Black Onyx

The Human Brain on Music and Sound

MFA Simon Fraser University
Music Psychology Graduation Project

2018

Aryan B

Instrumentation:

Flute

ViolonCello

Grand Piano

Prelude

First Movement

Second Movement

Flute:

General:

j.w - jet whistle

Violon Cello

Prelude:

play with molto rubato

Electronic music with no meter and sense of rhythm will be playing alongside like a backing track

General:

all "x" noteheads mean mute the strings with the left hand while col legno
to get a percussive sound (no pitch whatsoever)

First Movement:

Measure 88 onwards - go back and forth muting the strings and letting the
chord sound with col legno without changing the finger position.

Normale noteheads should have clear pitch

Easure 98 and 99: that beam indicates gradually bringing the bow behind the bridge
let it ring out a lot while maintaining the rhythm

Second Movement:

arpeggiated gestures introduced first on measure 10 - do not kill the sound immediately,
let it ring slightly

Grand Piano:

General:

all "x" noteheads mean tap the exposed strings with palm of hand while depressing
the pedal (let it ring out)

all cluster chords are white note clusters

First Movement:

Chord first introduced on measure 53 - is simply an arpeggio
written with grace notes for the ease of reading

Measure 138 onwards are explained in the score

Black Onyx

The Human Brain on Music and Sound

Prelude

Instrumentation:

Solo ViolonCello
Flute (Tacet)
Grand Piano (Tacet)

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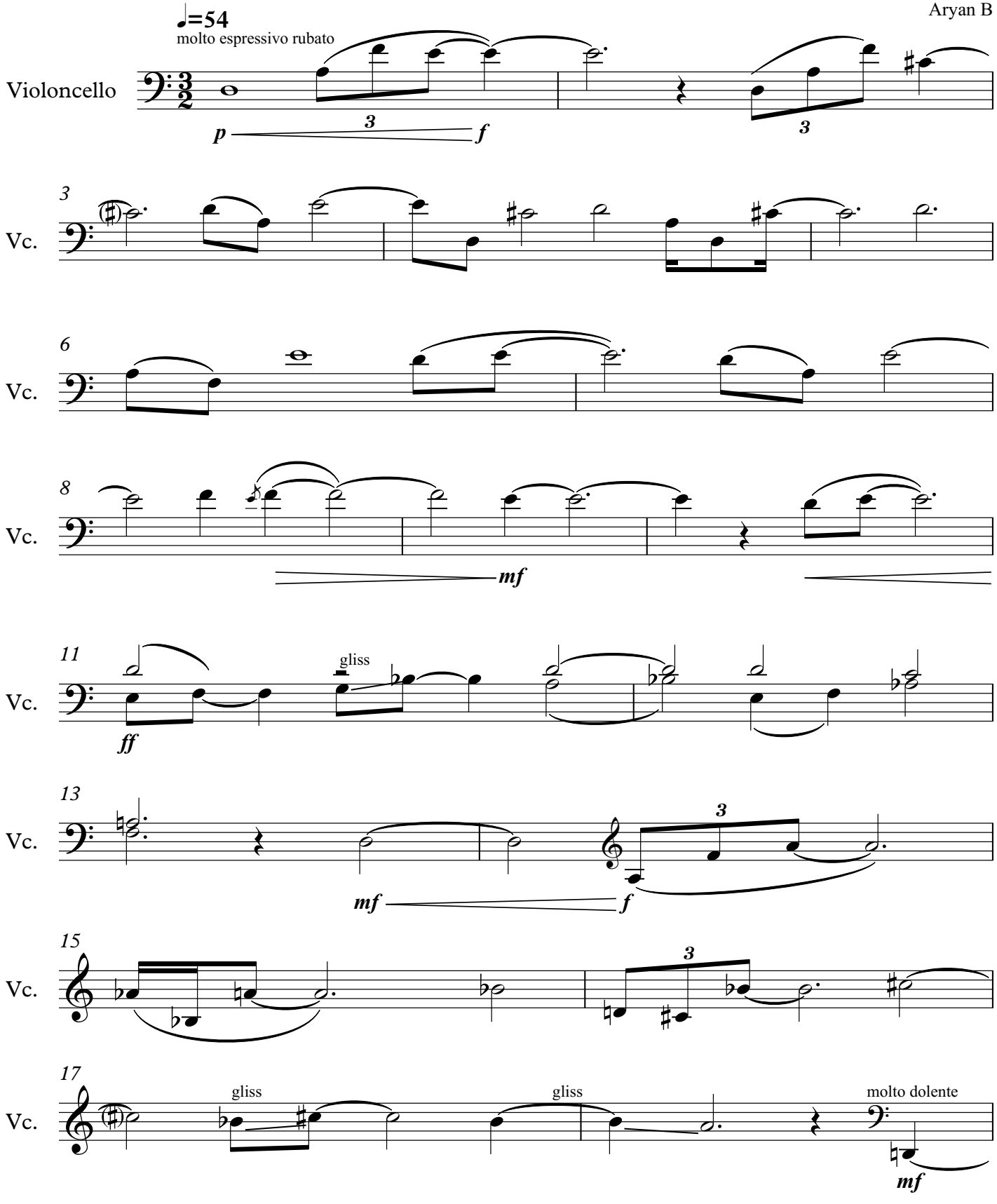
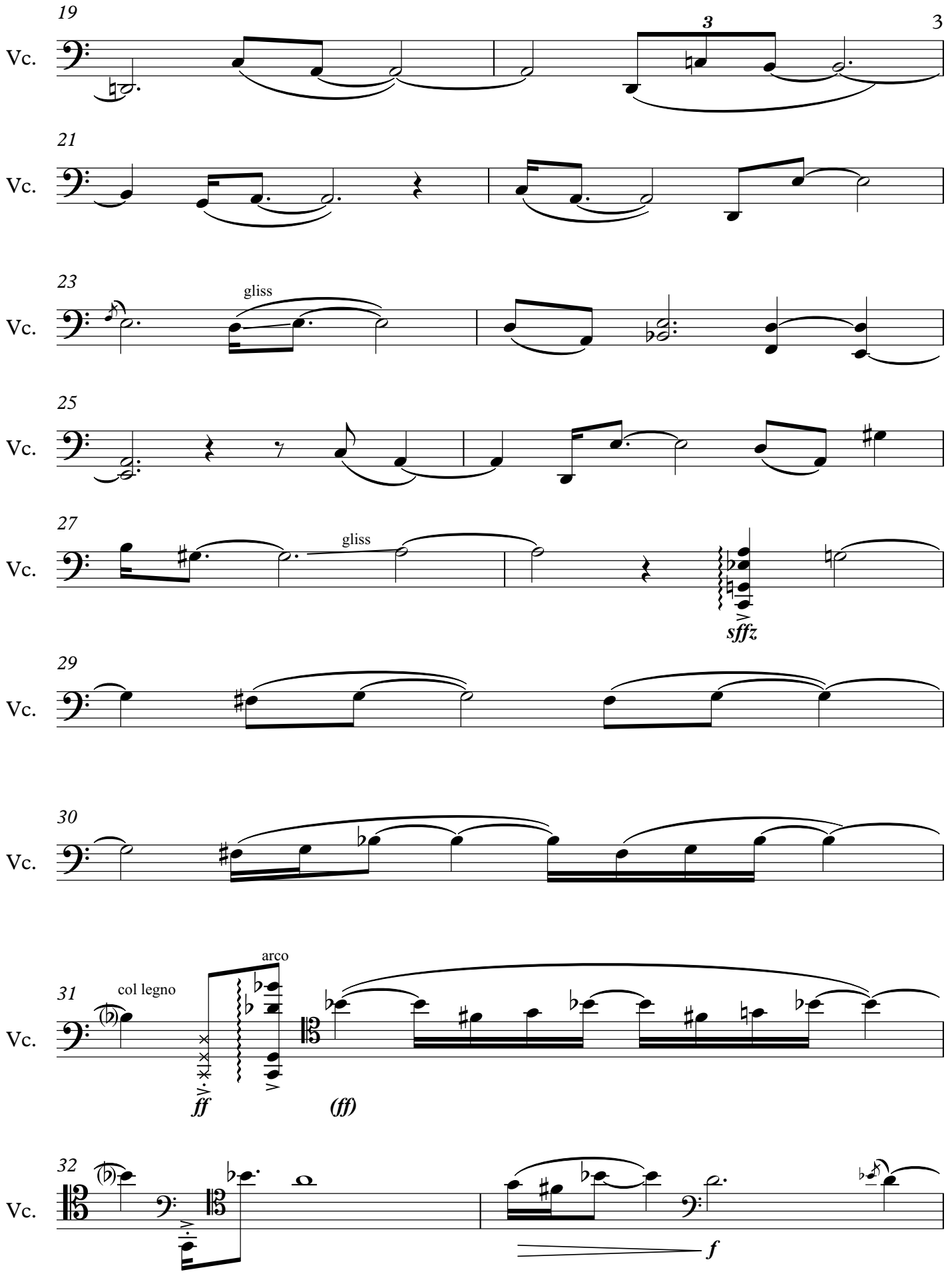
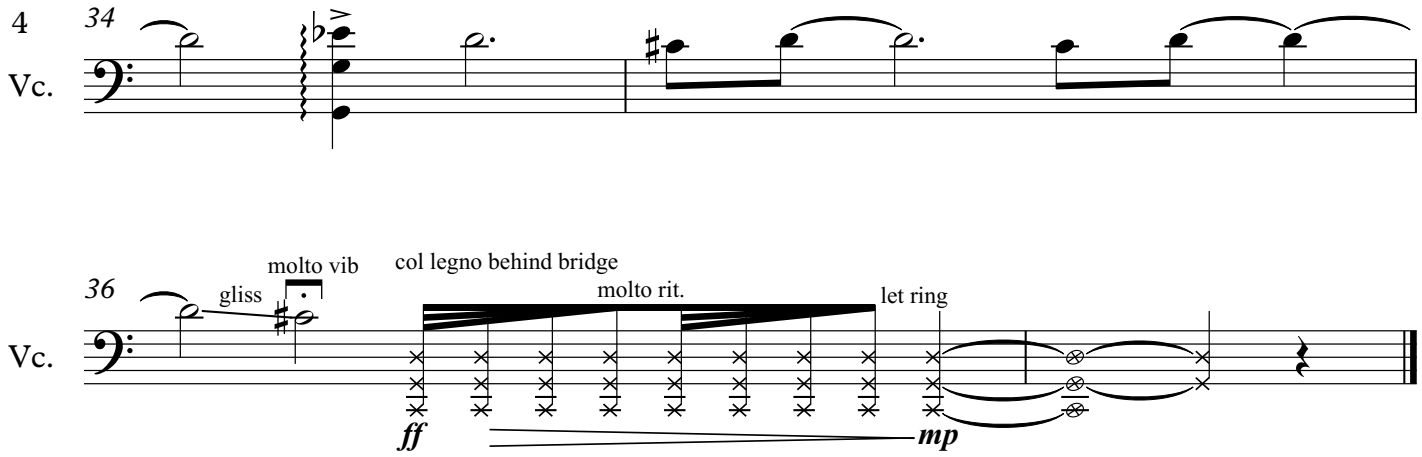
The Human Brain on Music and Sound

Prelude:

Aryan B




19
Vc.
3
21
Vc.
23
Vc.
gliss
25
Vc.
27
Vc.
gliss
sffz
29
Vc.
30
Vc.
31
Vc.
col legno
arco
ff
(ff)
32
Vc.
f


34
Vc.

36
molto vib
gliss
col legno behind bridge
molto rit.
let ring
Vc.
ff
mp

Black Onyx

The Human Brain on Music and Sound

Movement I

Instrumentation:

ViolonCello
Grand Piano
Flute (Tacet)

