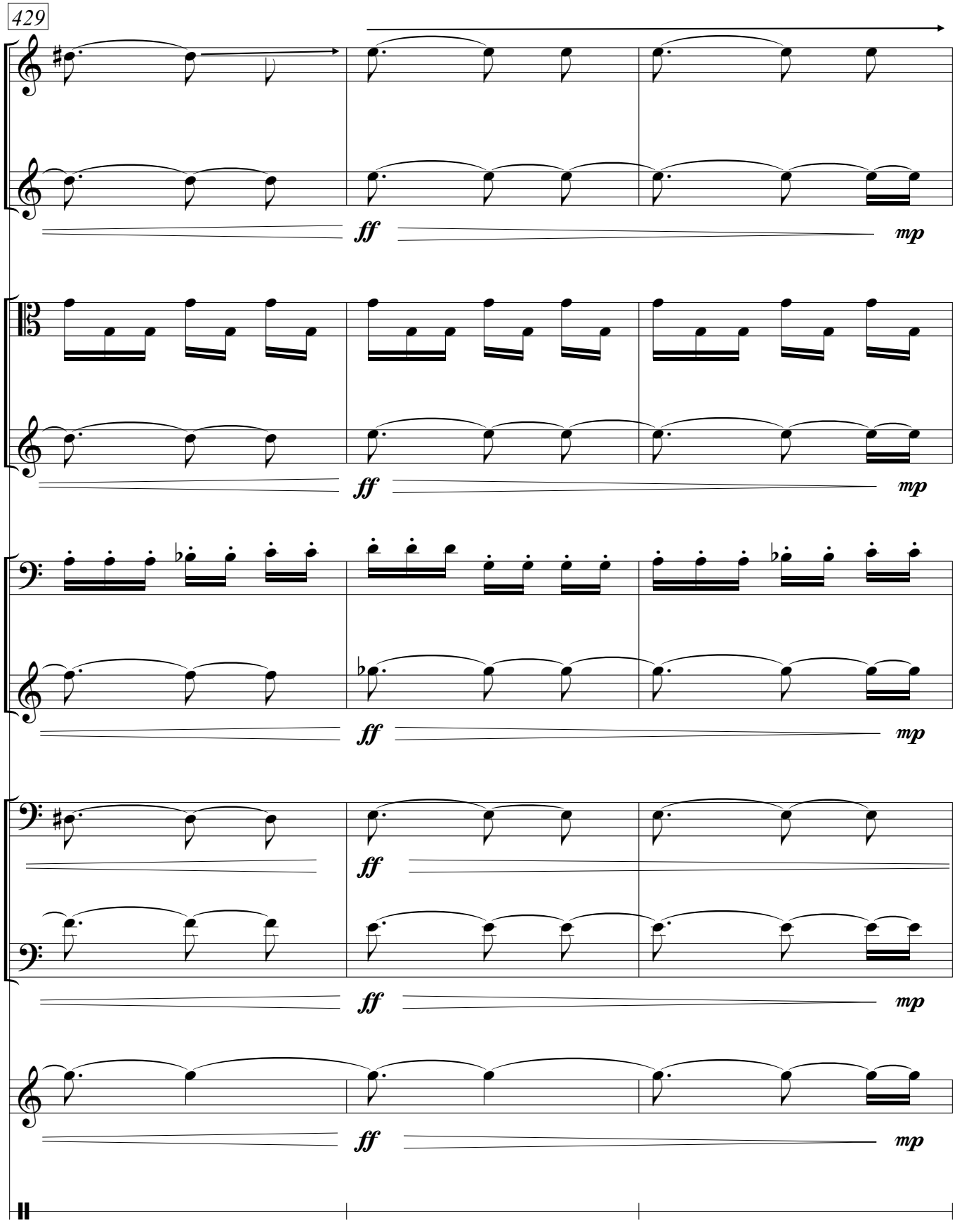

414
s.t.
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
f
p

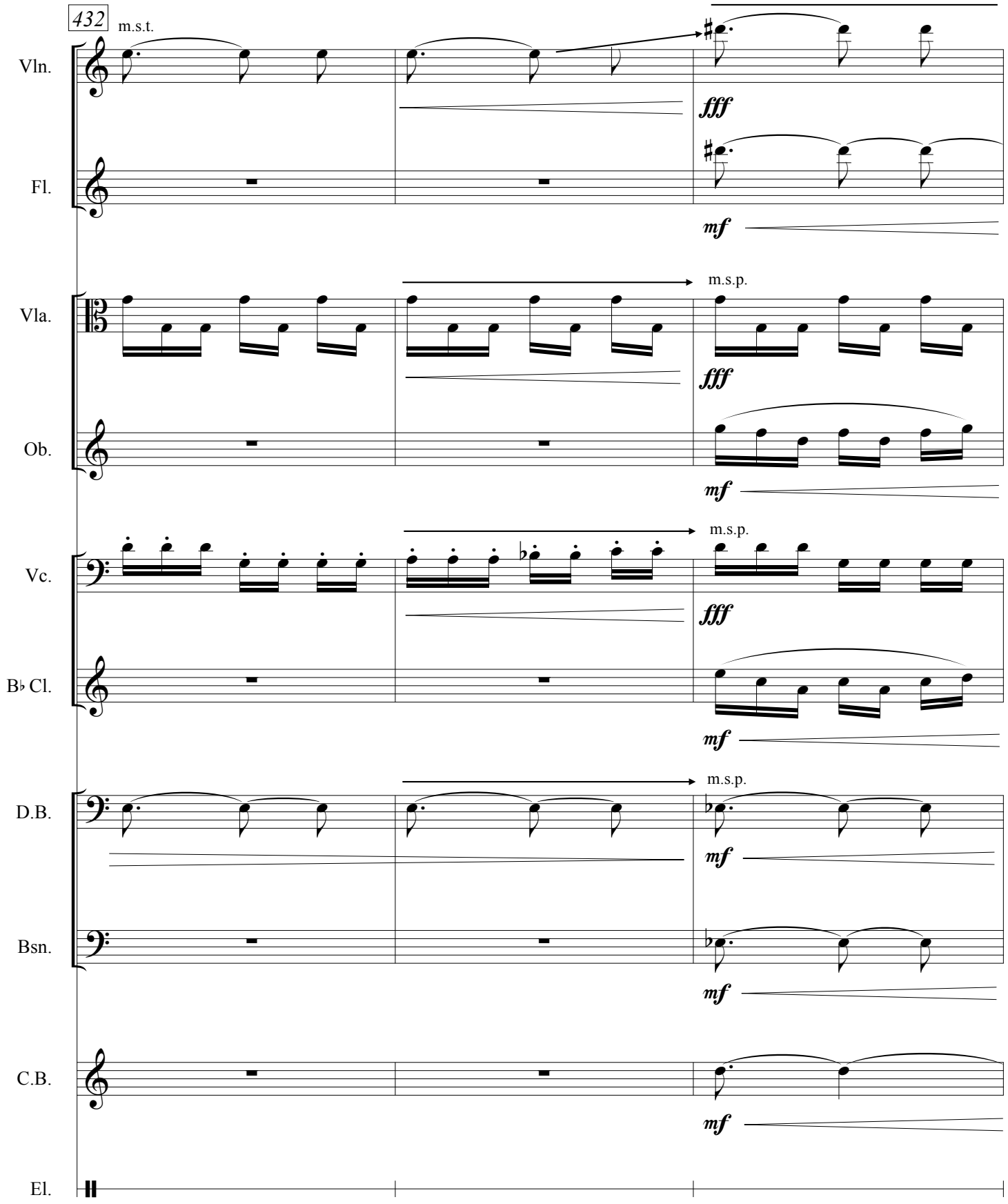

417
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