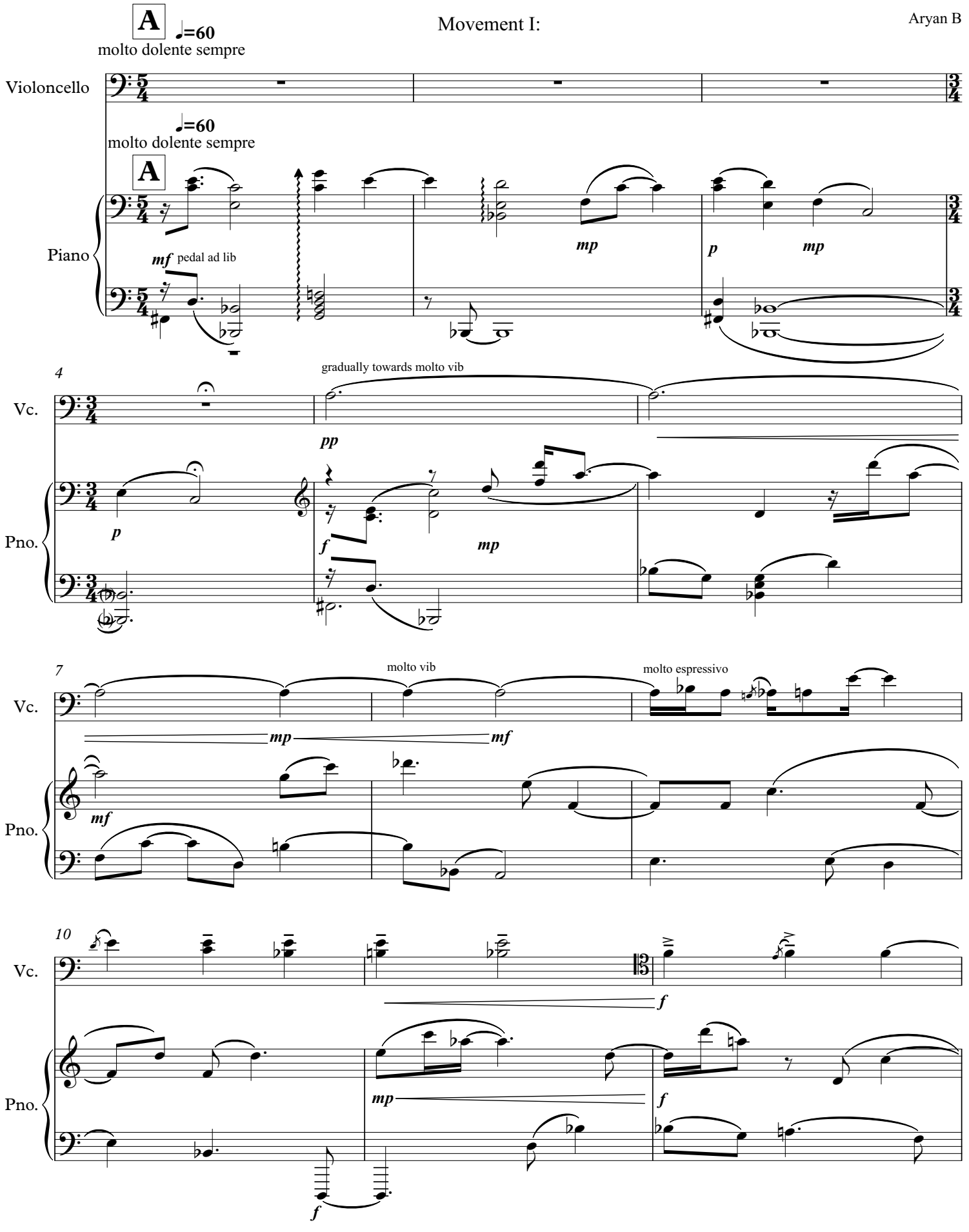
Approximate duration 10 min 30 sec

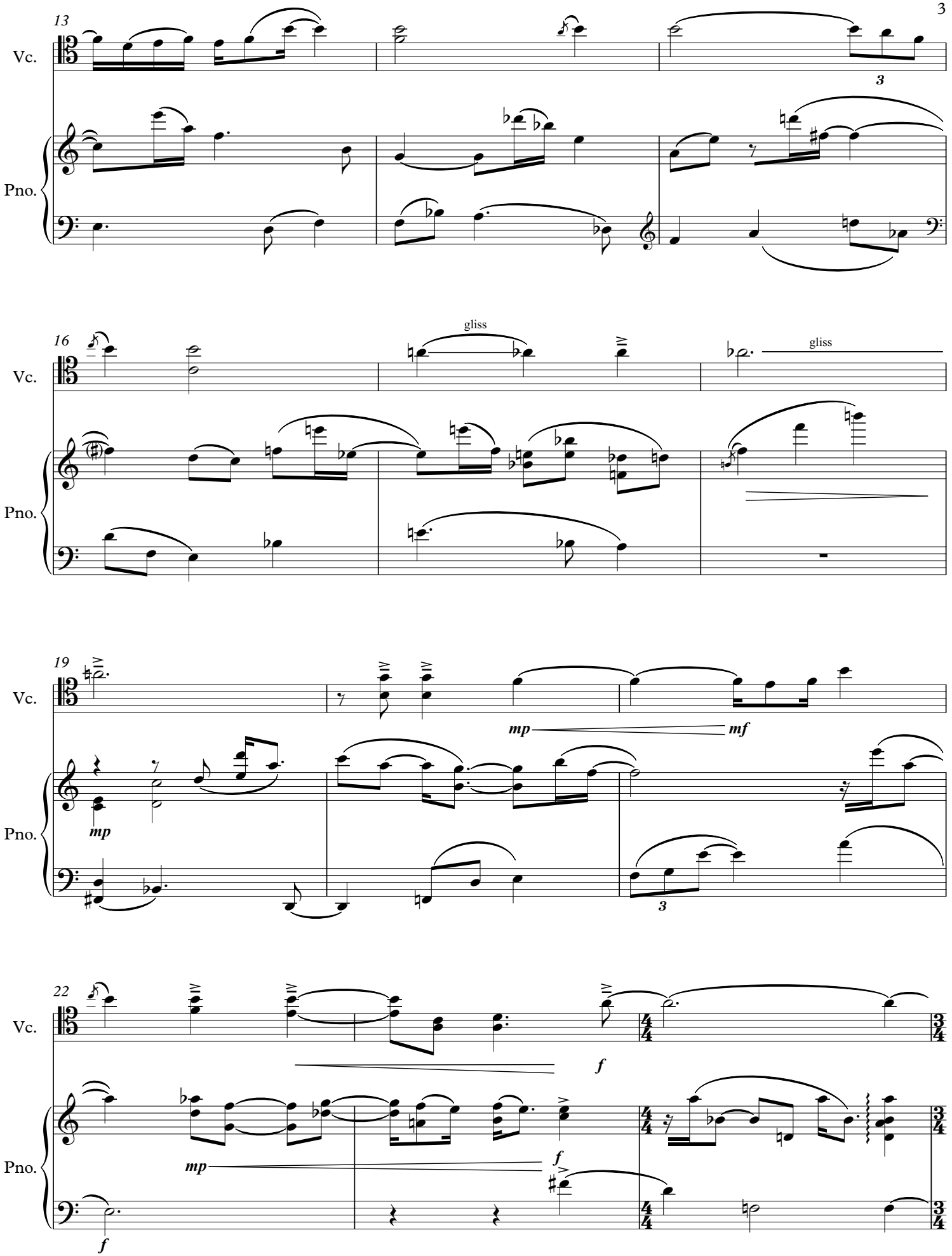
Black Onyx

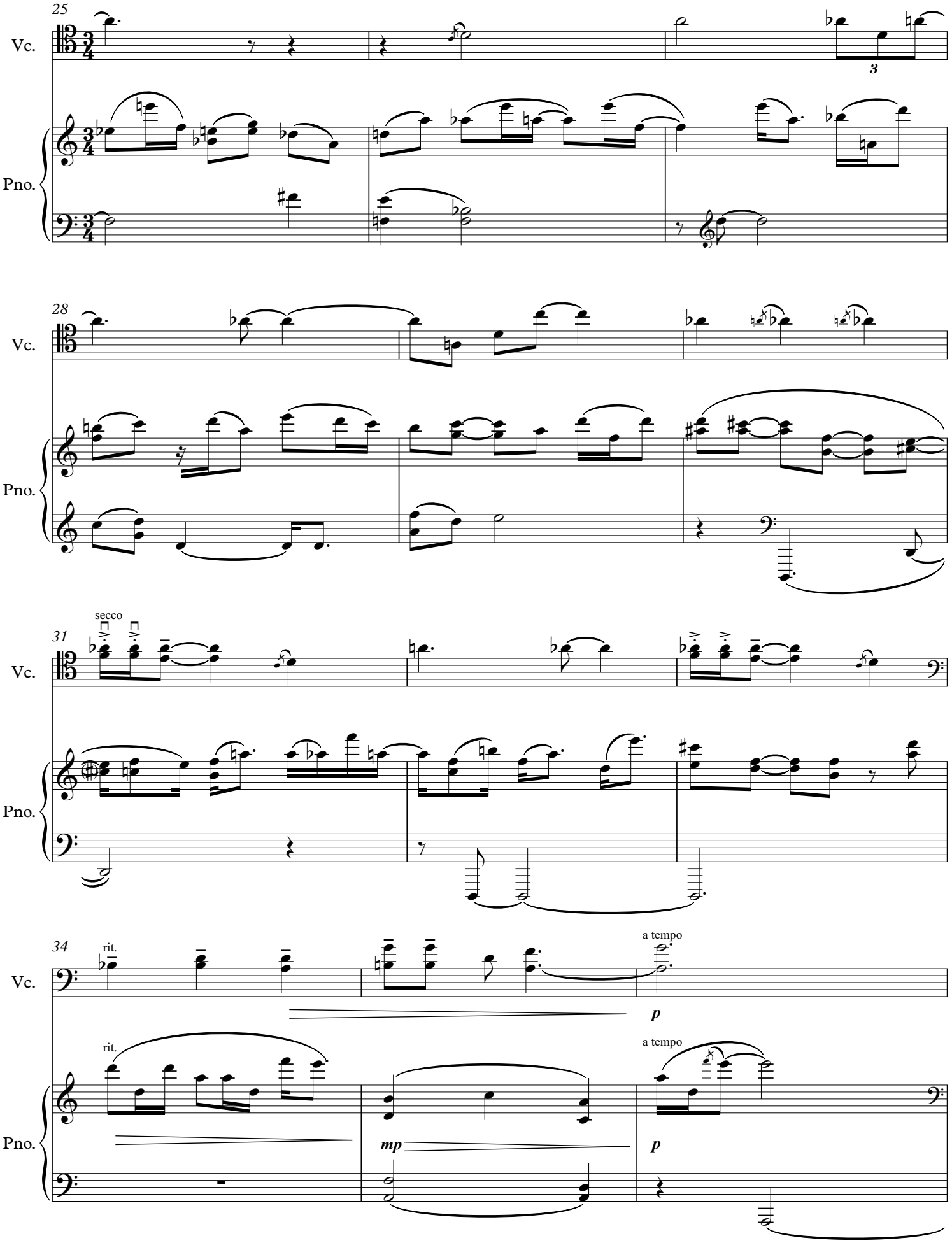
The Human Brain on Music and Sound

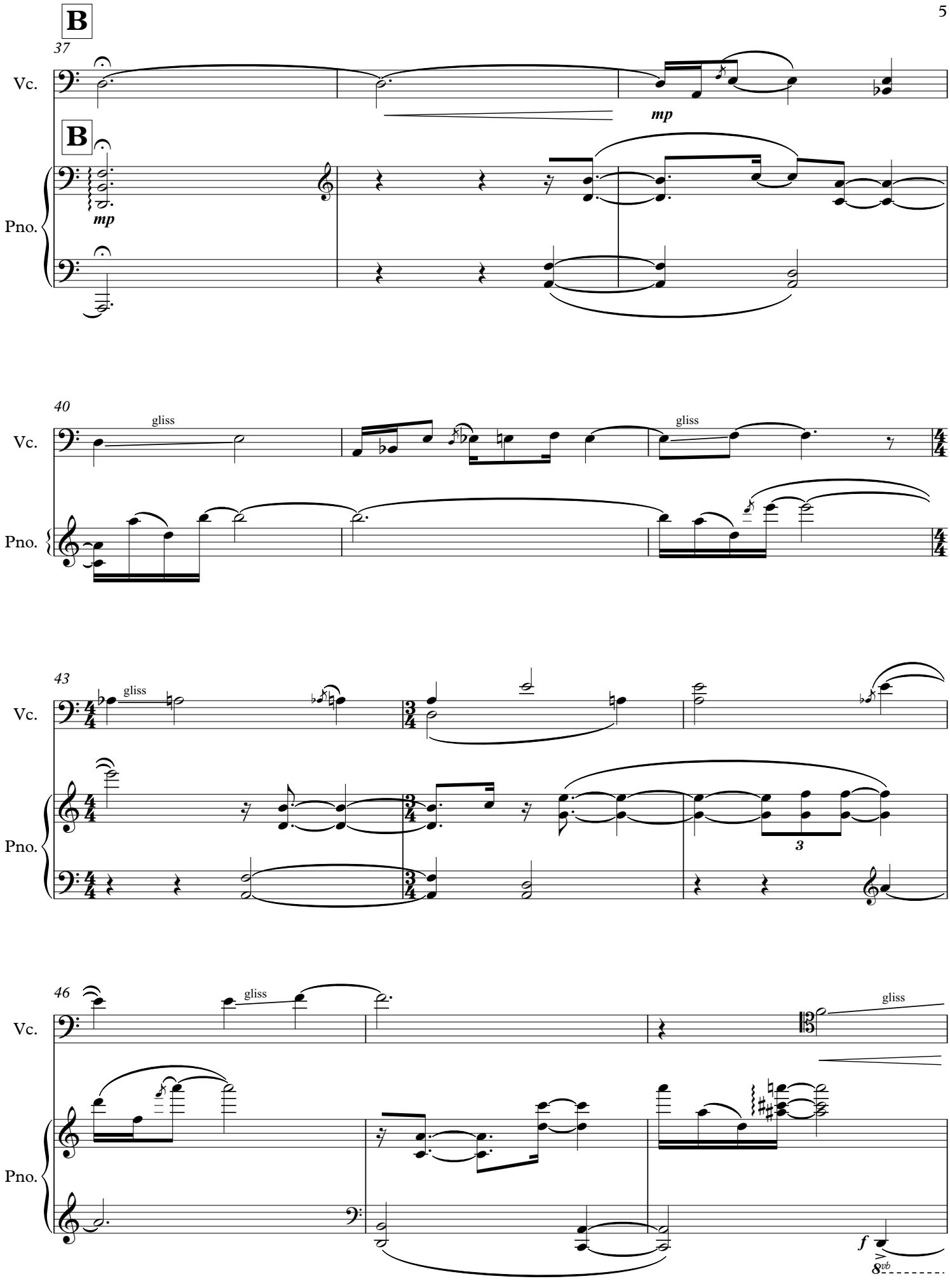
Movement I:

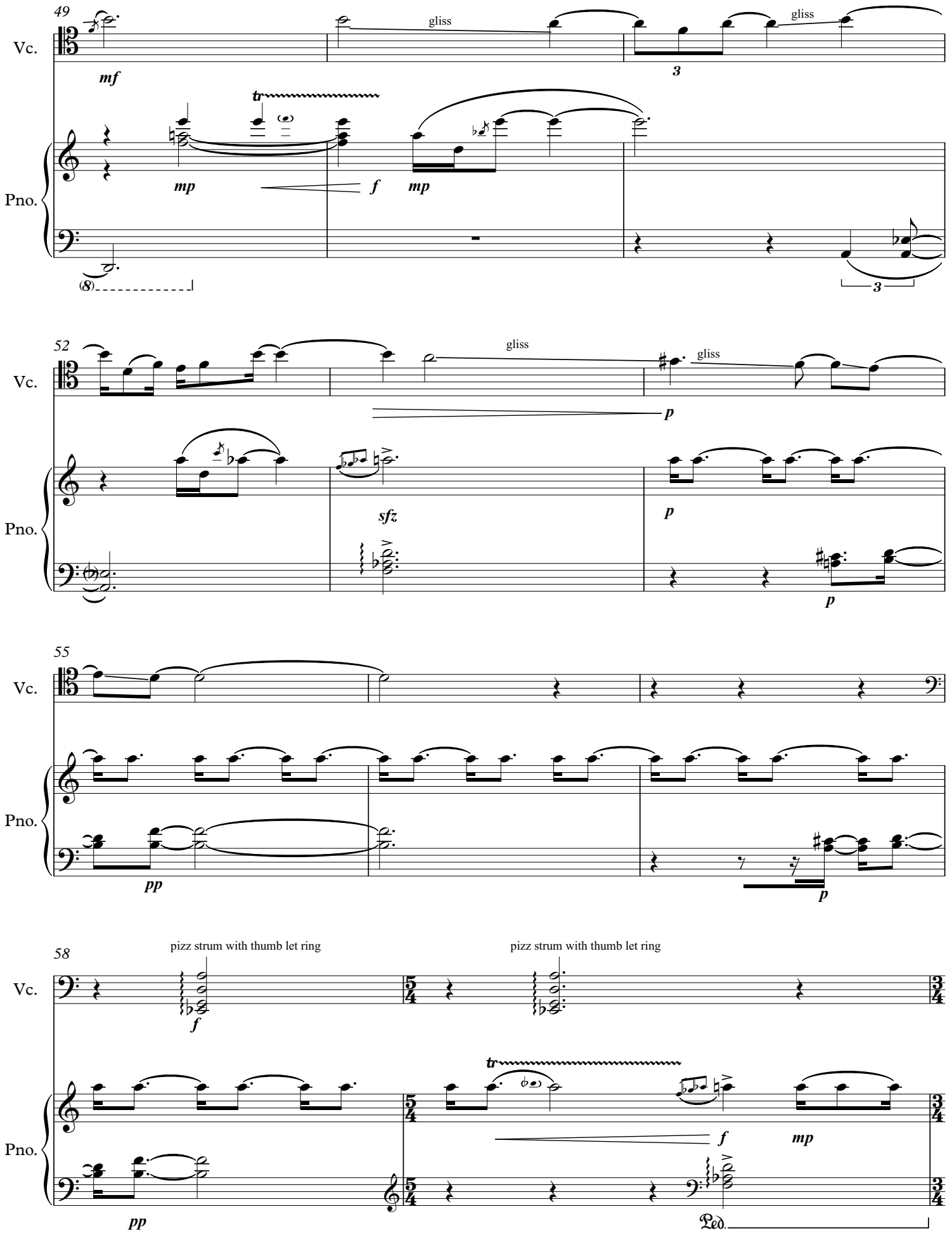
Aryan B

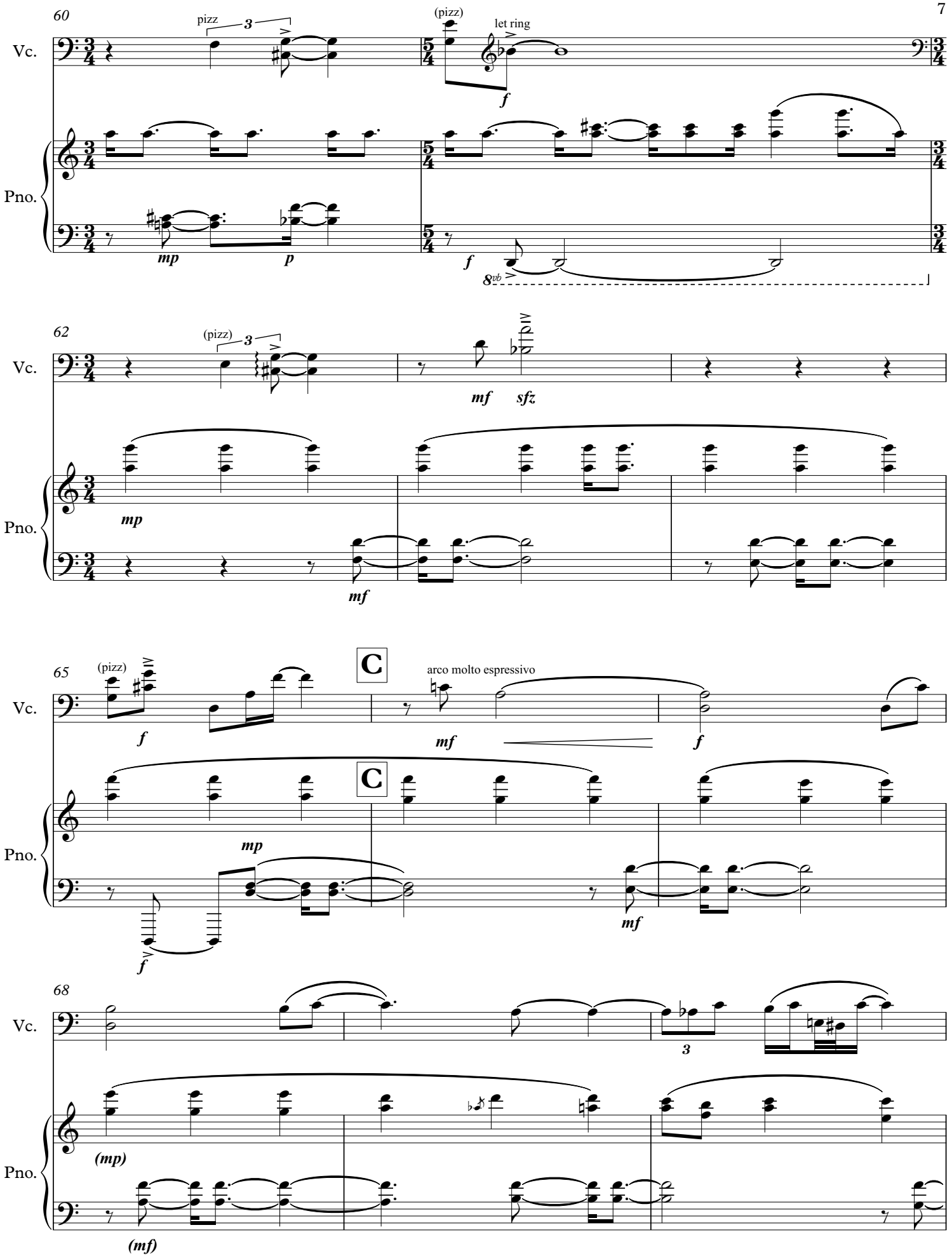


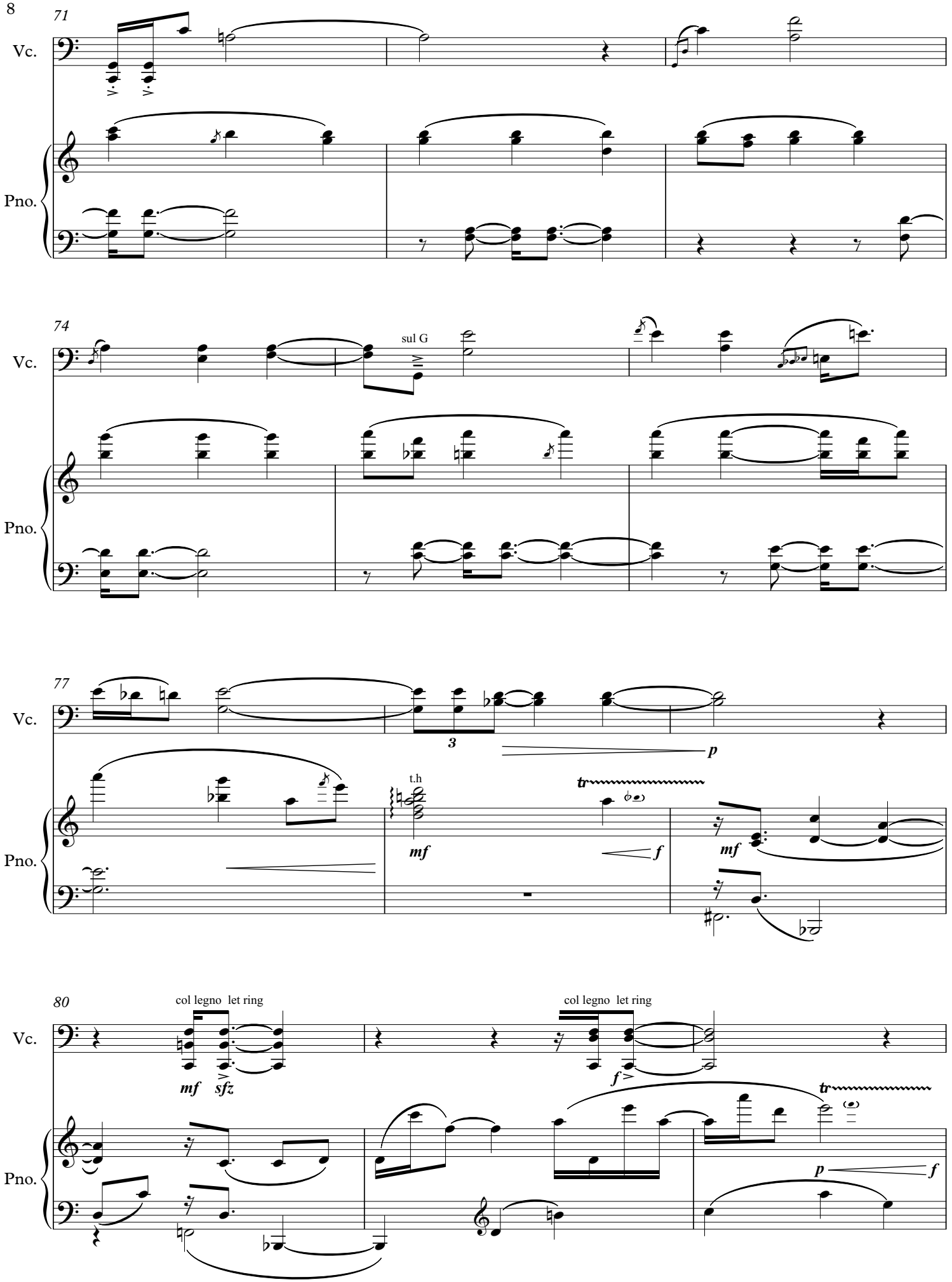

13
Vc.
Pno.
3
16
gliss
gliss
19
mp
mf
22
f
mp
f
f

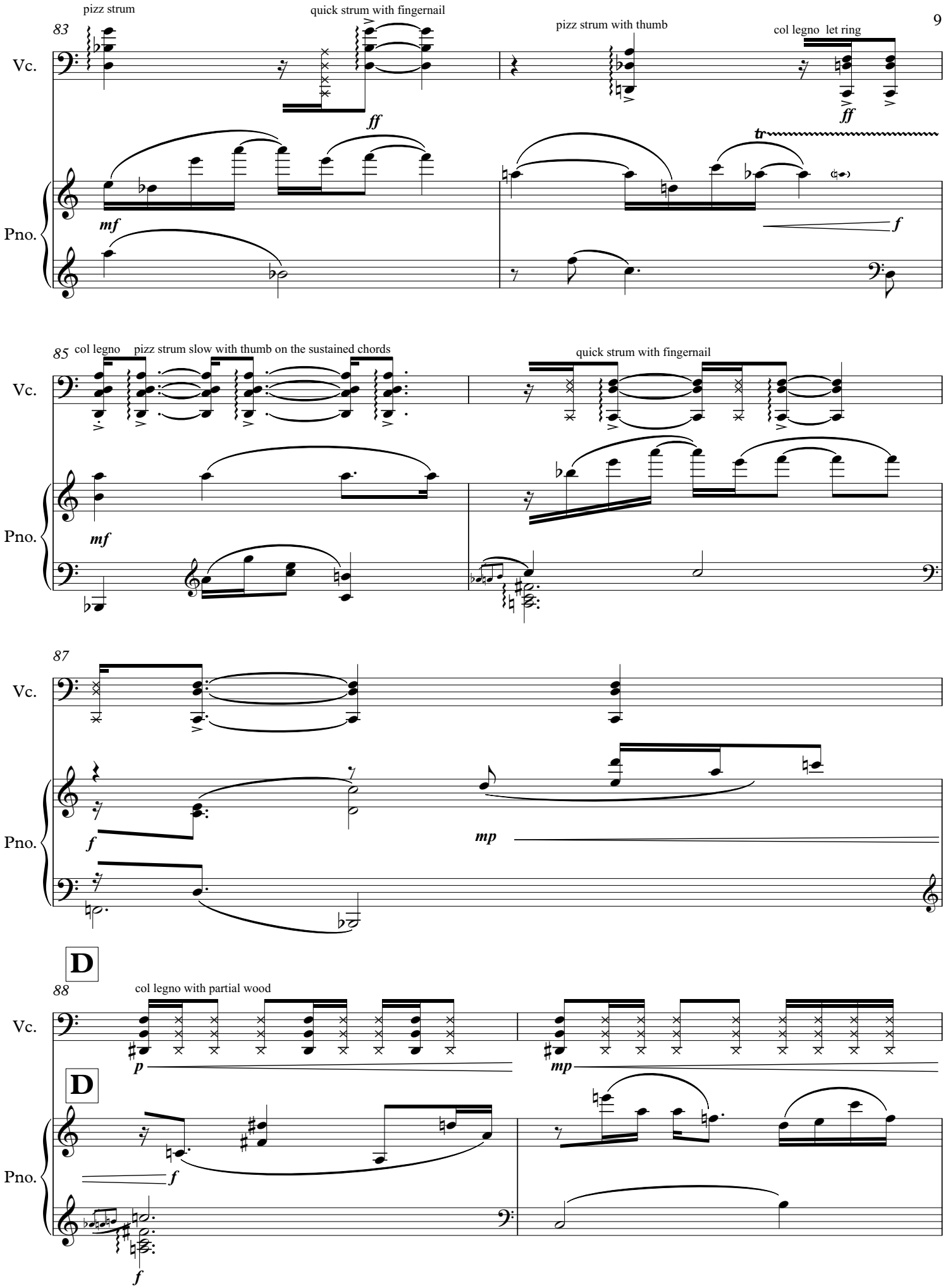

25
Vc.
3
Pno.
28
Vc.
Pno.
secco
31
Vc.
Pno.
34
rit.
a tempo
Vc.
p
rit.
a tempo
Pno.
mp
p

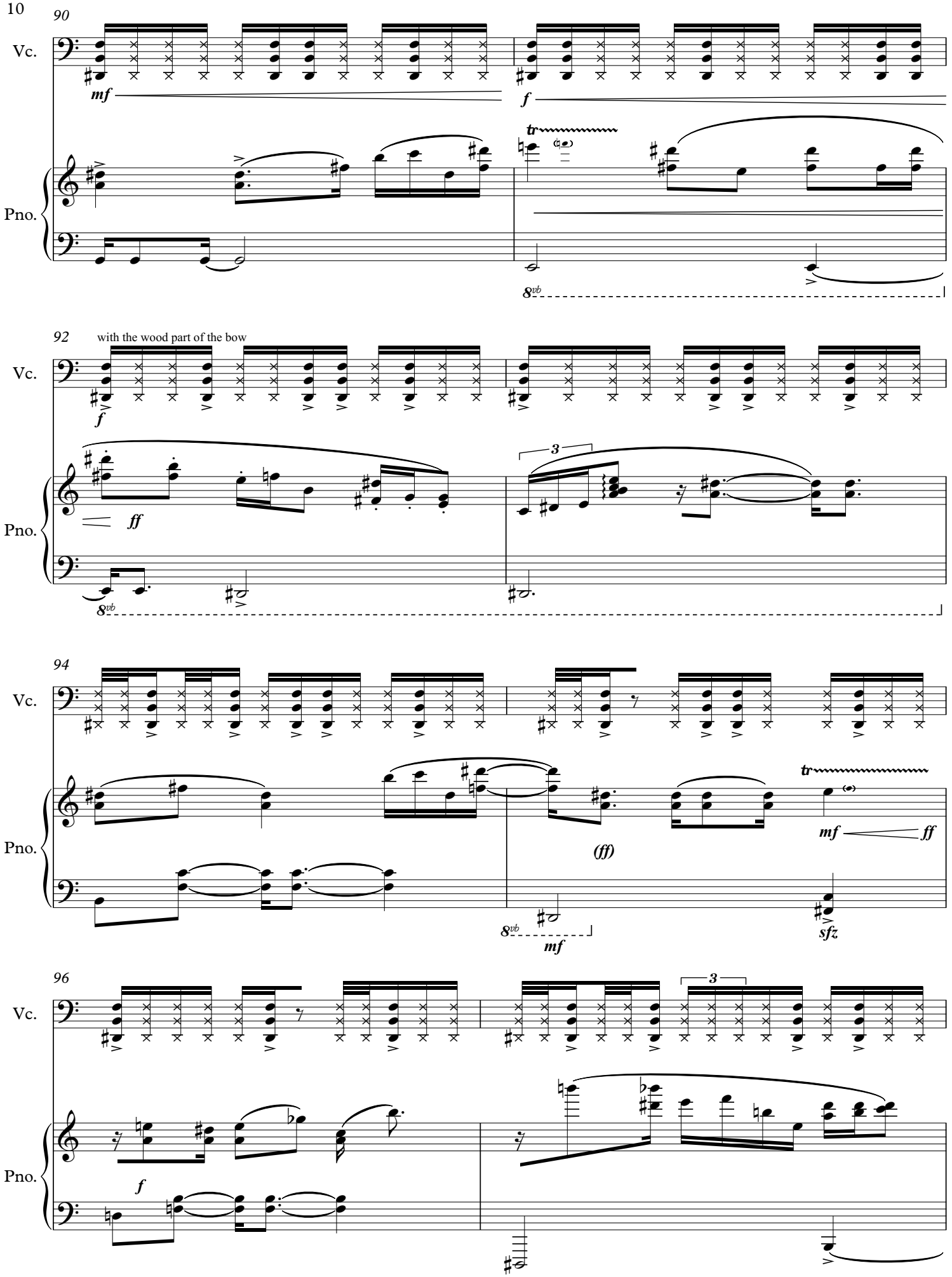

B
37
Vc.
mp
B
Pno.
mp
40
gliss
gliss
Vc.
Pno.
43
gliss
Vc.
3
Pno.
46
gliss
gliss
Vc.
Pno.
f
8vb

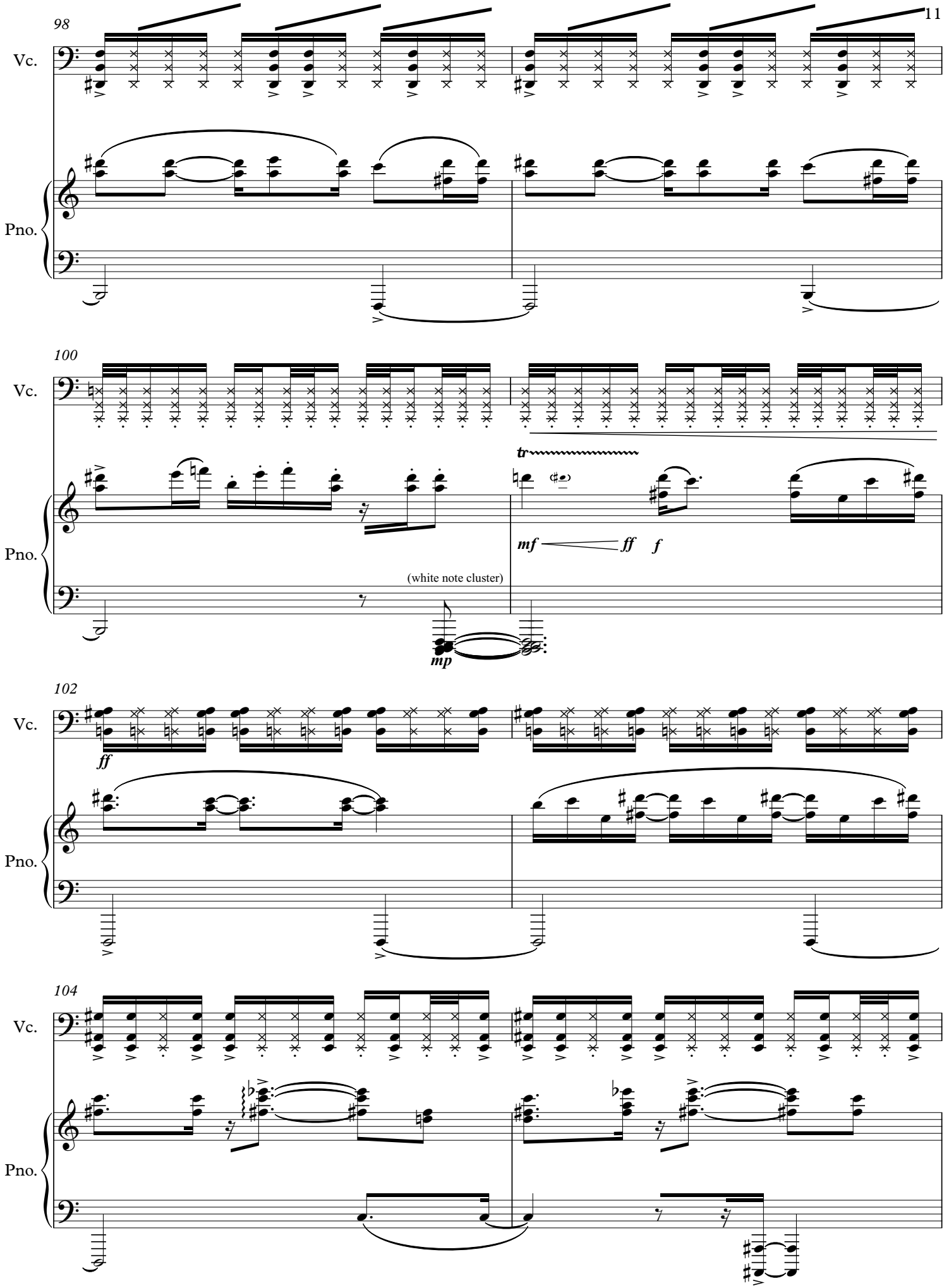

49
Vc.
mf
gliss
3
gliss
tr
Pno.
mp
f
mp
(8)
3
52
Vc.
gliss
gliss
p
Pno.
sfz
p
p
55
Vc.
Pno.
pp
p
58
pizz strum with thumb let ring
pizz strum with thumb let ring
Vc.
f
5/4
3/4
tr
Pno.
f
mp
pp
Ped.

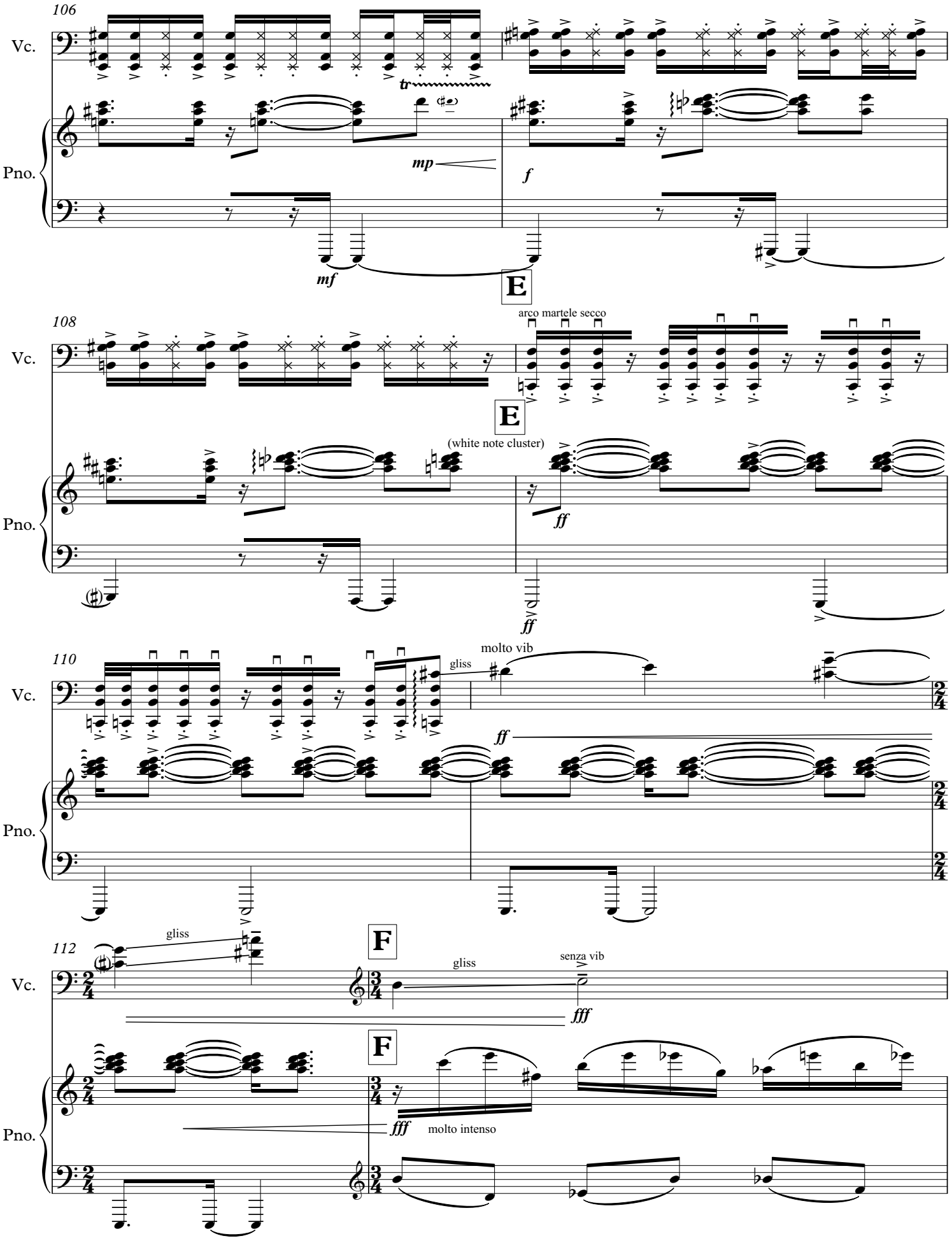

60
pizz
3
(pizz)
let ring
Vc.
Pno.
mp
p
f
8vb
62
(pizz)
3
mf
sfz
mp
mf
65
(pizz)
C
arco molto espressivo
f
mf
f
C
mp
f
mf
68
3
(mp)
(mf)