p

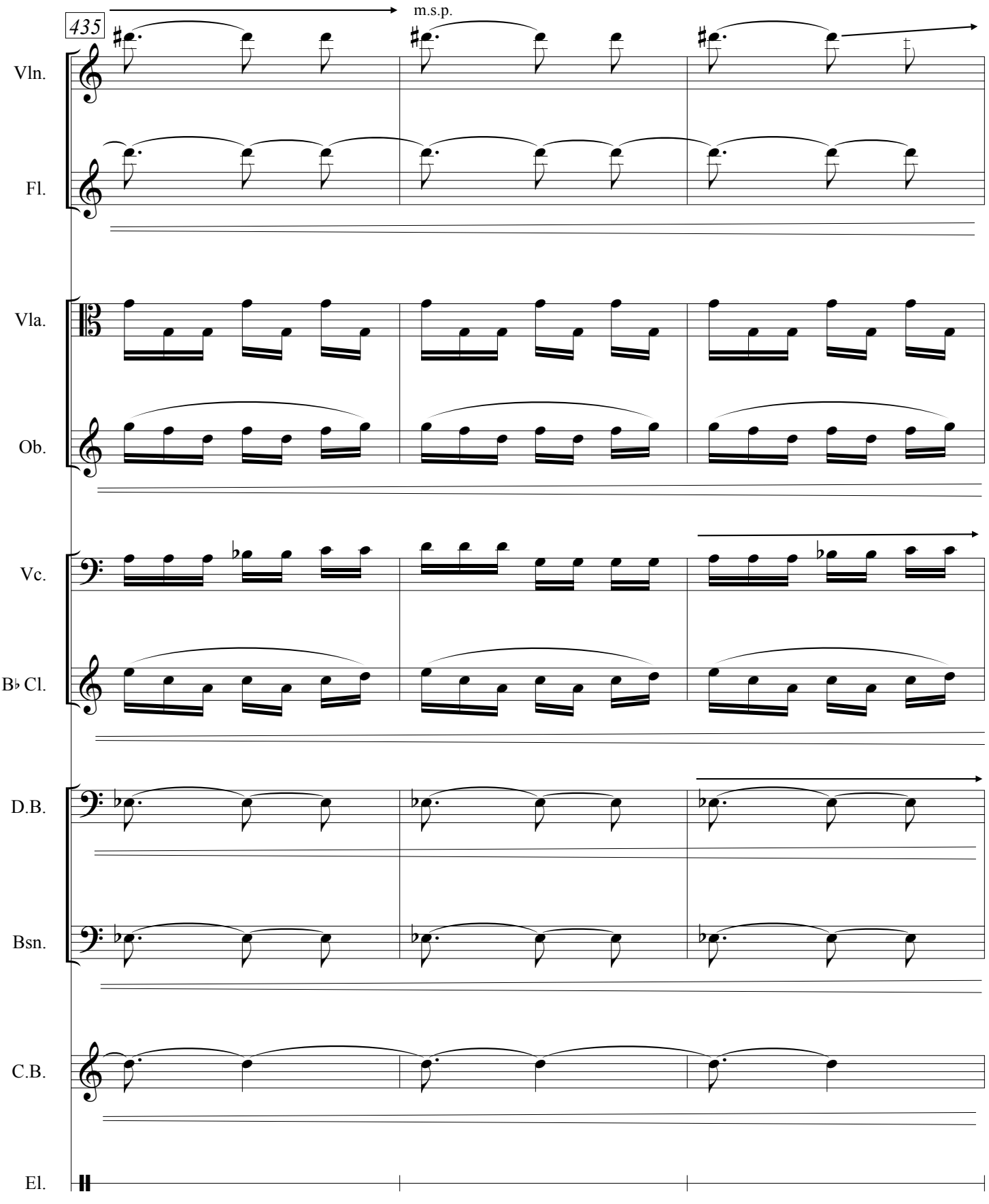

420
s.p.
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
f

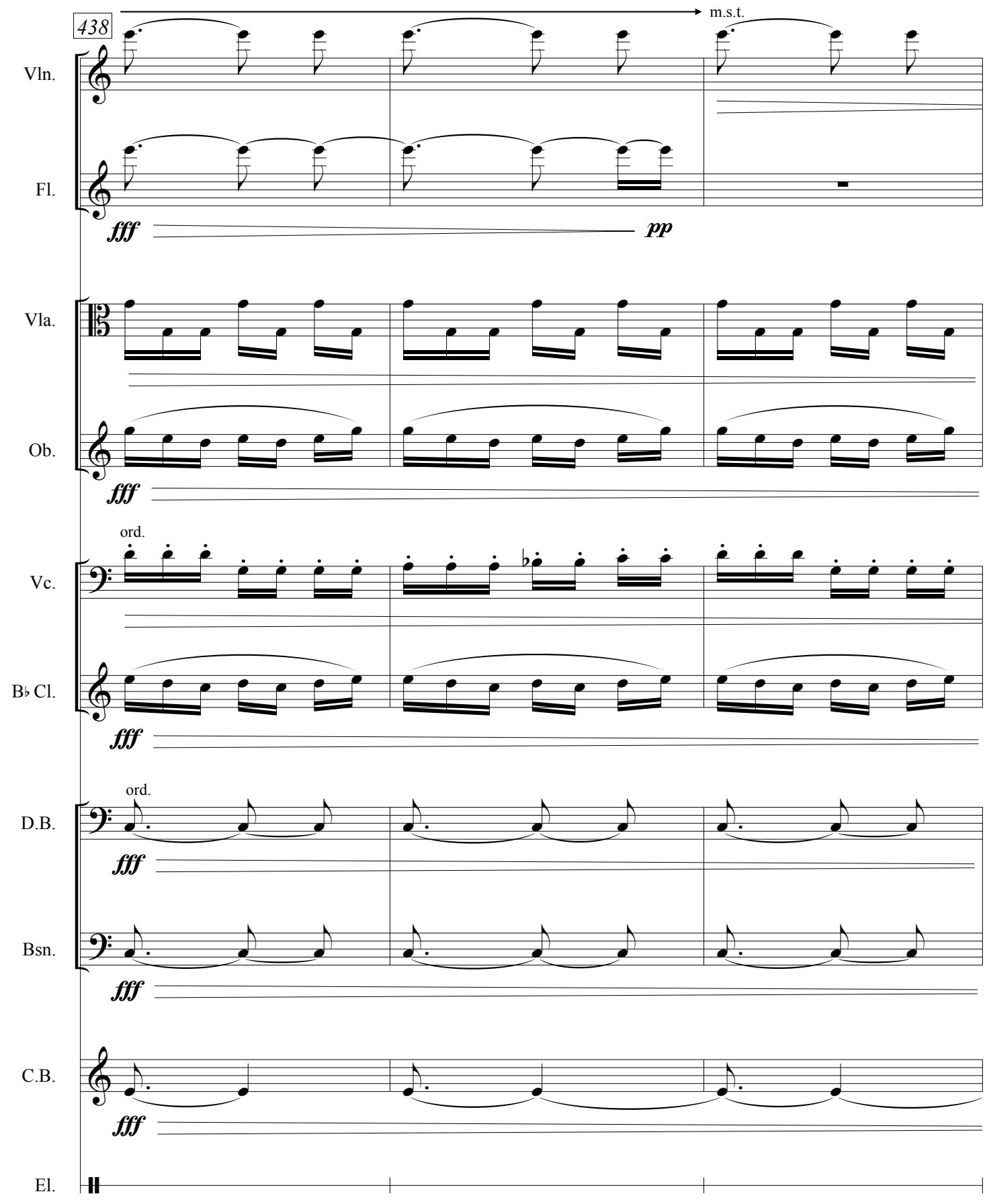

423
s.t.