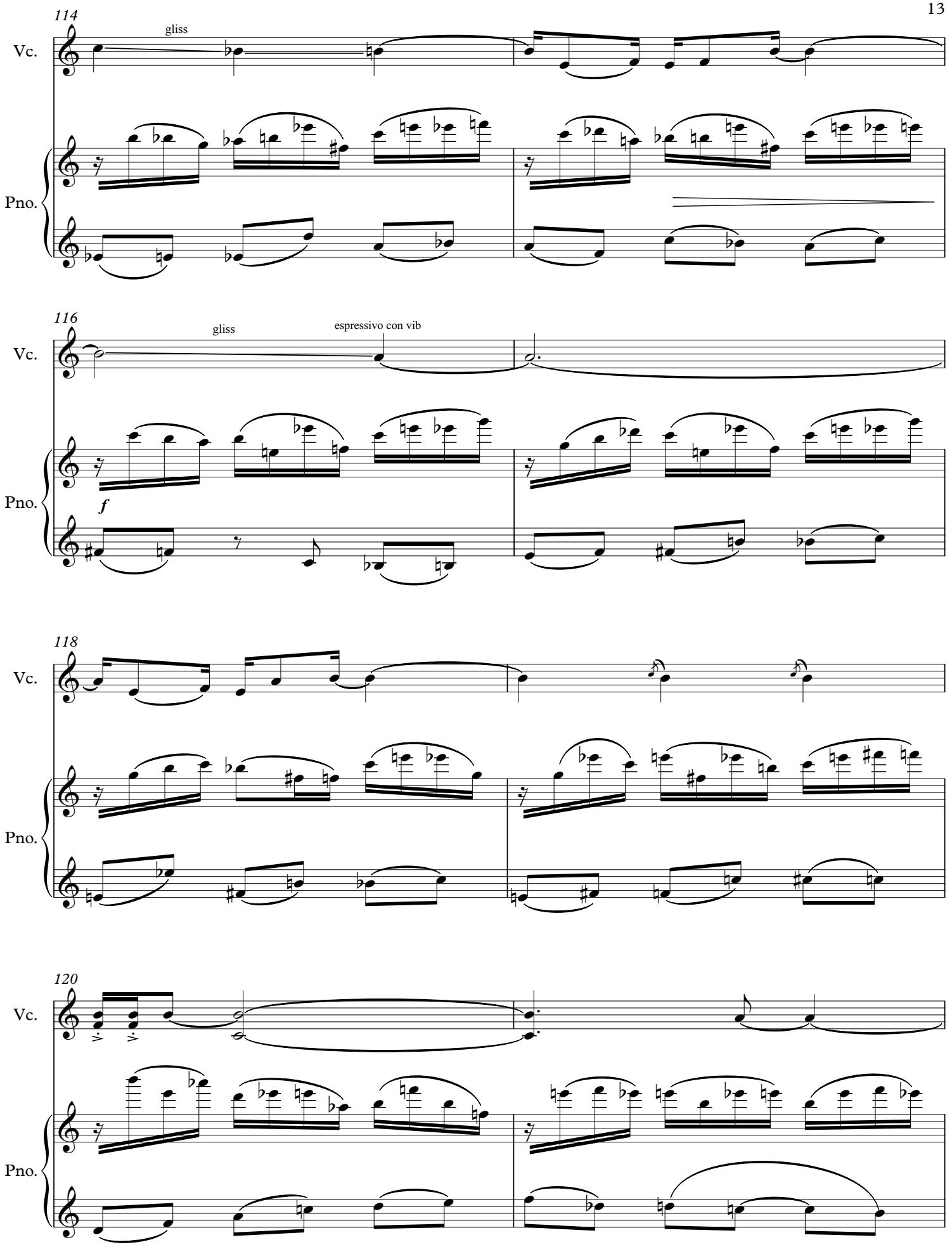

71
Vc.
Pno.
74
sul G
77
3
p
t.h
mf
f
mf
80
col legno let ring
mf sfz
col legno let ring
f
tr
p f

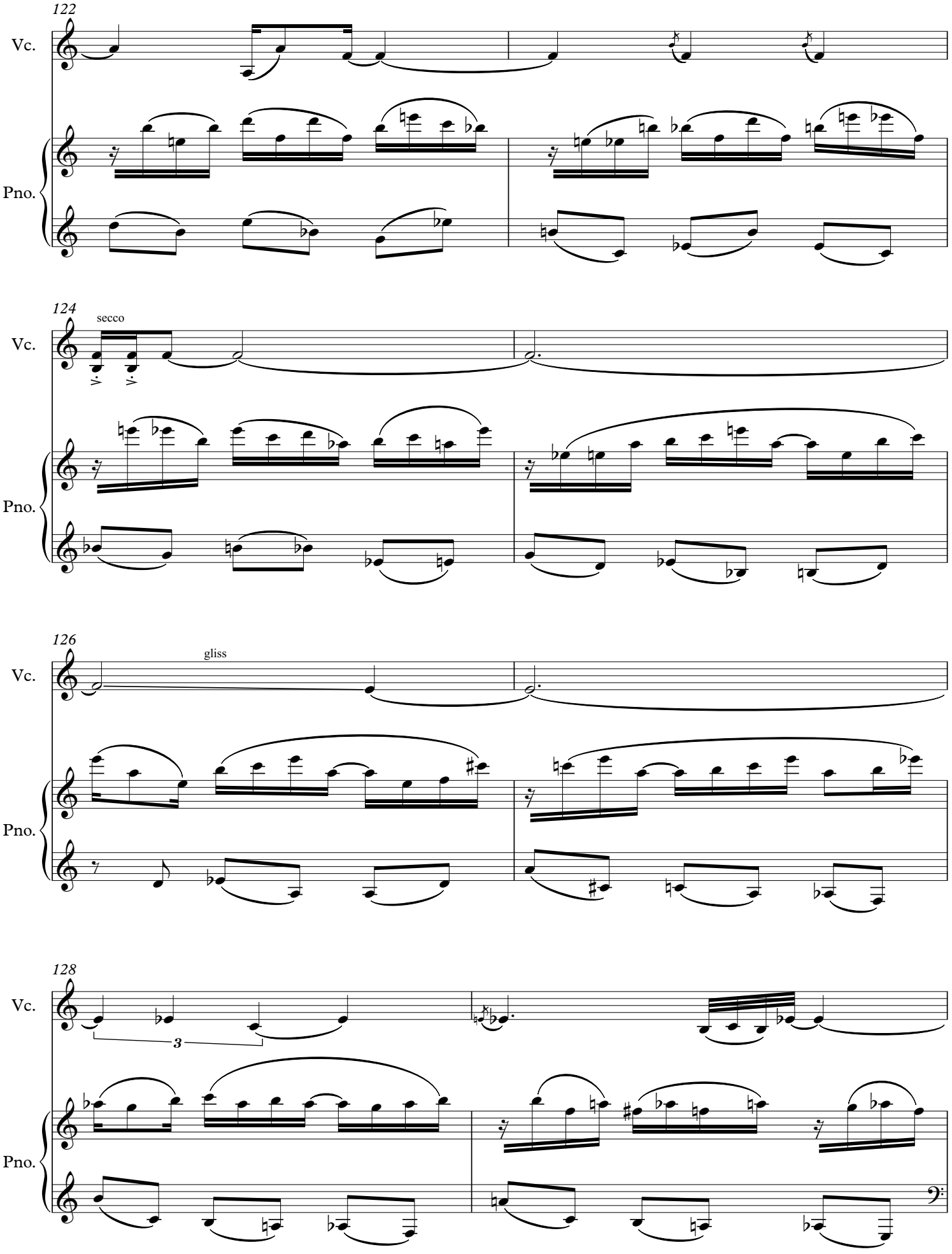

83
pizz strum
quick strum with fingernail
pizz strum with thumb
col legno let ring
Vc.
Pno.
ff
mf
tr
f
85
col legno
pizz strum slow with thumb on the sustained chords
quick strum with fingernail
Vc.
Pno.
mf
87
Vc.
Pno.
f
mp
D
88
col legno with partial wood
Vc.
p
mp
D
Pno.
f
f

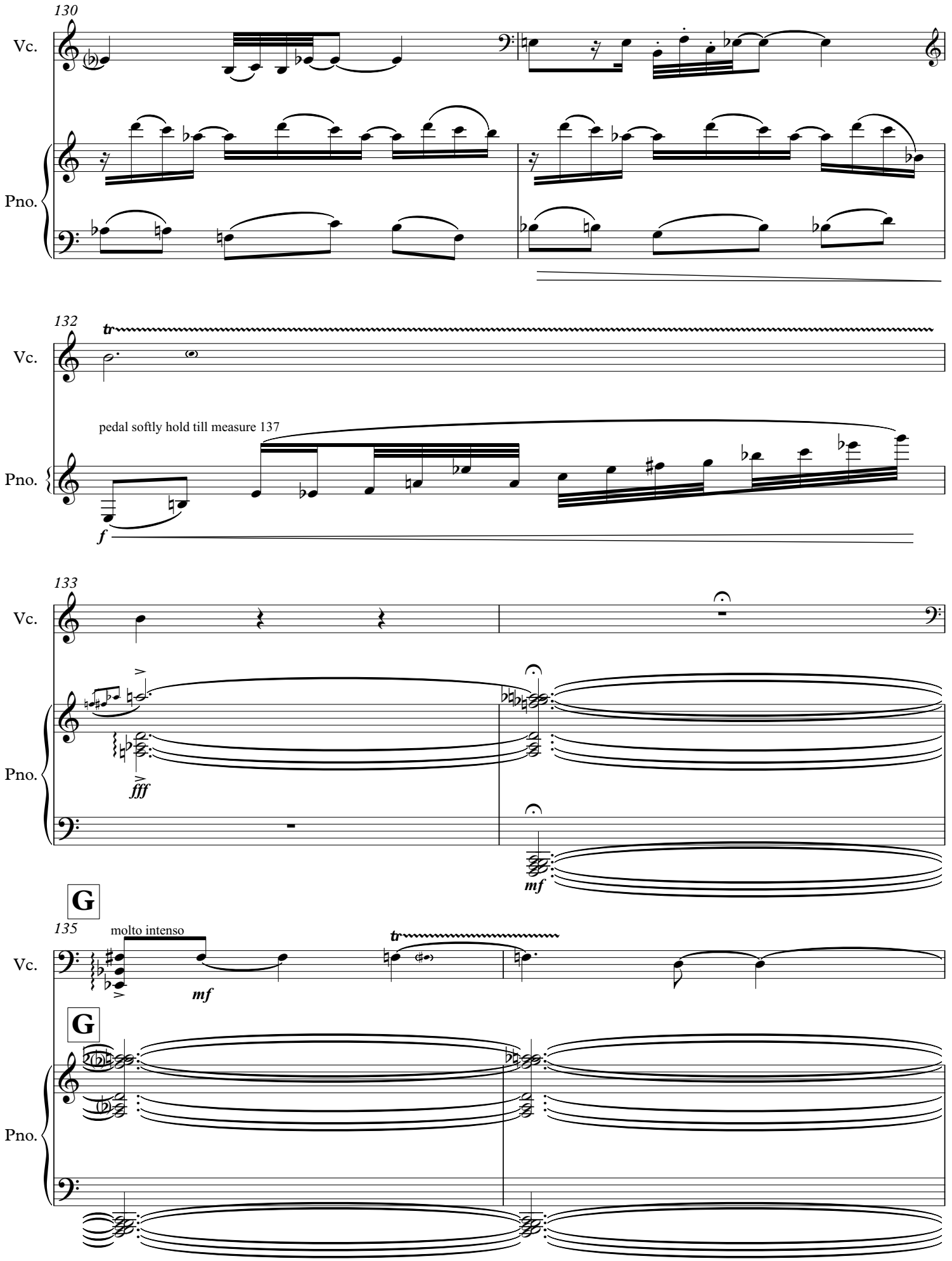

90
Vc.
mf
f
tr
Pno.
8vb
92
with the wood part of the bow
Vc.
f
ff
3
Pno.
8vb
94
Vc.
tr
mf
ff
(ff)
Pno.
8vb
mf
sfz
96
Vc.
3
f
Pno.

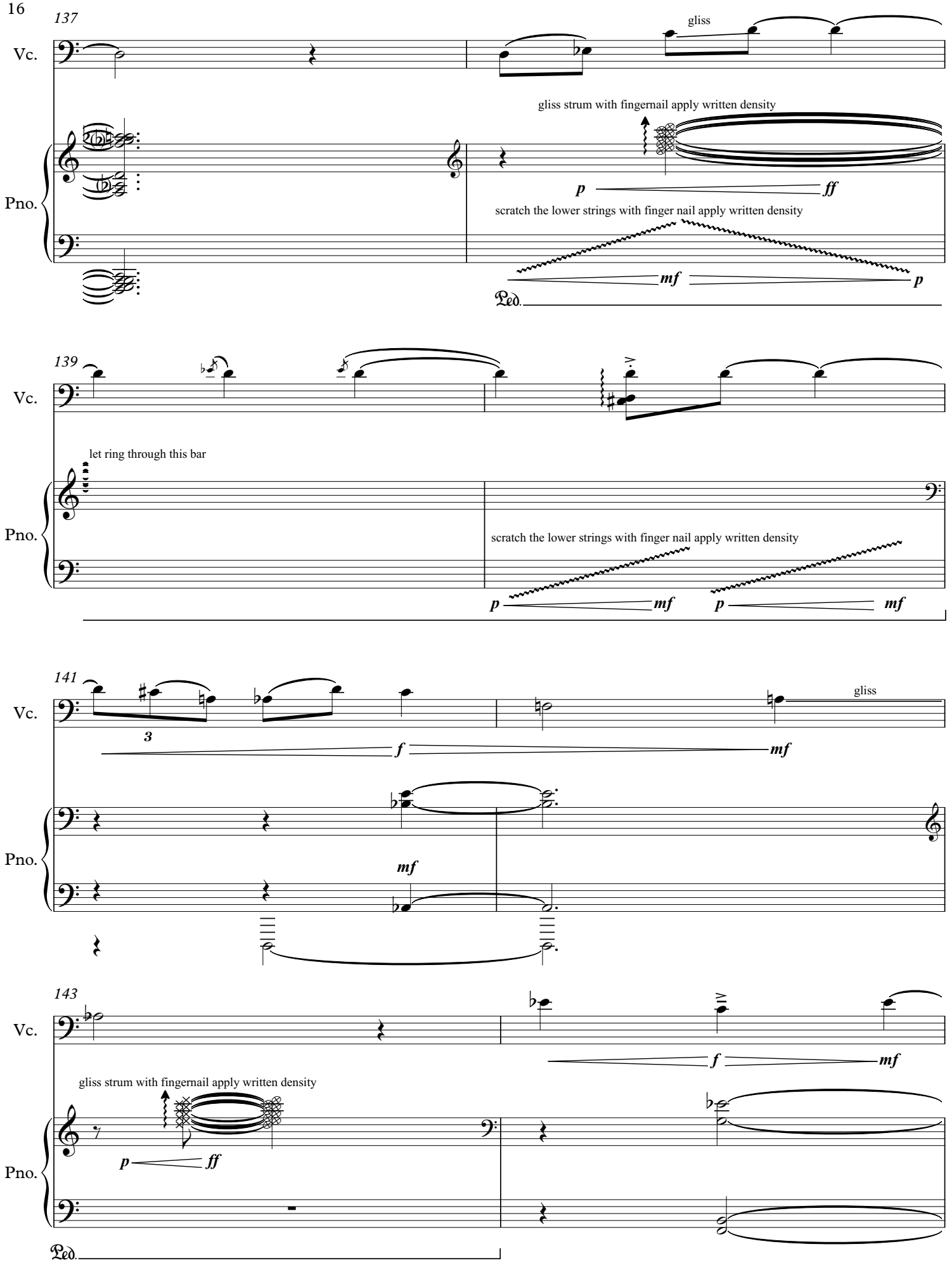

98
Vc.
Pno.
100
Vc.
tr
mf
ff
f
Pno.
(white note cluster)
mp
102
Vc.
ff
Pno.
104
Vc.
Pno.

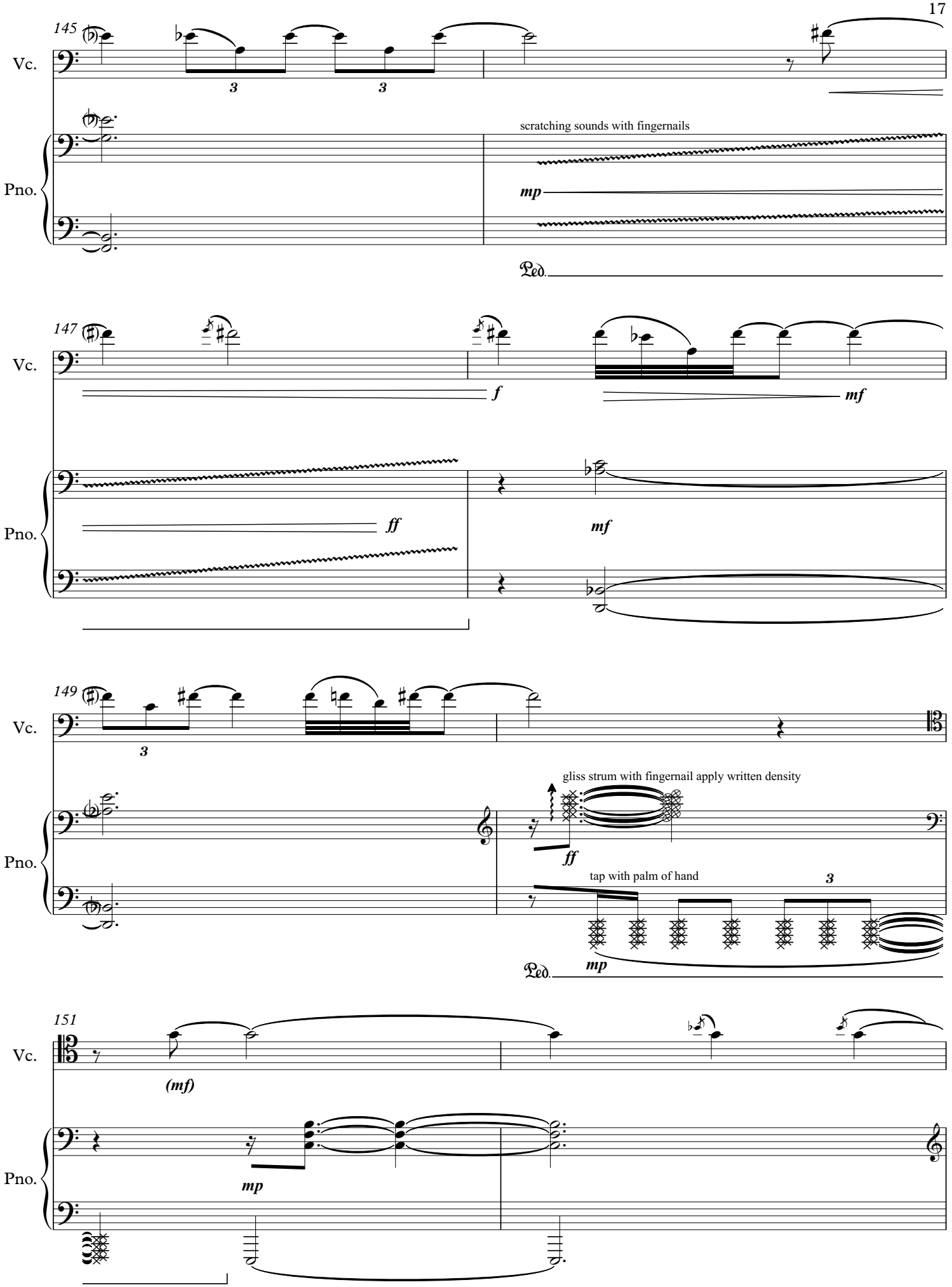

106
Vc.
Pno.
tr
mp
f
mf
E
108
arco martele secco
(white note cluster)
ff
110
gliss
molto vib
112
F
senza vib
fff
molto intenso

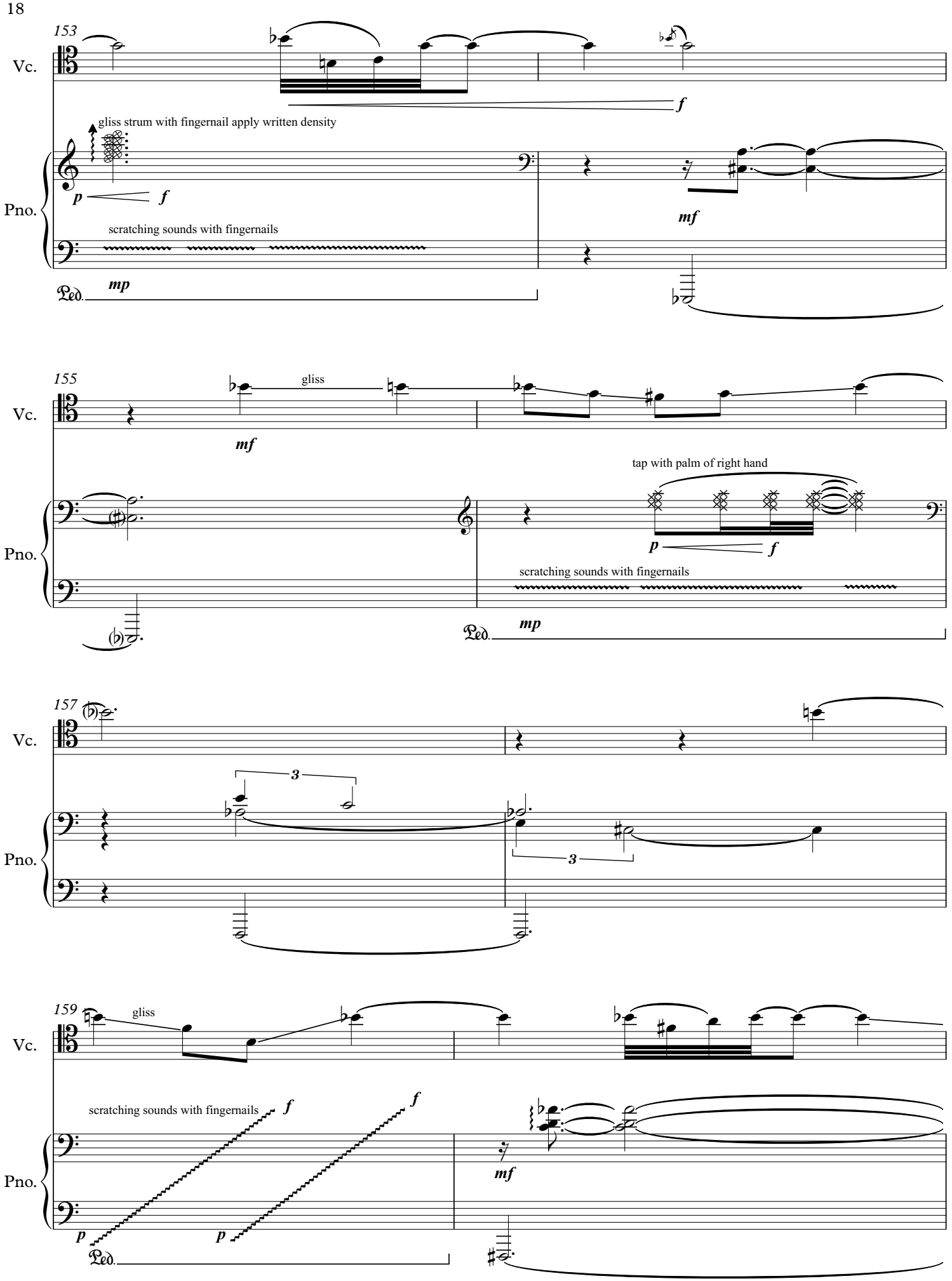

114
gliss
Vc.
Pno.
116
gliss
espressivo con vib
Vc.
f
Pno.
118
Vc.
Pno.
120
Vc.
Pno.