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
p

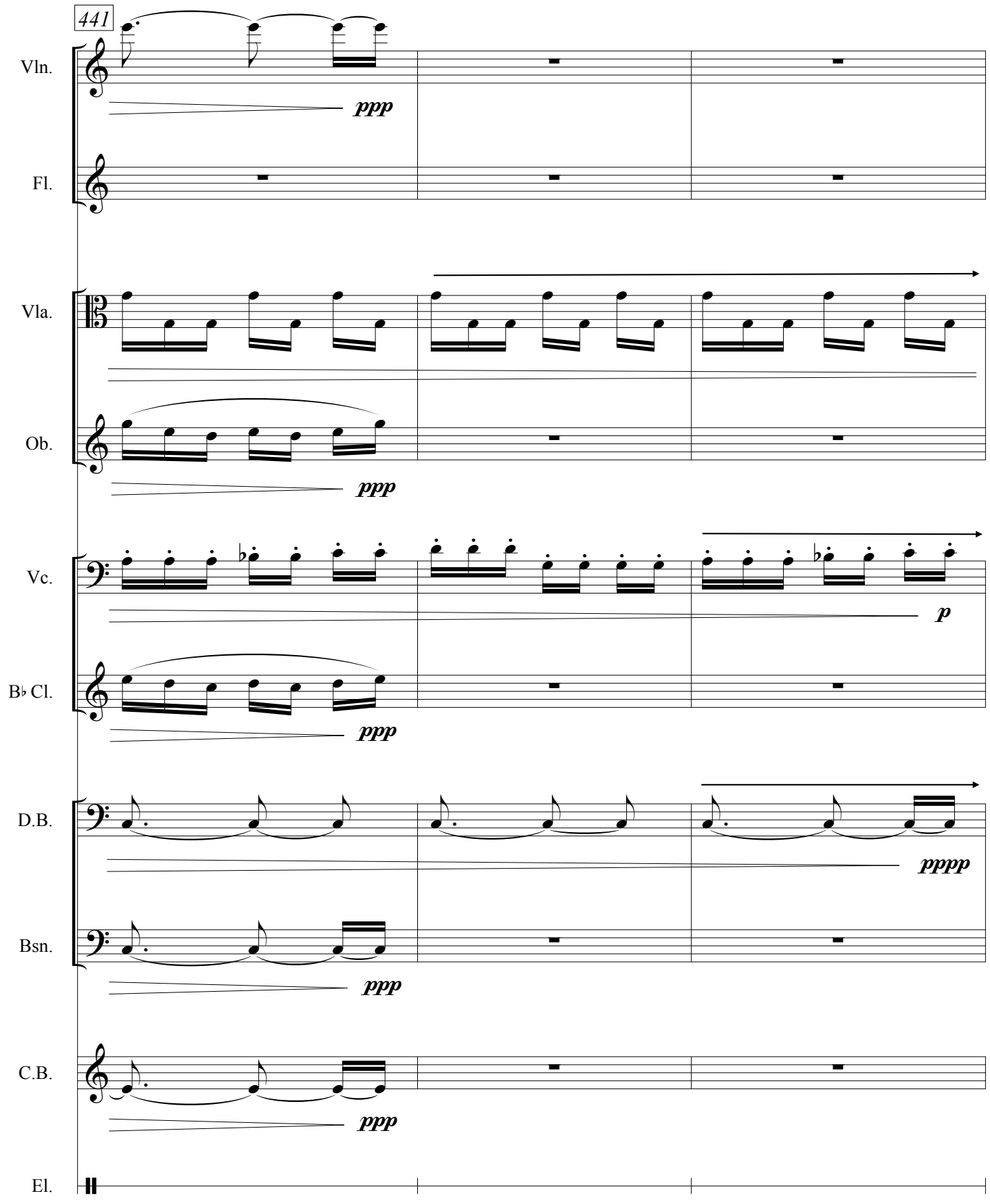

426
m.s.t.
m.s.p.
Vln.
ff
Fl.
mp
s.p.
Vla.
ff
Ob.
mp
s.p.
Vc.
ff
B♭ Cl.
mp
s.p.
D.B.
mp
Bsn.
mp
C.B.
mp
El.