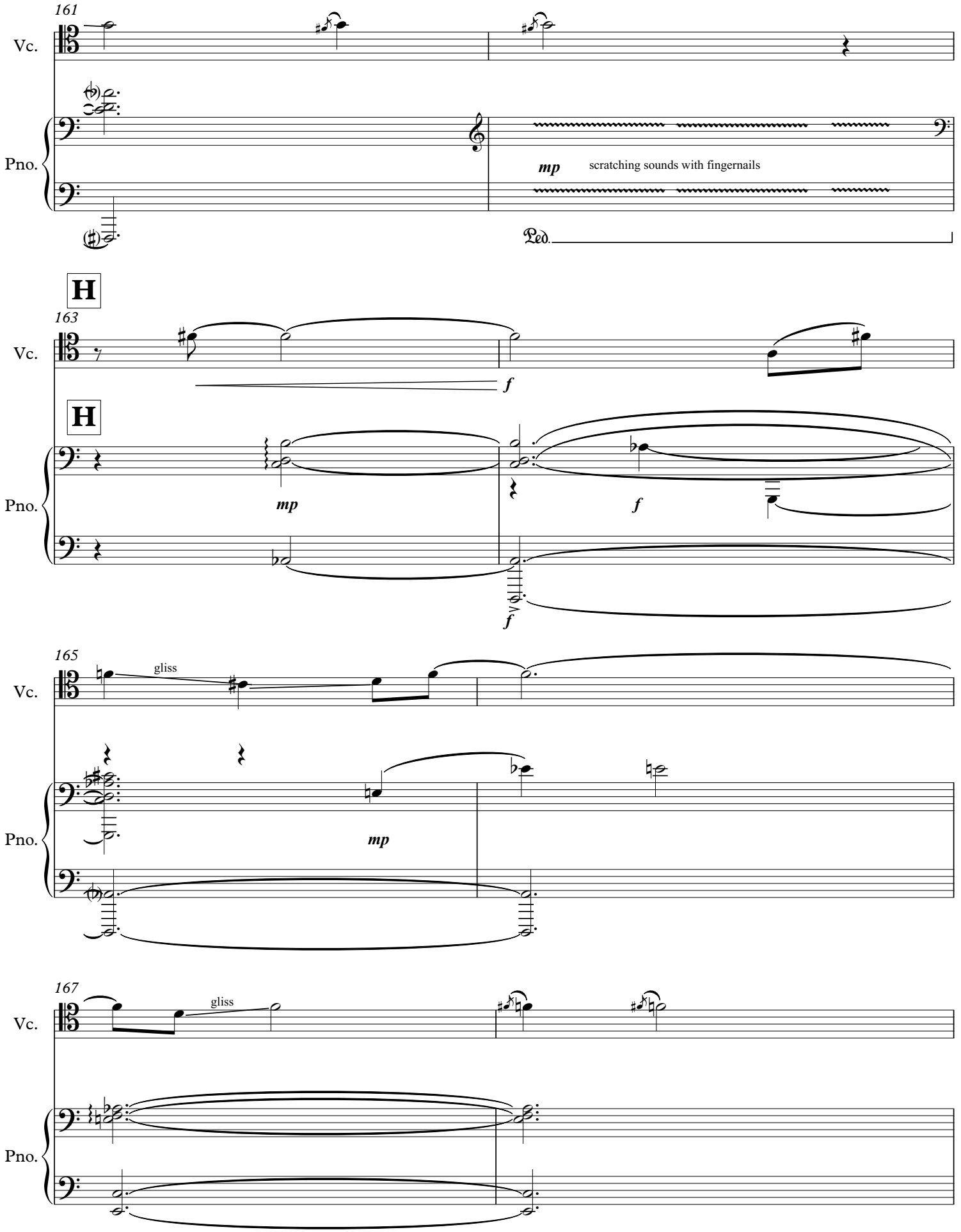

122
Vc.
Pno.
124
secco
Vc.
Pno.
126
gliss
Vc.
Pno.
128
3
Vc.
Pno.

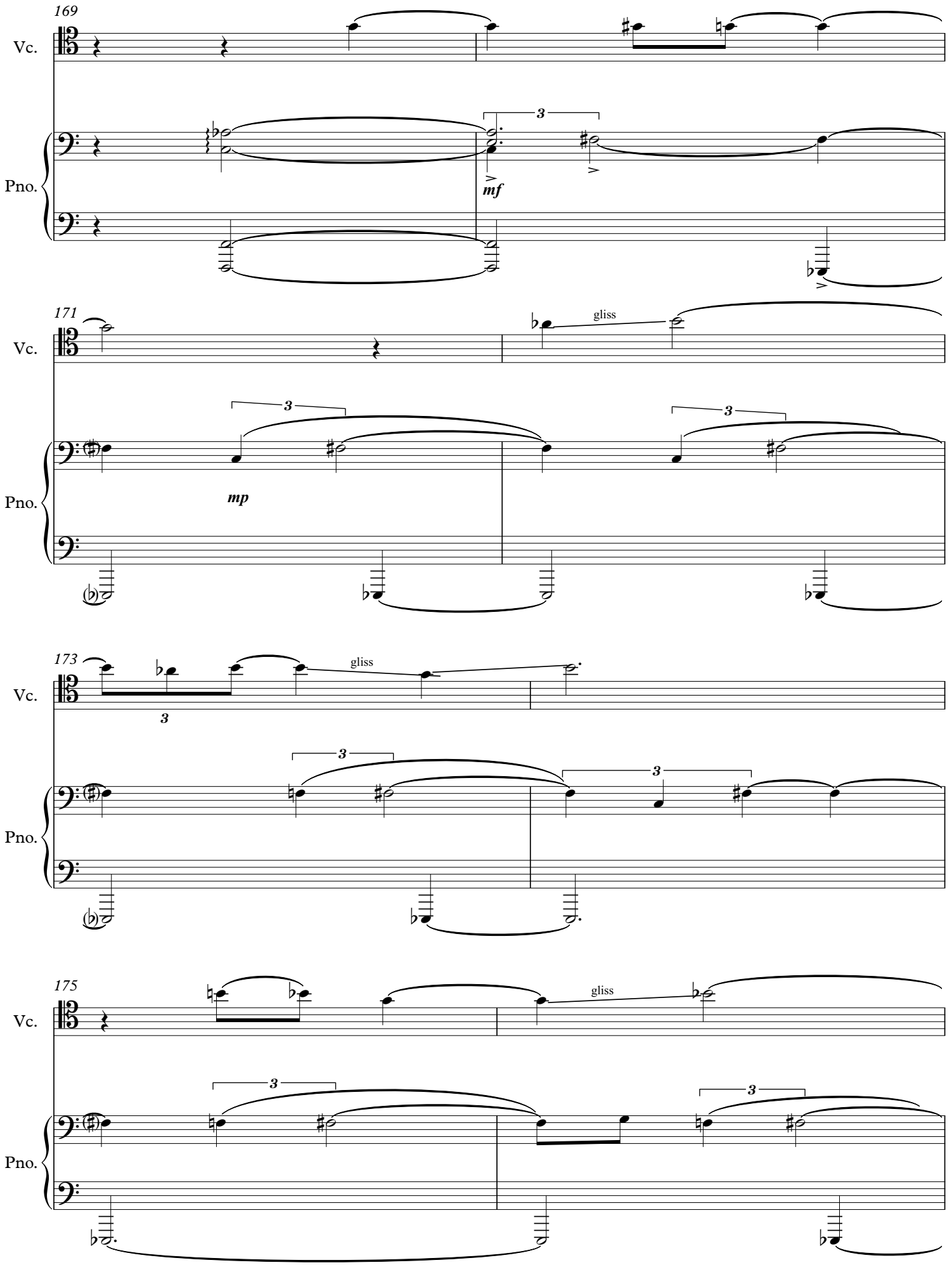

130
Vc.
Pno.
132
tr
Vc.
pedal softly hold till measure 137
Pno.
f
133
Vc.
fff
Pno.
mf
G
135
molto intenso
Vc.
mf
tr
G
Pno.

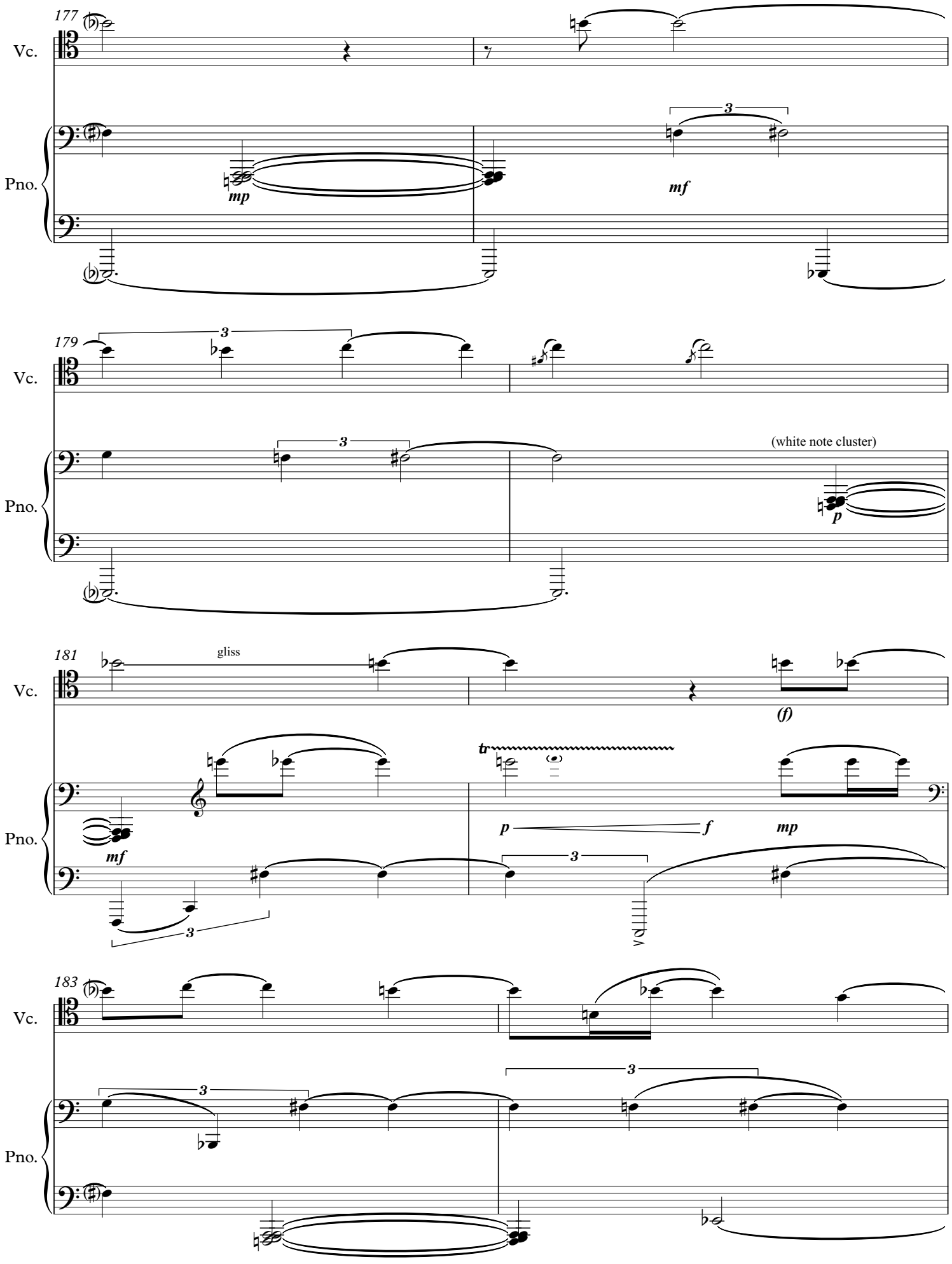

137
Vc.
gliss
gliss strum with fingernail apply written density
p
ff
Pno.
scratch the lower strings with finger nail apply written density
mf
p
Ped.
139
Vc.
let ring through this bar
Pno.
scratch the lower strings with finger nail apply written density
p
mf
p
mf
141
Vc.
3
f
mf
gliss
Pno.
mf
143
Vc.
f
mf
gliss strum with fingernail apply written density
Pno.
p
ff
Ped.

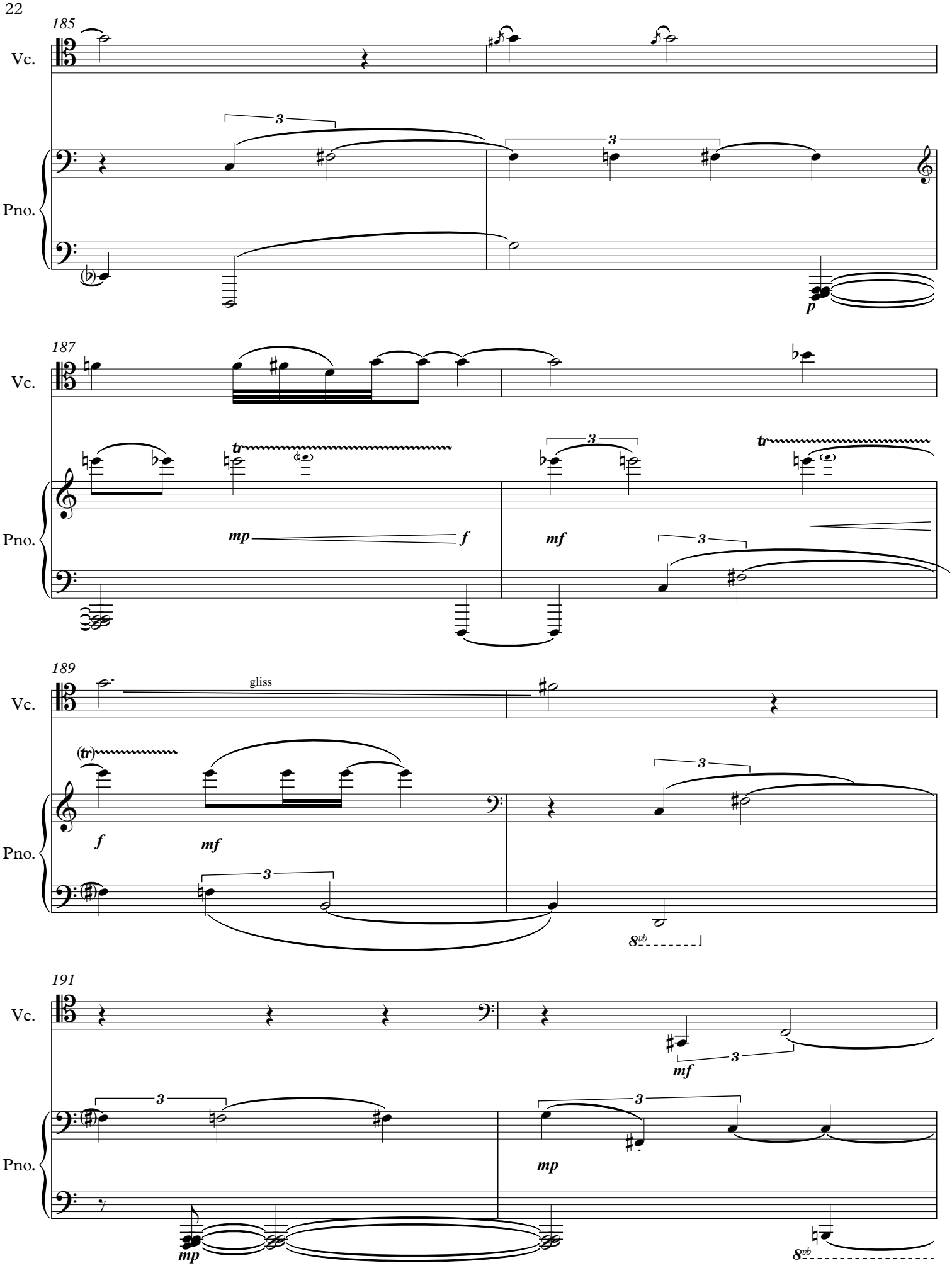

145
Vc.
Pno.
scratching sounds with fingernails
mp
Ped.
147
Vc.
Pno.
f
mf
ff
mf
149
Vc.
Pno.
gliss strum with fingernail apply written density
ff
tap with palm of hand
3
mp
Ped.
151
Vc.
Pno.
(mf)
mp