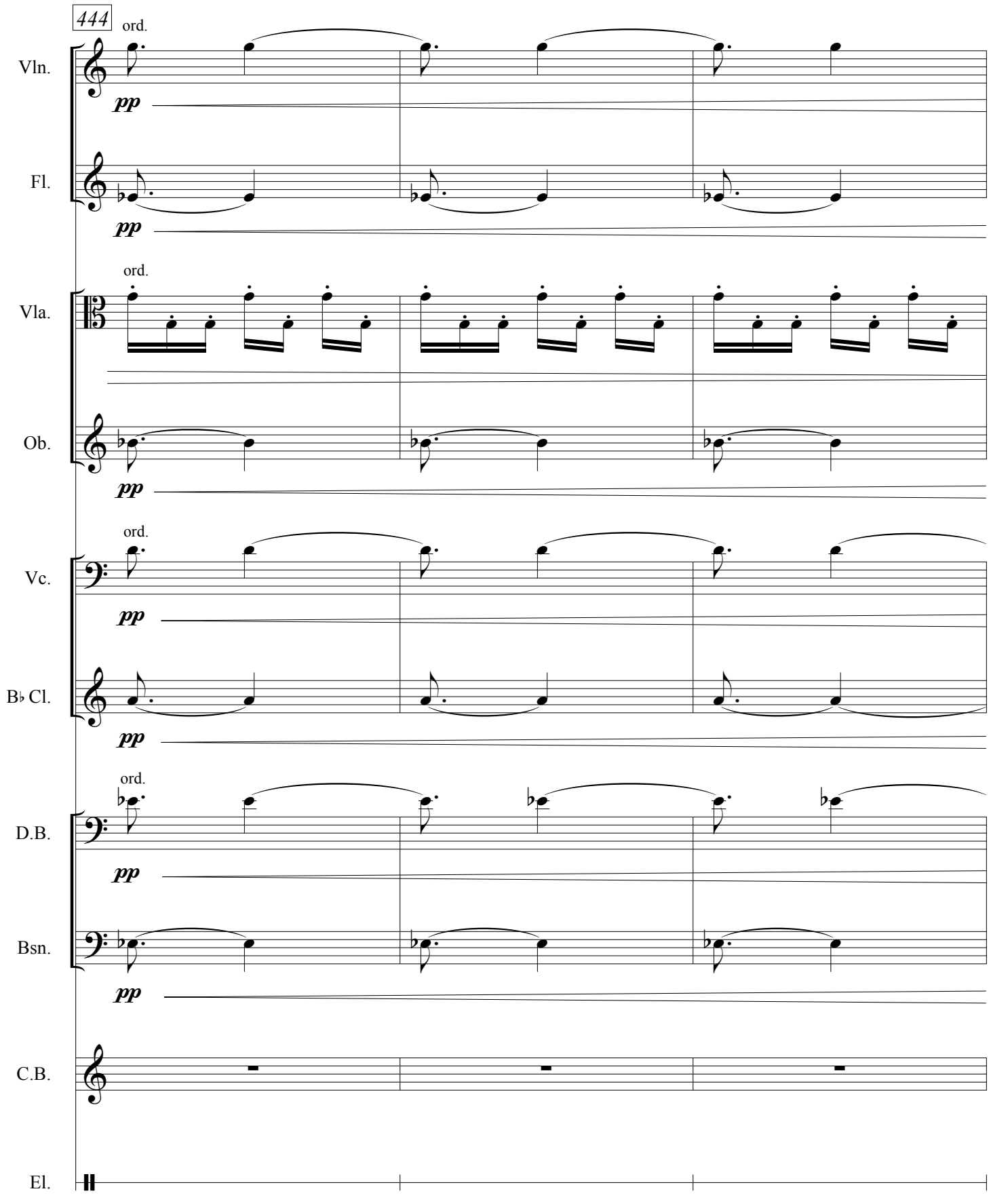

429
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
ff
mp

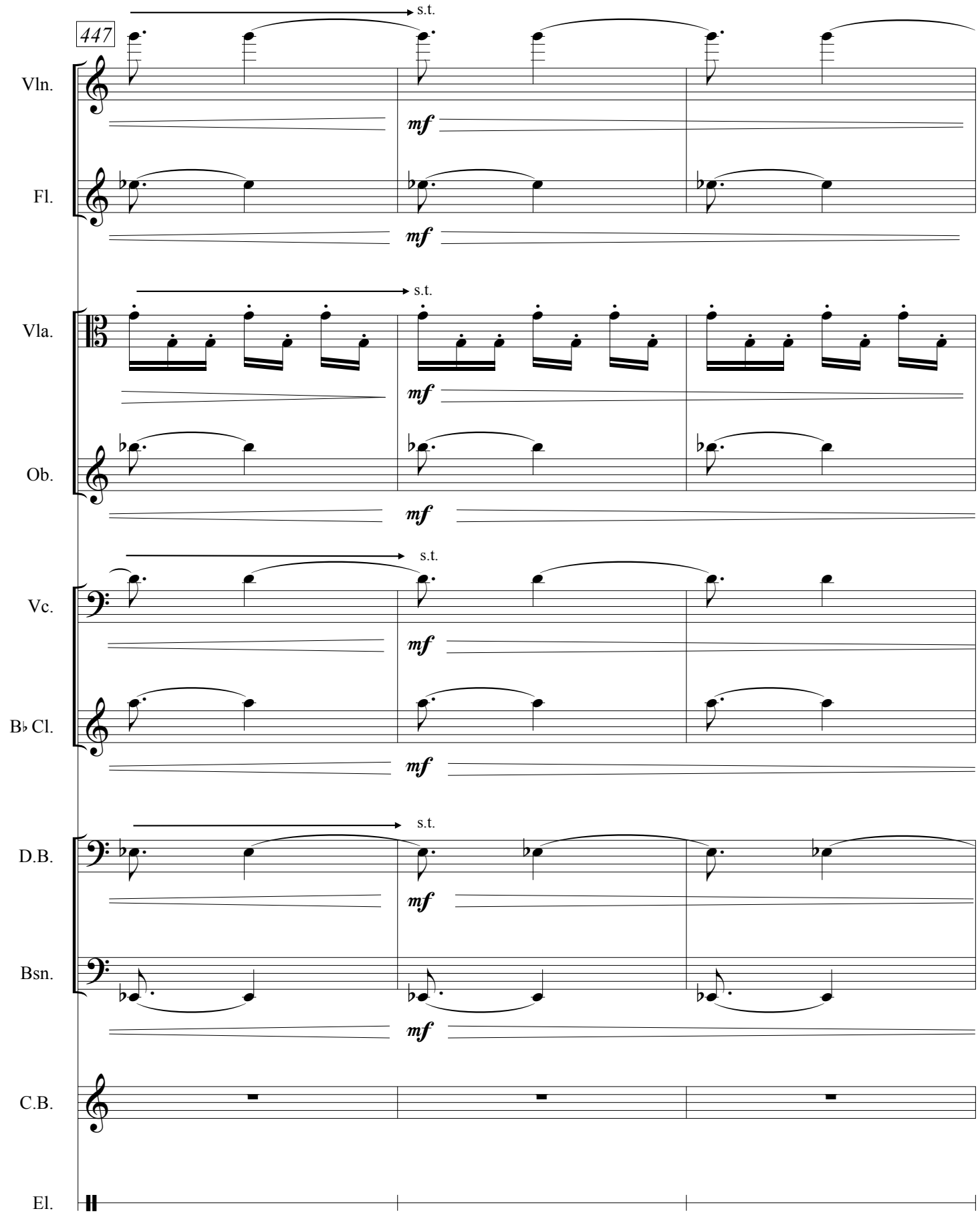

432
m.s.t.
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
m.s.p.
m.s.p.
m.s.p.
fff
mf

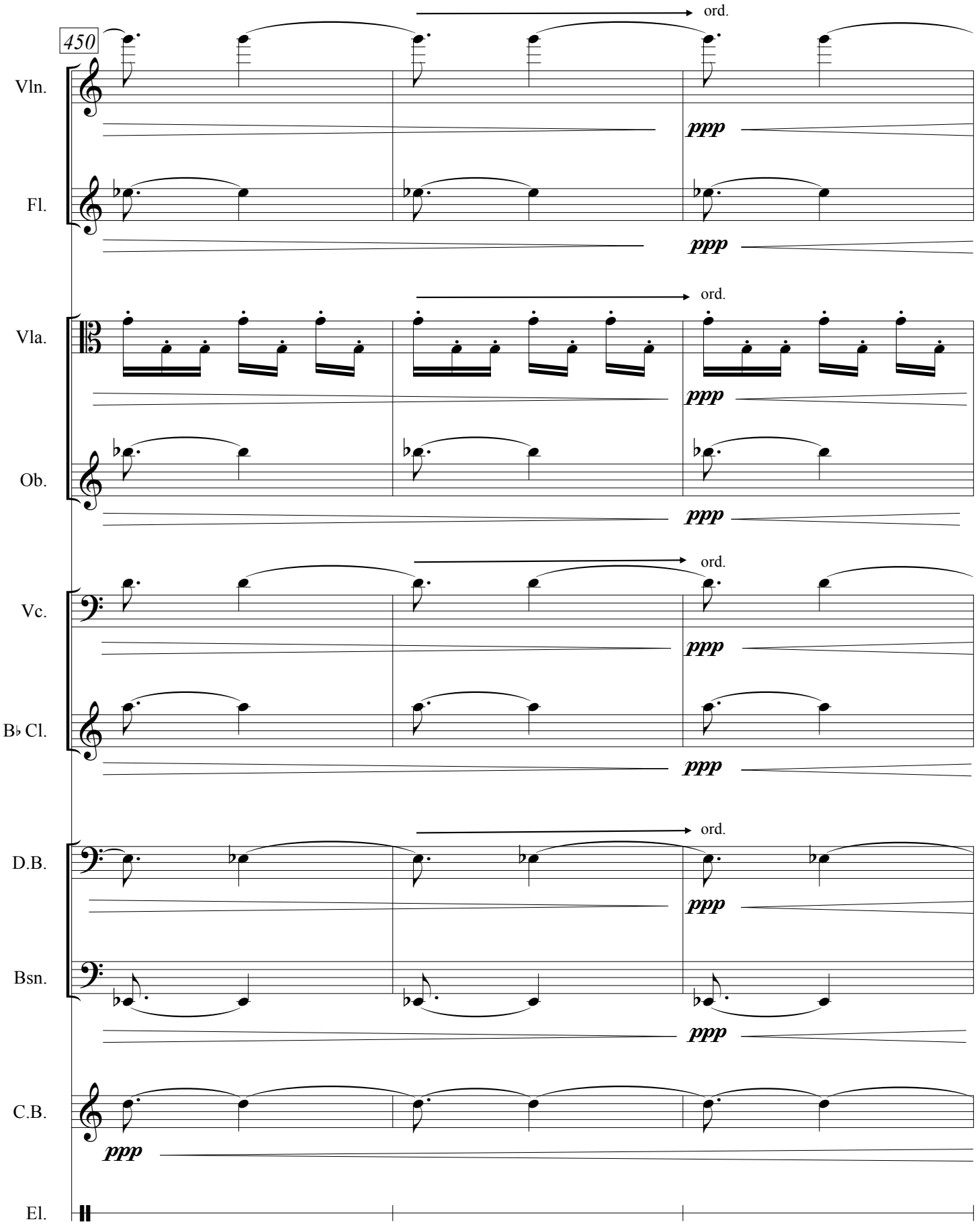

435
m.s.p.
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.