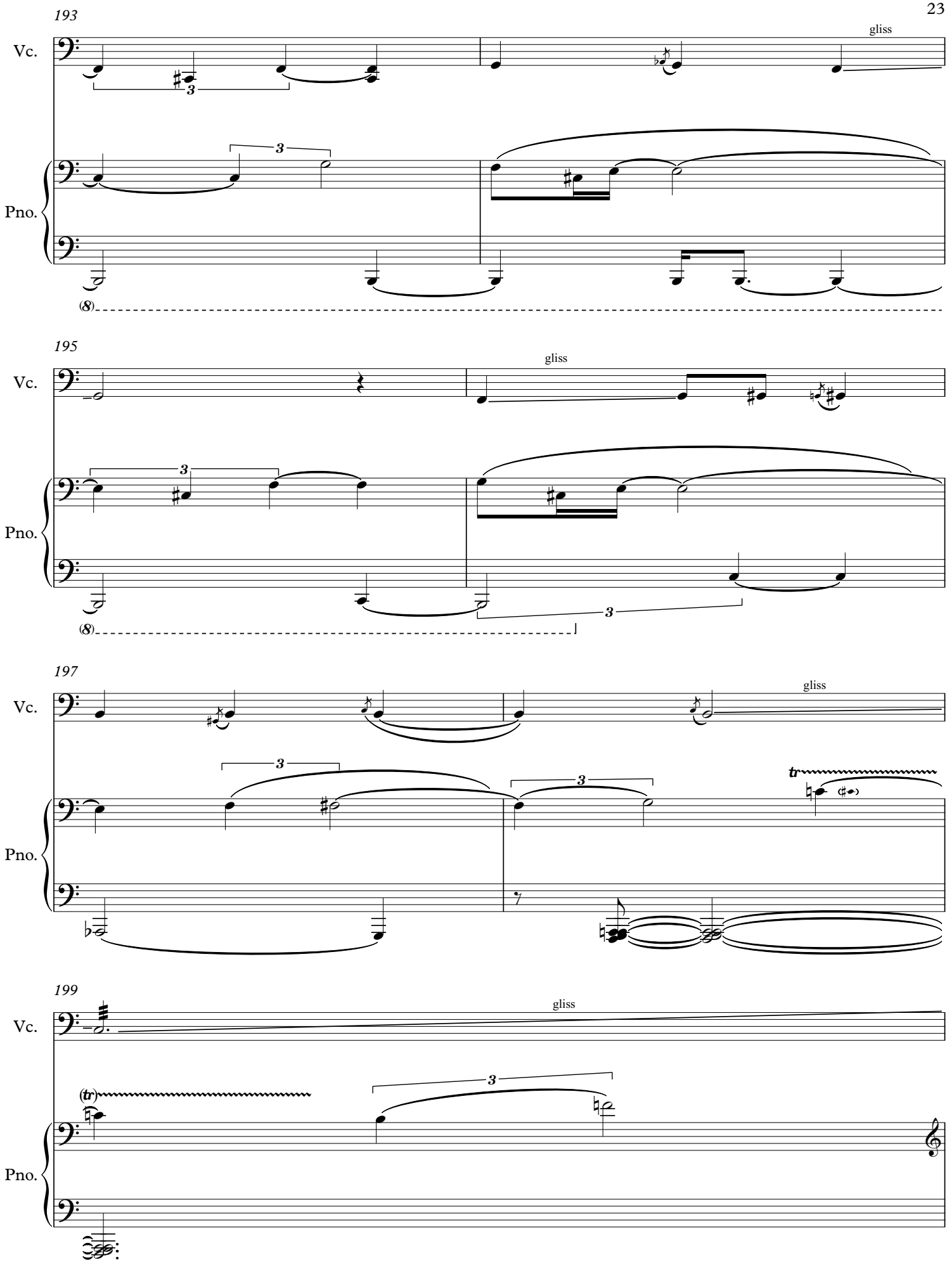

153
Vc.
f
gliss strum with fingernail apply written density
Pno.
p
f
mf
scratching sounds with fingernails
mp
Ped.
155
gliss
mf
tap with palm of right hand
p
f
scratching sounds with fingernails
mp
157
3
3
159
gliss
scratching sounds with fingernails
f
f
p
p
mf

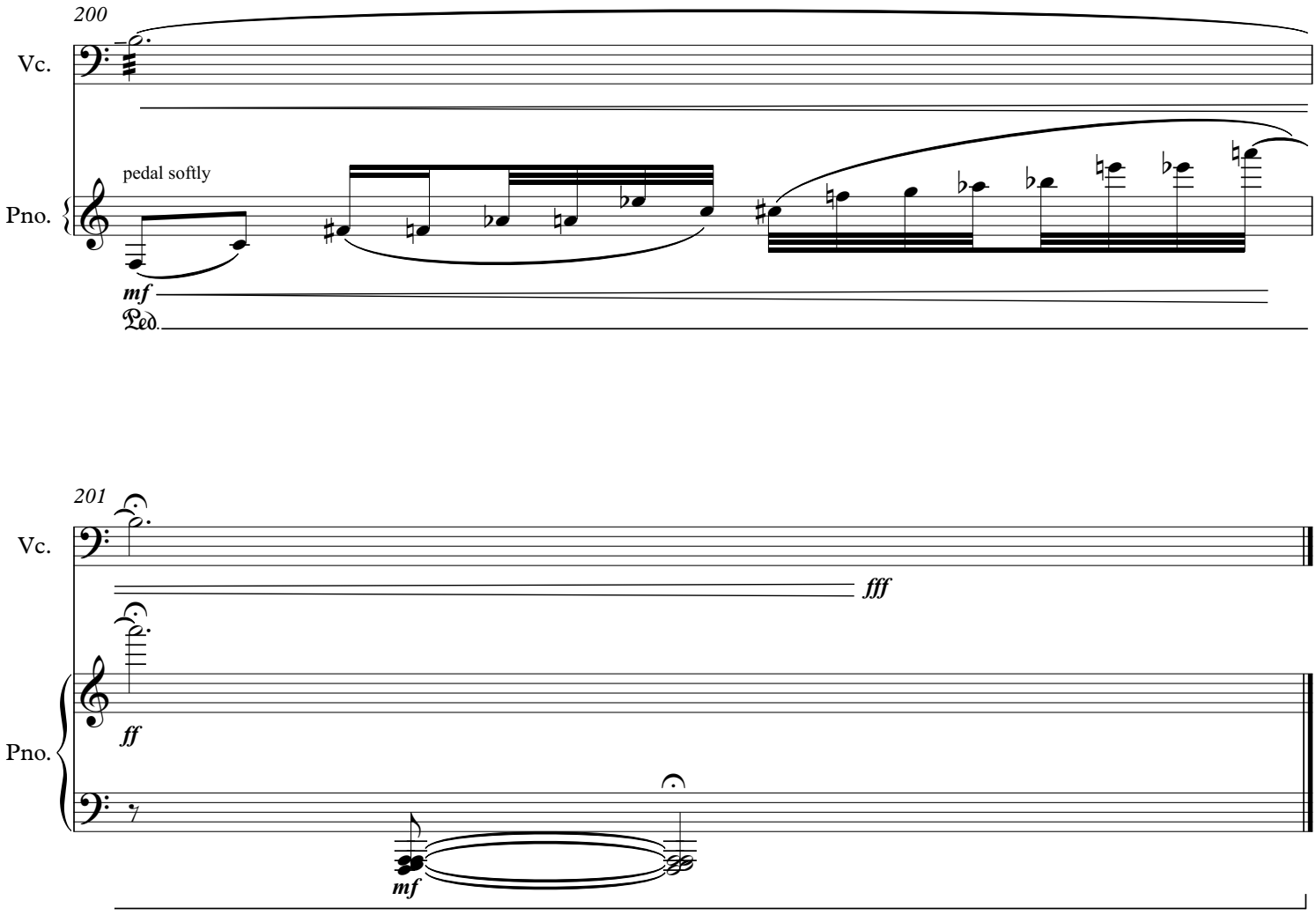

161
Vc.
Pno.
mp
scratching sounds with fingernails
Ped.
H
163
Vc.
f
H
Pno.
mp
f
f
165
gliss
Vc.
Pno.
mp
167
gliss
Vc.
Pno.


169
Vc.
Pno.
3
mf
171
Vc.
gliss
Pno.
3
3
mp
173
Vc.
gliss
3
Pno.
3
3
175
Vc.
gliss
Pno.
3
3


177
Vc.
Pno.
mp
mf
3
179
(white note cluster)
p
181
gliss
(f)
tr
mf
p
f
mp
183


185
Vc.
Pno.
3
3
p
187
Vc.
Pno.
tr
mp
f
mf
3
tr
189
Vc.
Pno.
gliss
(tr)
f
mf
3
3
8vb
191
Vc.
Pno.
3
mf
3
3
mp
mp
8vb


193
Vc.
gliss
Pno.
(8)
195
Vc.
gliss
Pno.
(8)
197
Vc.
gliss
Pno.
199
Vc.
gliss
Pno.


200
Vc.
Pno.
pedal softly
mf
Ped.
201
Vc.
fff
Pno.
ff
mf

Black Onyx

The Human Brain on Music and Sound

Movement II

Instrumentation:

Flute
ViolonCello
Grand Piano

Approximate duration 12 min 30 sec

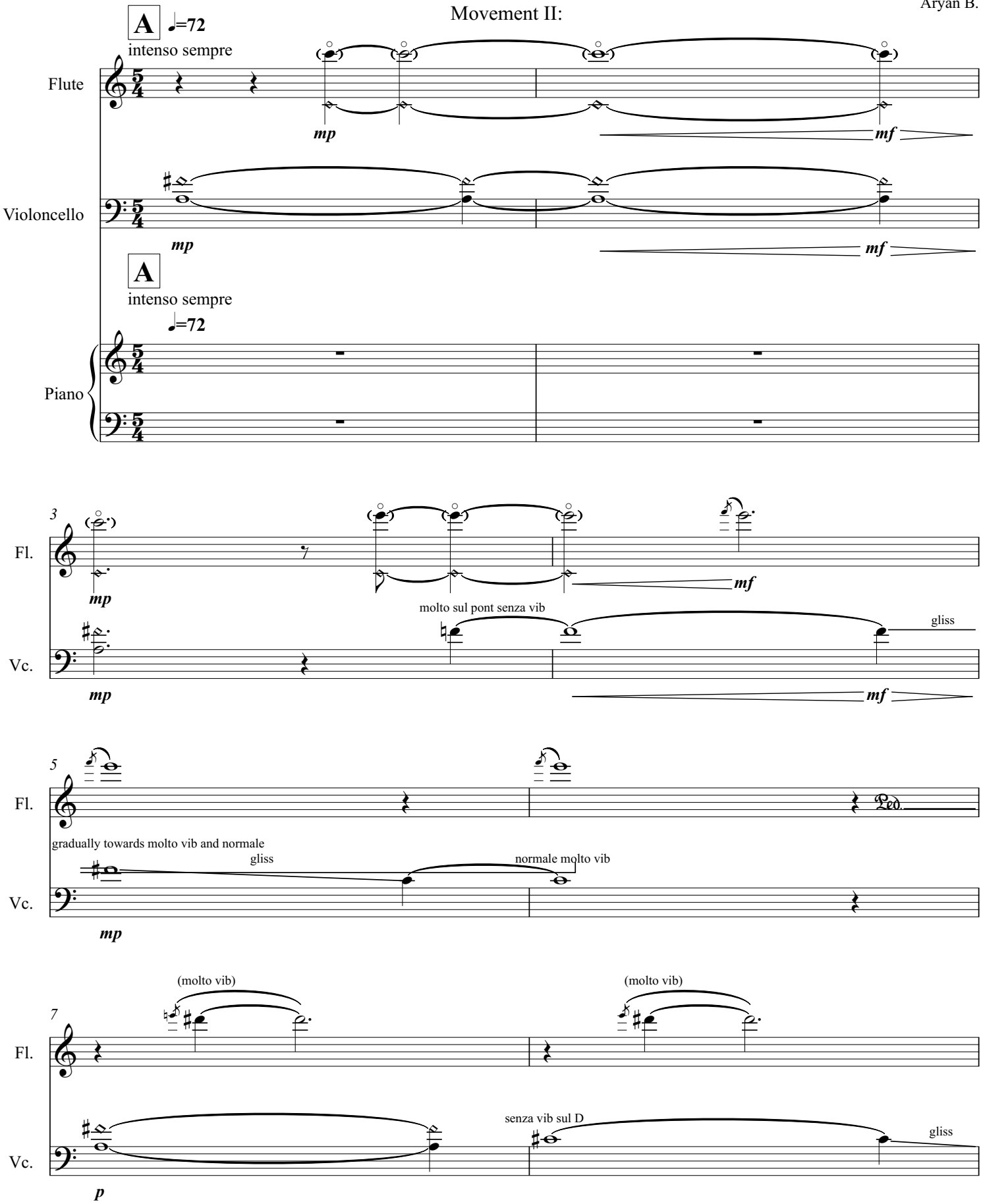
Black Onyx

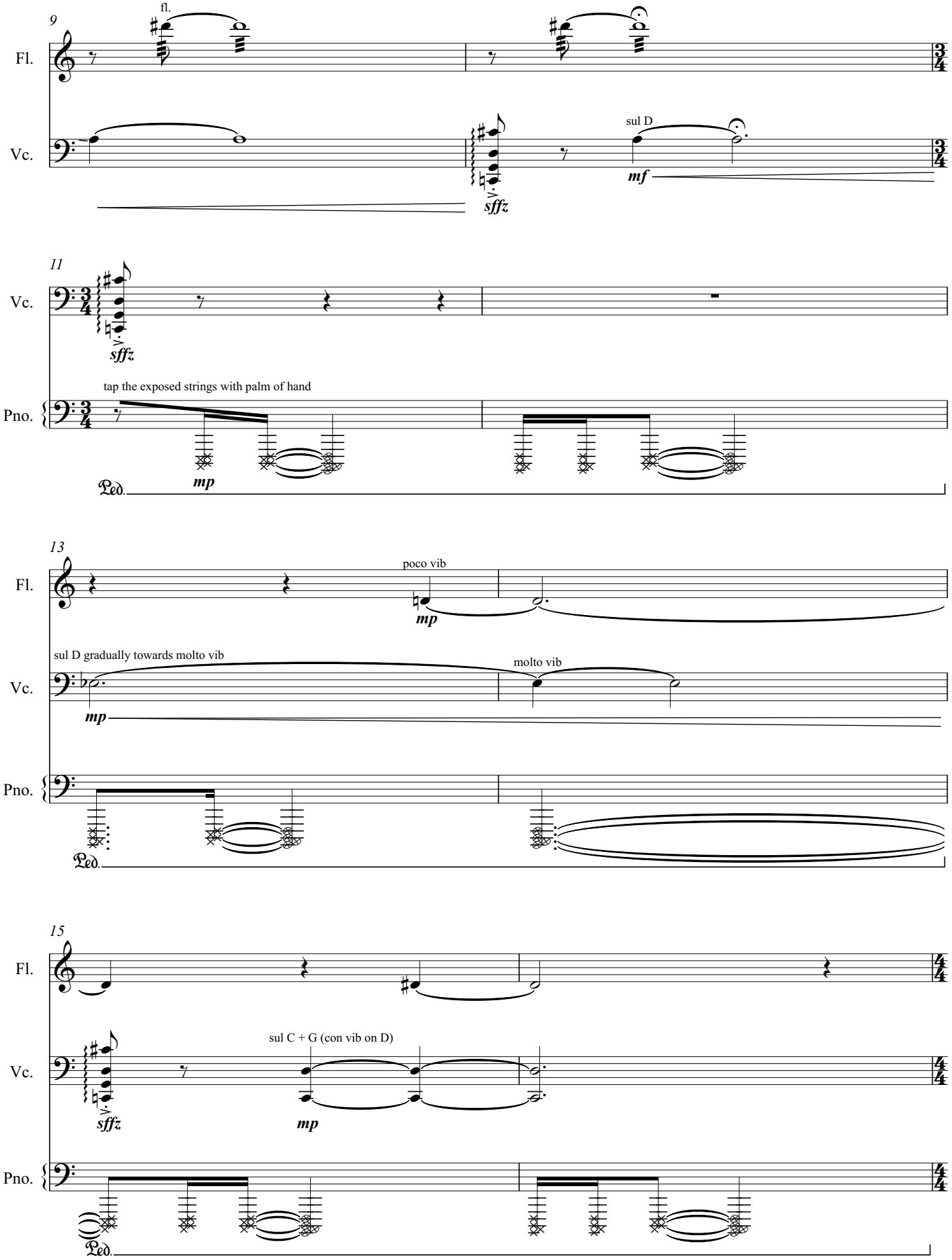
The Human Brain on Music and Sound

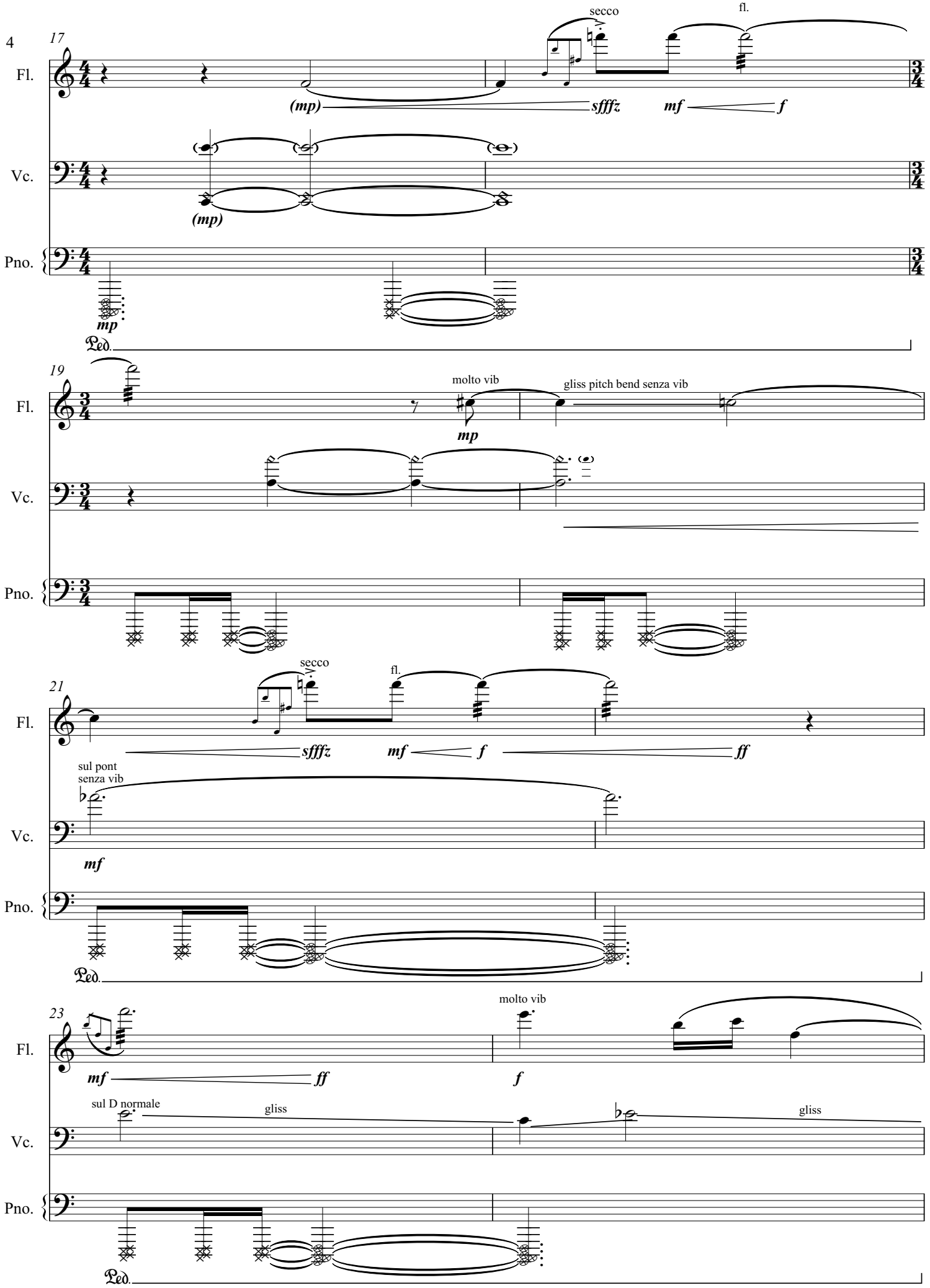
Approximate duratio: 12 min 30 sec

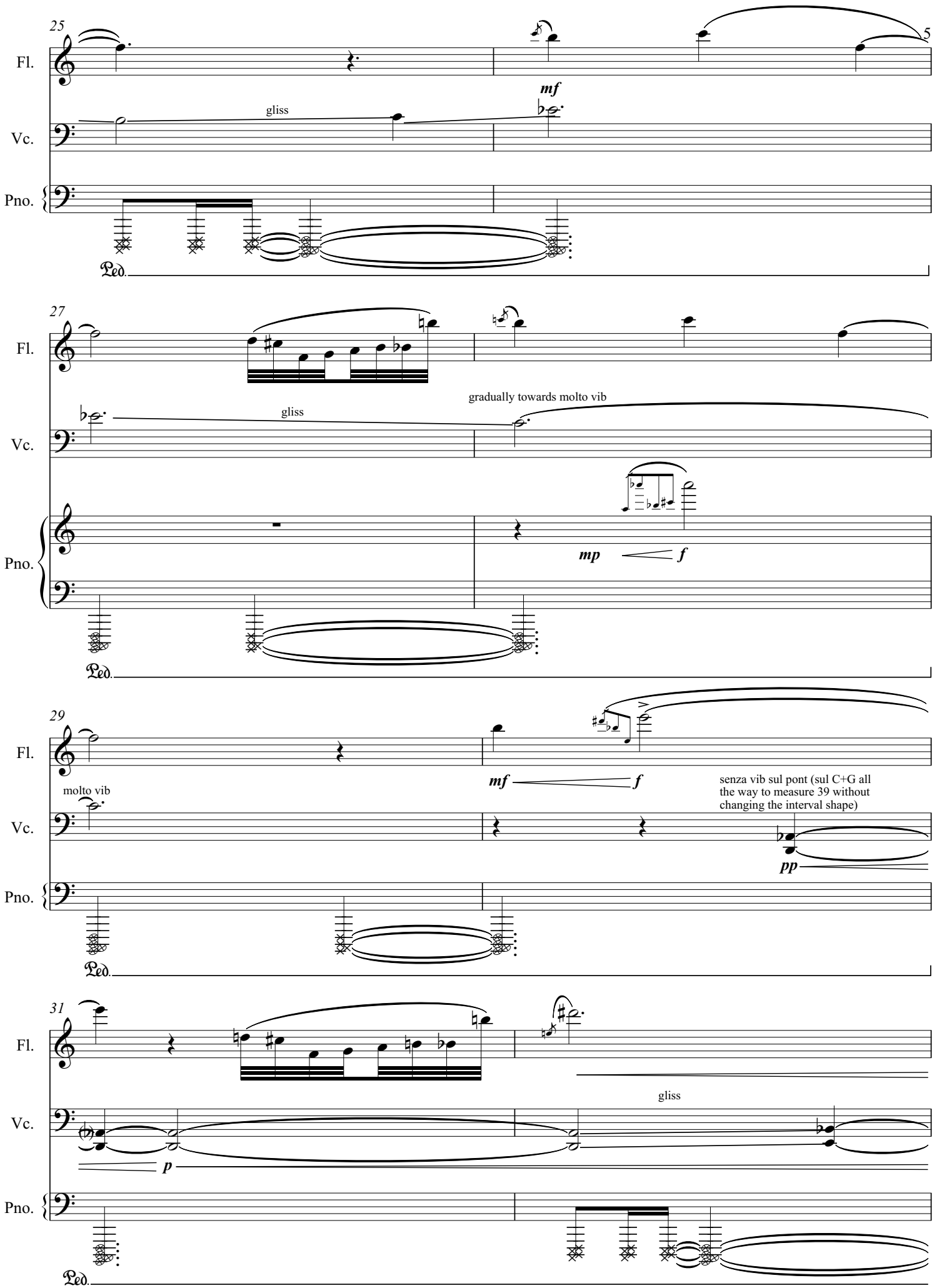
Aryan B.

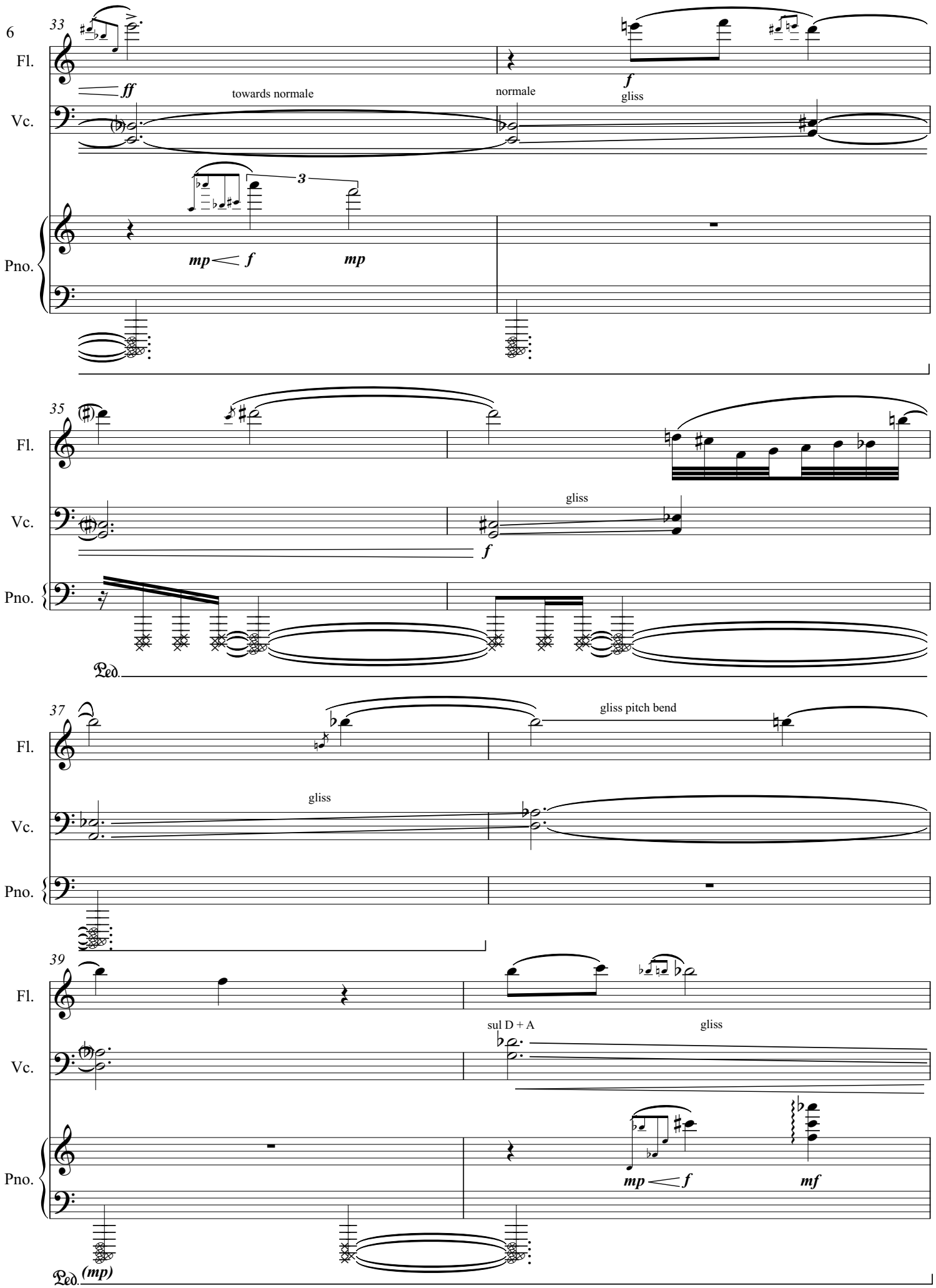
Movement II:

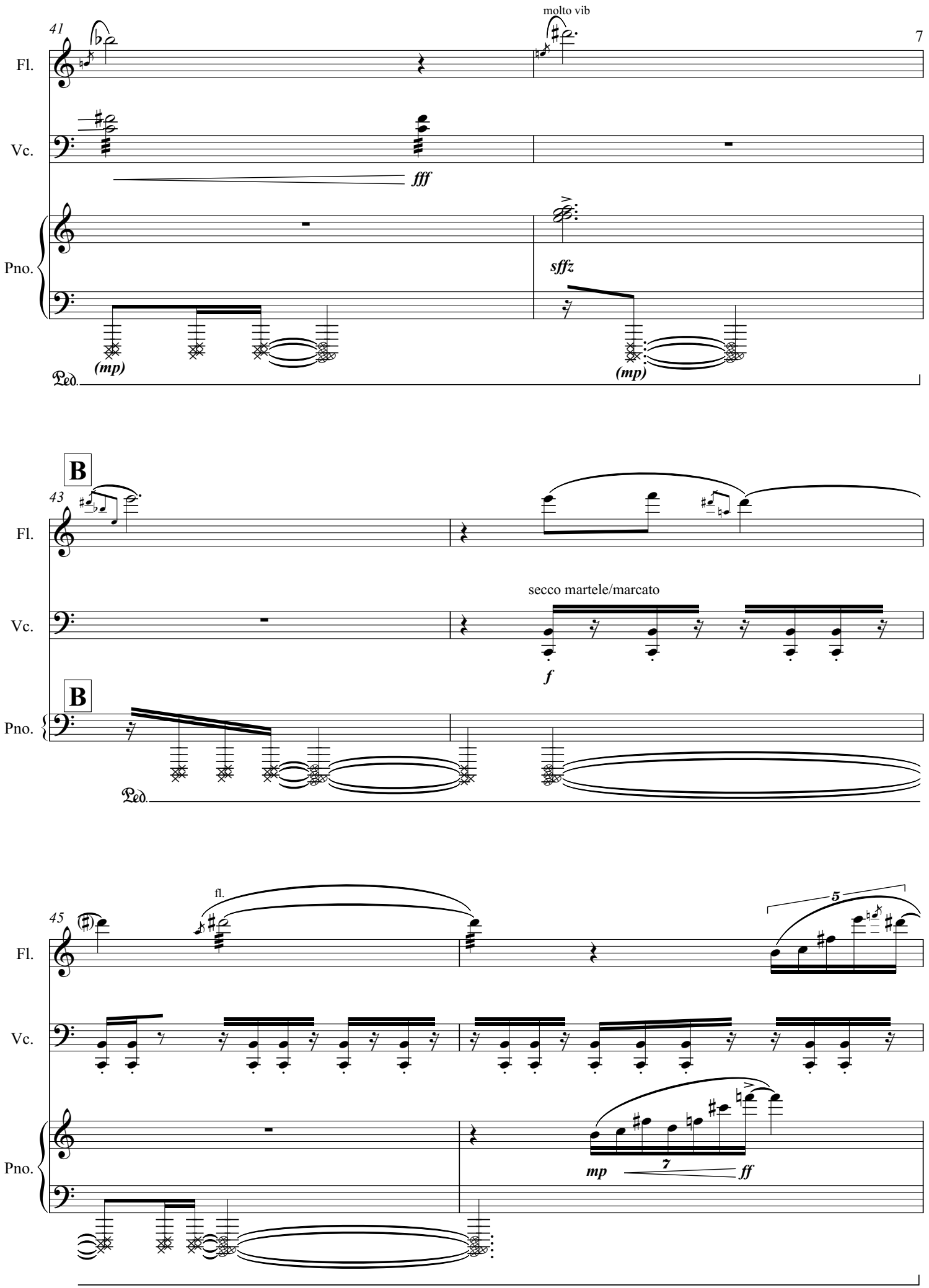


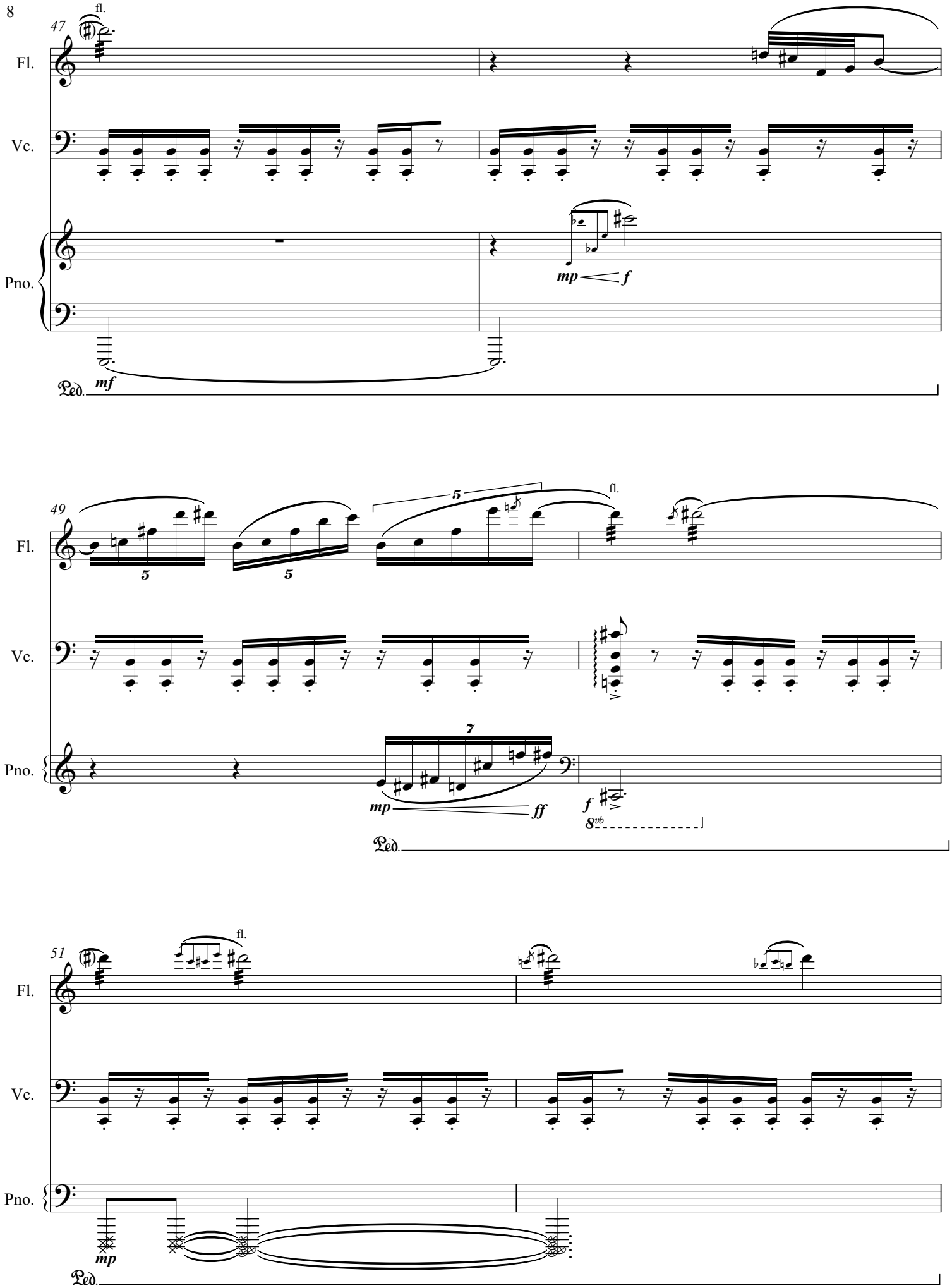

9
fl.
Fl.
Vc.
sul D
sffz
mf
11
Vc.
sffz
tap the exposed strings with palm of hand
Pno.
mp
Ped.
13
Fl.
poco vib
mp
sul D gradually towards molto vib
molto vib
Vc.
mp
Pno.
Ped.
15
Fl.
Vc.
sul C + G (con vib on D)
sffz
mp
Pno.
Ped.