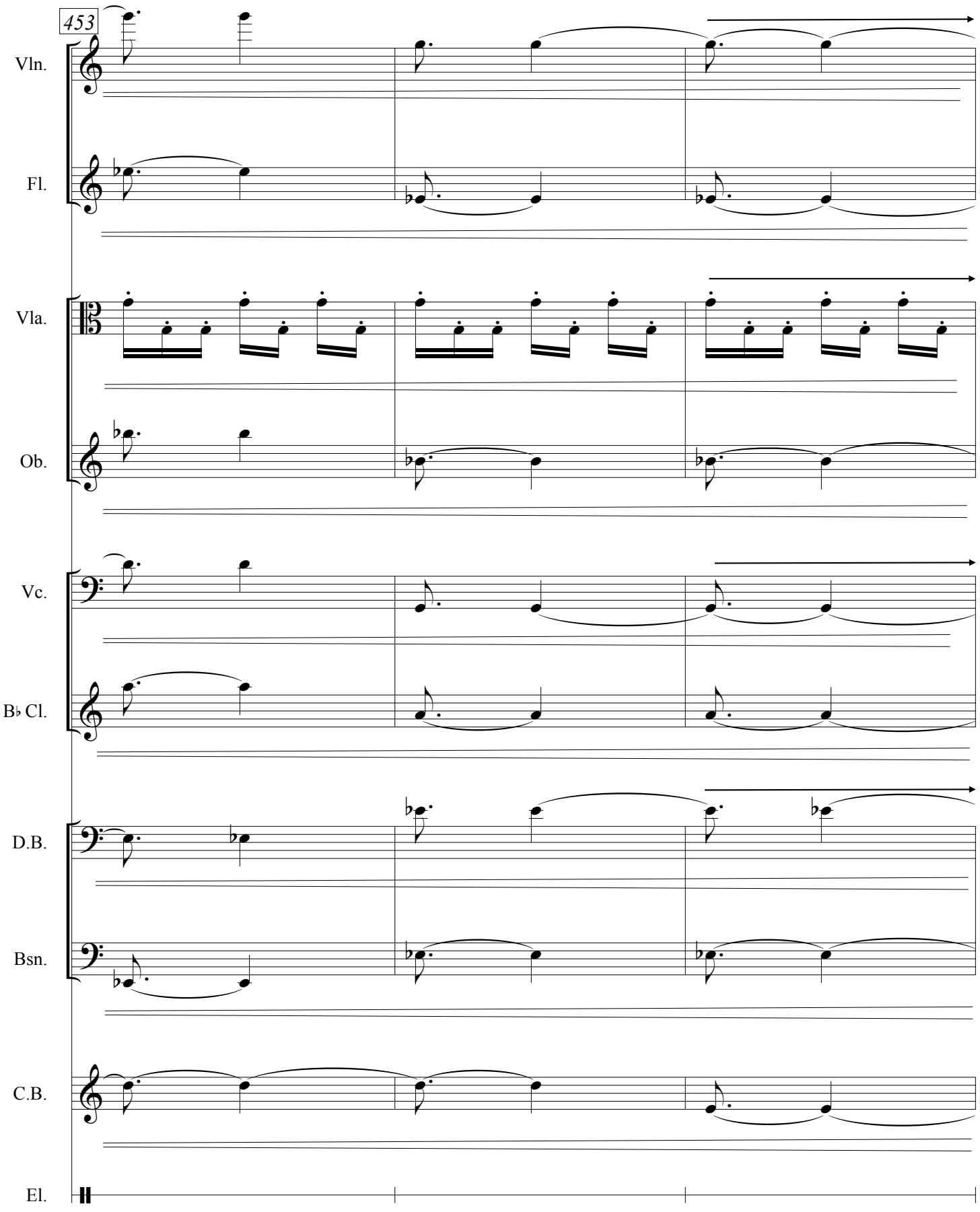

438
m.s.t.
Vln.
Fl.
fff
pp
Vla.
Ob.
fff
ord.
Vc.
B♭ Cl.
fff
ord.
D.B.
fff
Bsn.
fff
C.B.
fff
El.

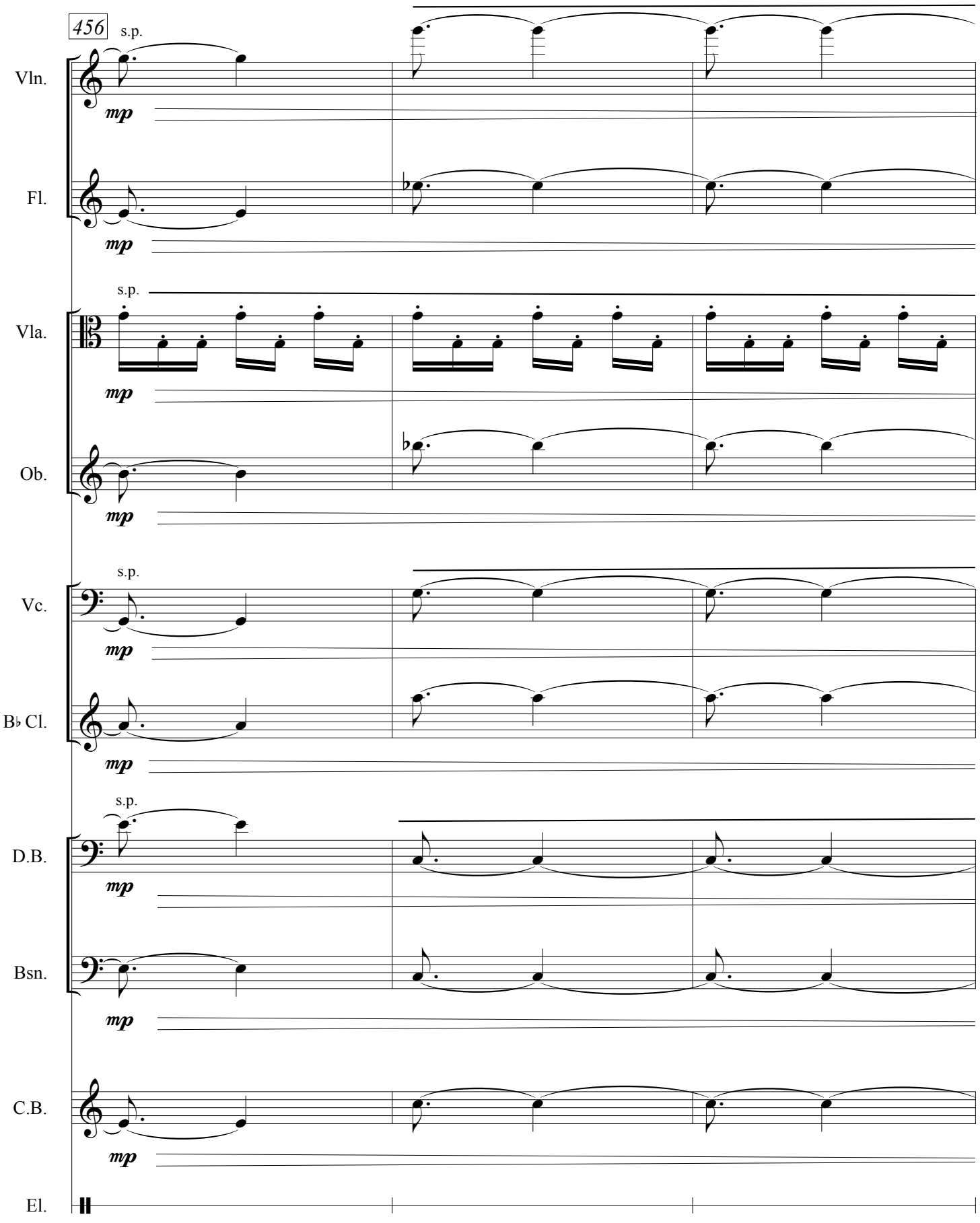

441
Vln.
ppp
Fl.
Vla.
Ob.
ppp
Vc.
p
B♭ Cl.
ppp
D.B.
pppp
Bsn.
ppp
C.B.
ppp
El.

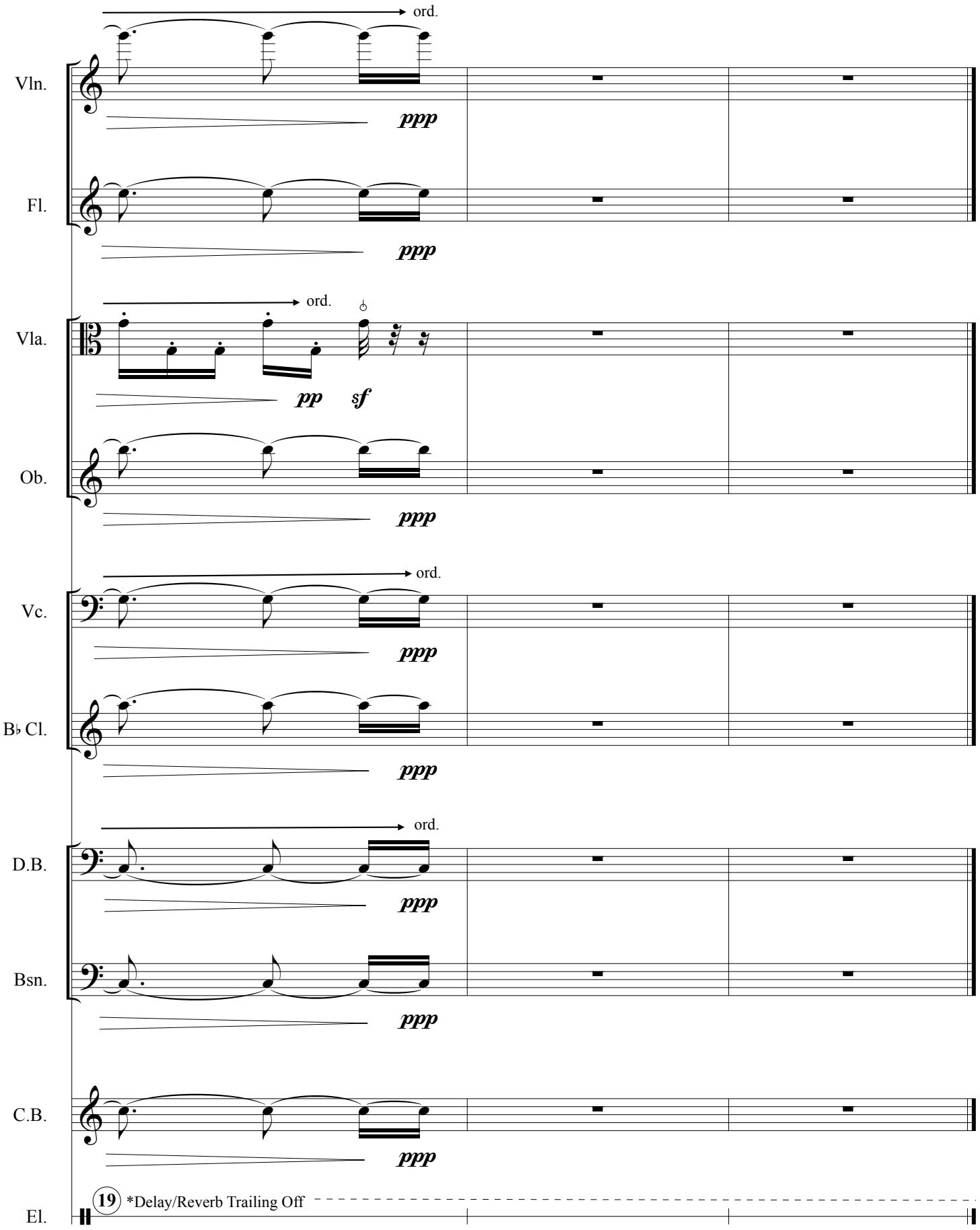

444
ord.
Vln.
pp
Fl.
pp
ord.
Vla.
Ob.
pp
ord.
Vc.
pp
B♭ Cl.
pp
ord.
D.B.
pp
Bsn.
pp
C.B.
El.


447
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
s.t.
mf


450
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.
ord.
ppp


453
Vln.
Fl.
Vla.
Ob.
Vc.
B♭ Cl.
D.B.
Bsn.
C.B.
El.


456
s.p.
Vln.
mp
Fl.
mp
s.p.
Vla.
mp
Ob.
mp
s.p.
Vc.
mp
B♭ Cl.
mp
s.p.
D.B.
mp
Bsn.
mp
C.B.
mp
El.


Vln.
ord.
ppp
Fl.
ppp
Vla.
ord.
pp
sf
Ob.
ppp
Vc.
ord.
ppp
B♭ Cl.
ppp
D.B.
ord.
ppp
Bsn.
ppp
C.B.
ppp
El.
19
*Delay/Reverb Trailing Off

CURRICULUM VITAE

NAME: Nicholas James Hall

ADDRESS: School of Music
105 W Brandeis Ave.,
University of Louisville
Louisville, KY 40208

DOB: Louisville, KY – June 22, 1986

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& TRAINING: B.A. Music
Western Kentucky University
2006-11