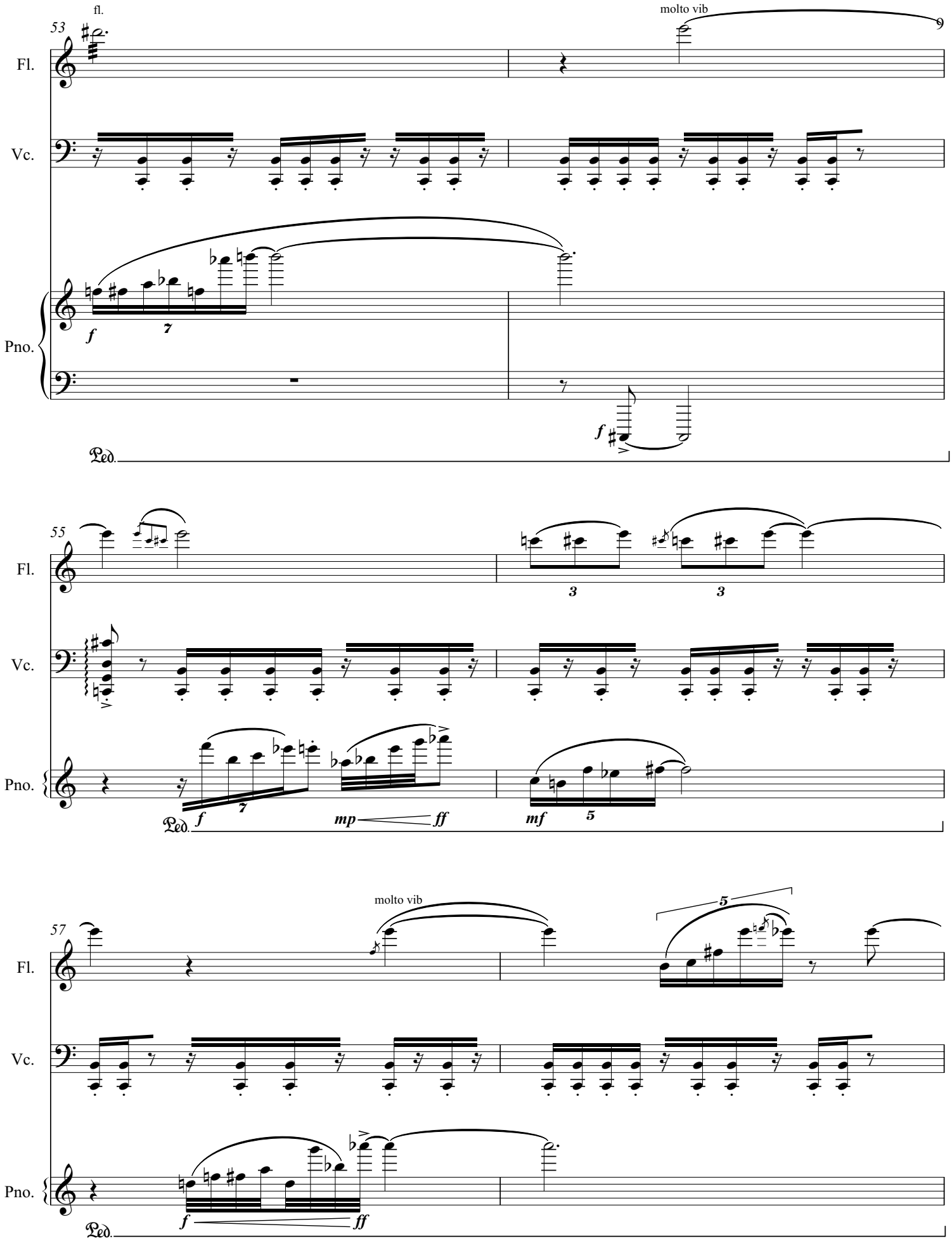

17
Fl.
Vc.
Pno.
secco
fl.
(mp)
sfffz
mf
f
(mp)
mp
Ped.
19
molto vib
gliss pitch bend senza vib
mp
21
secco
fl.
sfffz
mf
f
ff
sul pont
senza vib
mf
23
molto vib
mf
ff
f
sul D normale
gliss
gliss

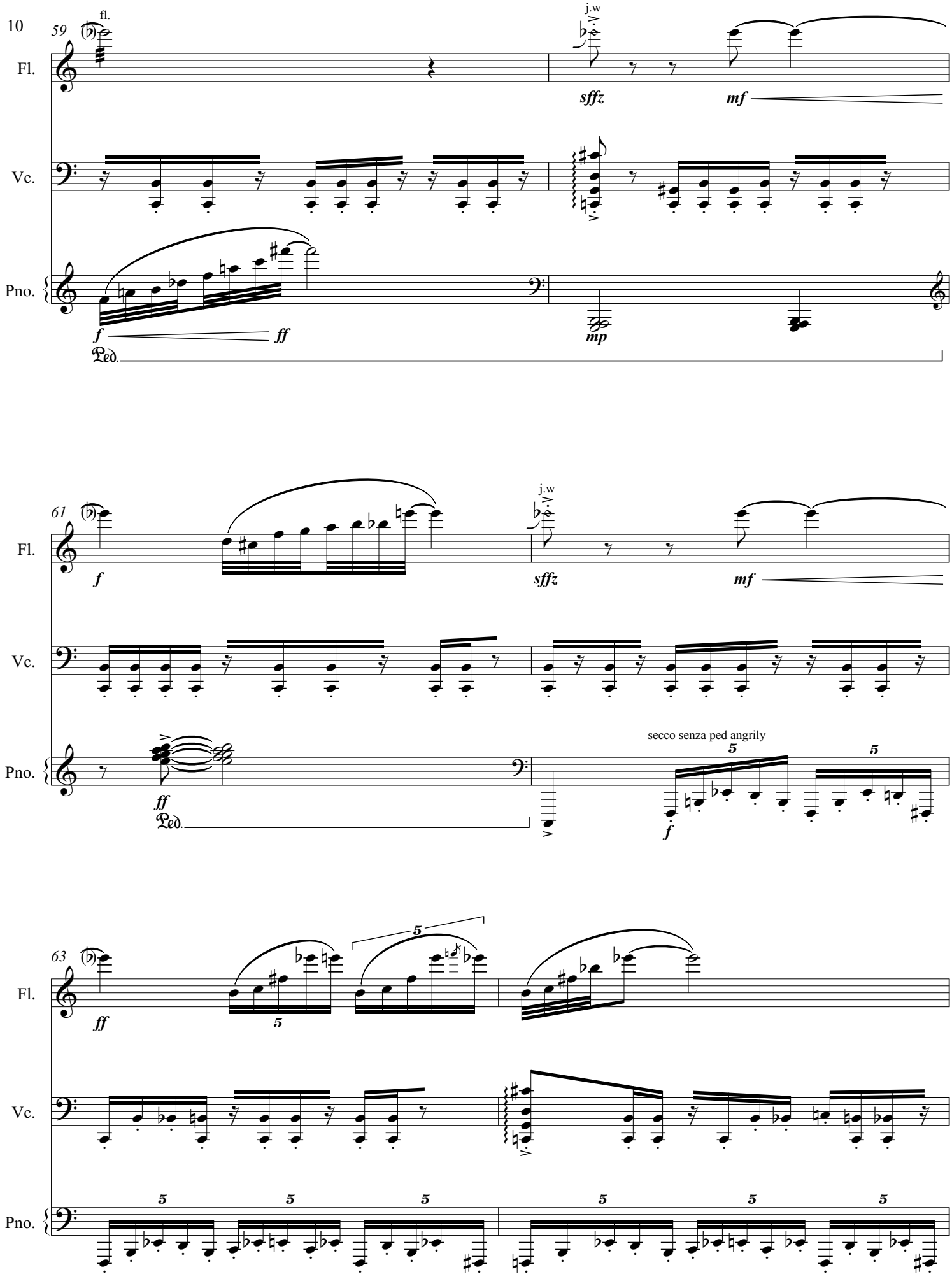

25
Fl.
Vc.
Pno.
gliss
mf
Ped.
27
gradually towards molto vib
gliss
mp
f
29
molto vib
mf
f
senza vib sul pont (sul C+G all the way to measure 39 without changing the interval shape)
pp
31
gliss
p

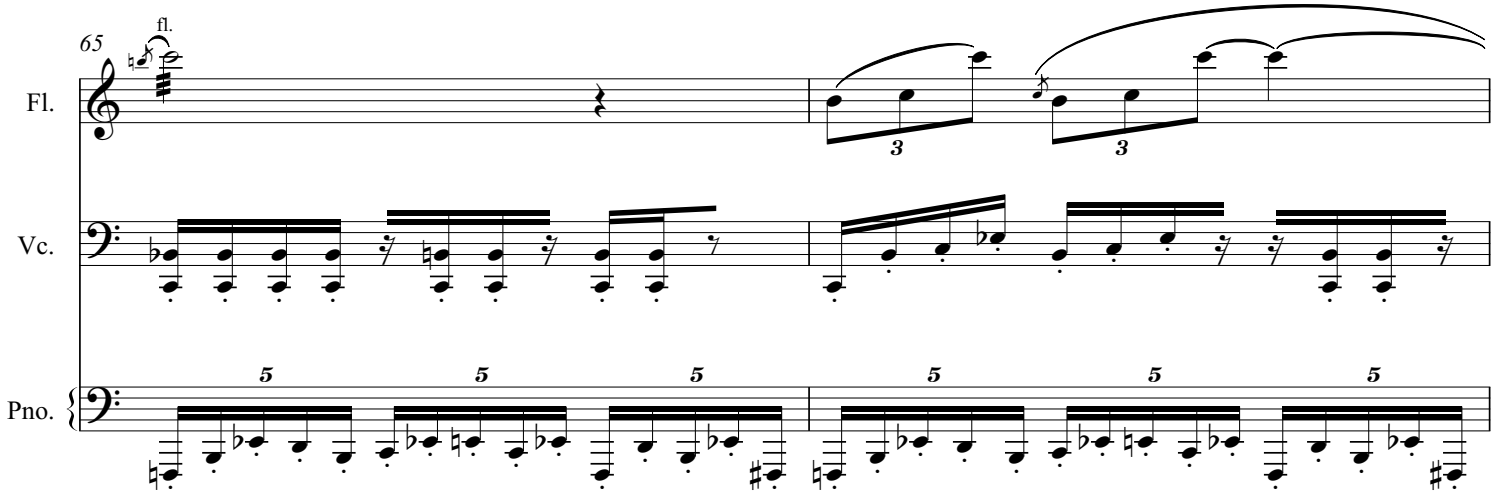

33
Fl.
Vc.
Pno.
ff
towards normale
normale
f
gliss
3
mp
f
mp
35
Fl.
Vc.
Pno.
gliss
f
Ped.
37
Fl.
Vc.
Pno.
gliss pitch bend
gliss
39
Fl.
Vc.
Pno.
sul D + A
gliss
mp
f
mf
Ped.
(mp)

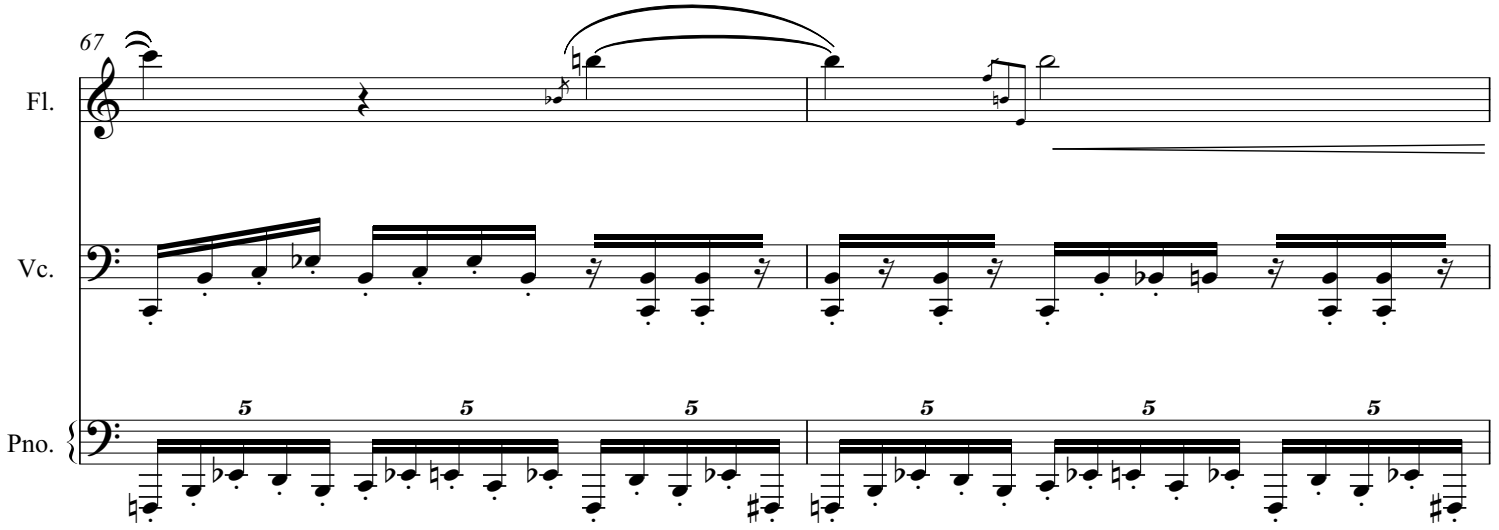

41
molto vib
Fl.
Vc.
fff
Pno.
sffz
(mp)
(mp)
Ped.
B
43
Fl.
secco martele/marcato
Vc.
f
B
Pno.
Ped.
45
fl.
5
Fl.
Vc.
Pno.
mp
7
ff

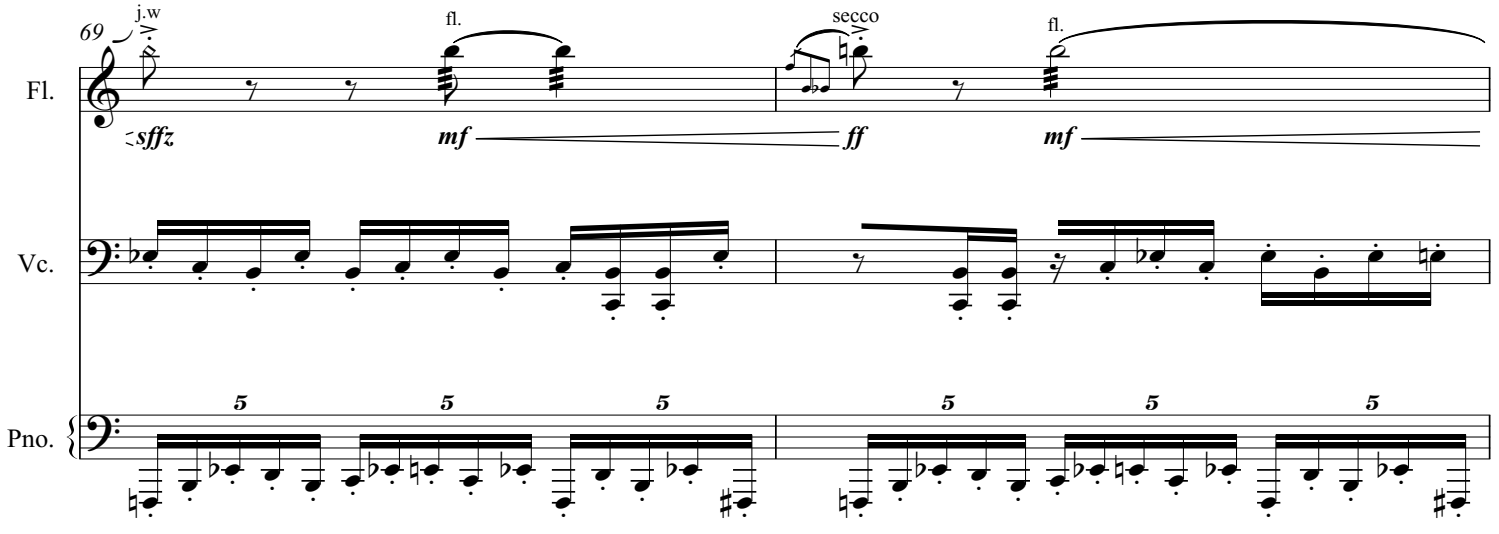

47
fl.
Fl.
Vc.
Pno.
mp
f
Ped.
mf
49
5
5
5
fl.
Fl.
Vc.
Pno.
7
mp
ff
f
8vb
Ped.
51
fl.
Fl.
Vc.
Pno.
mp
Ped.

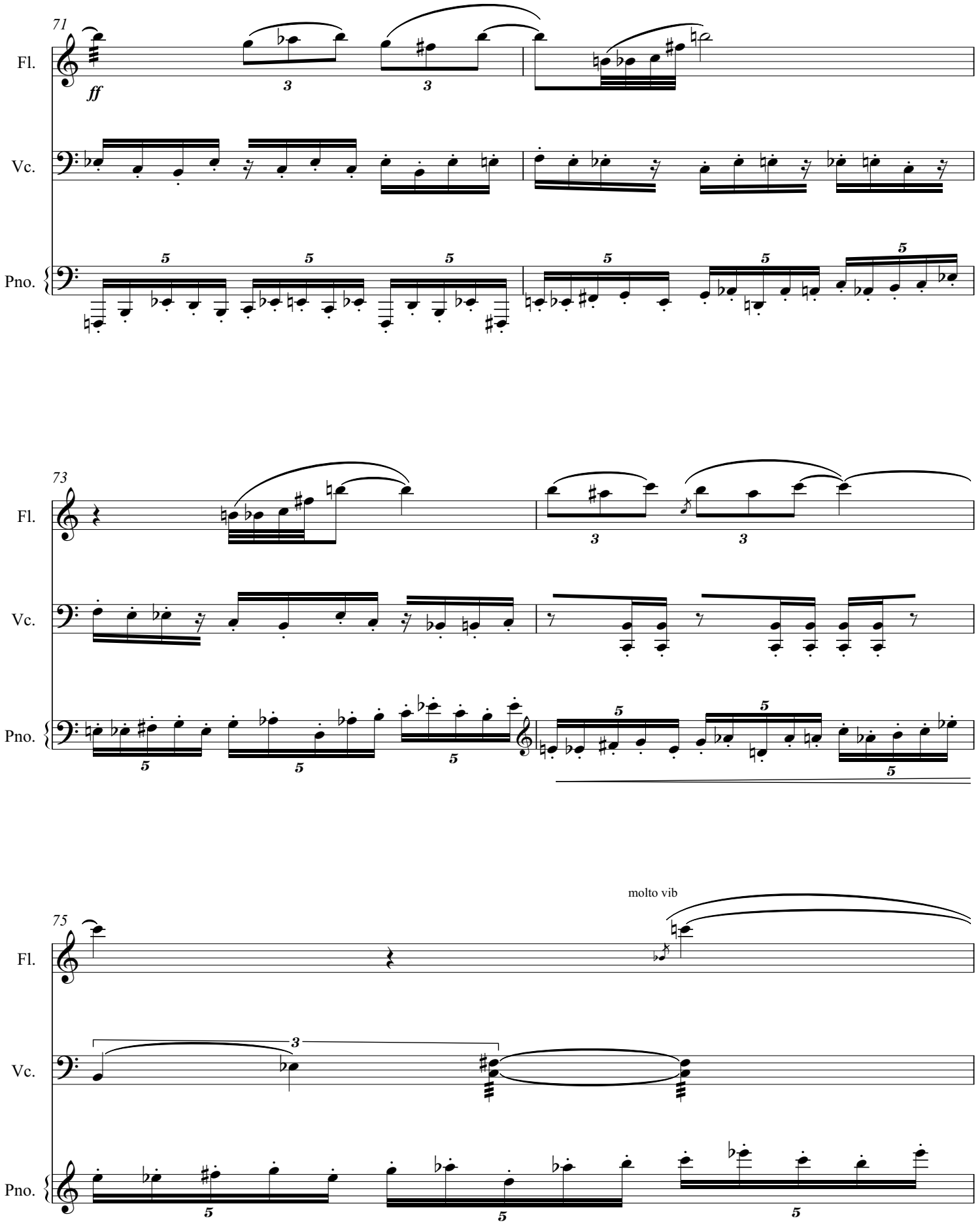

fl.
53
molto vib
Fl.
Vc.
Pno.
f
7
f
Ped.
55
3
3
Fl.
Vc.
Pno.
f
7
mp
ff
mf
5
Ped.
57
molto vib
5
Fl.
Vc.
Pno.
f
ff
Ped.

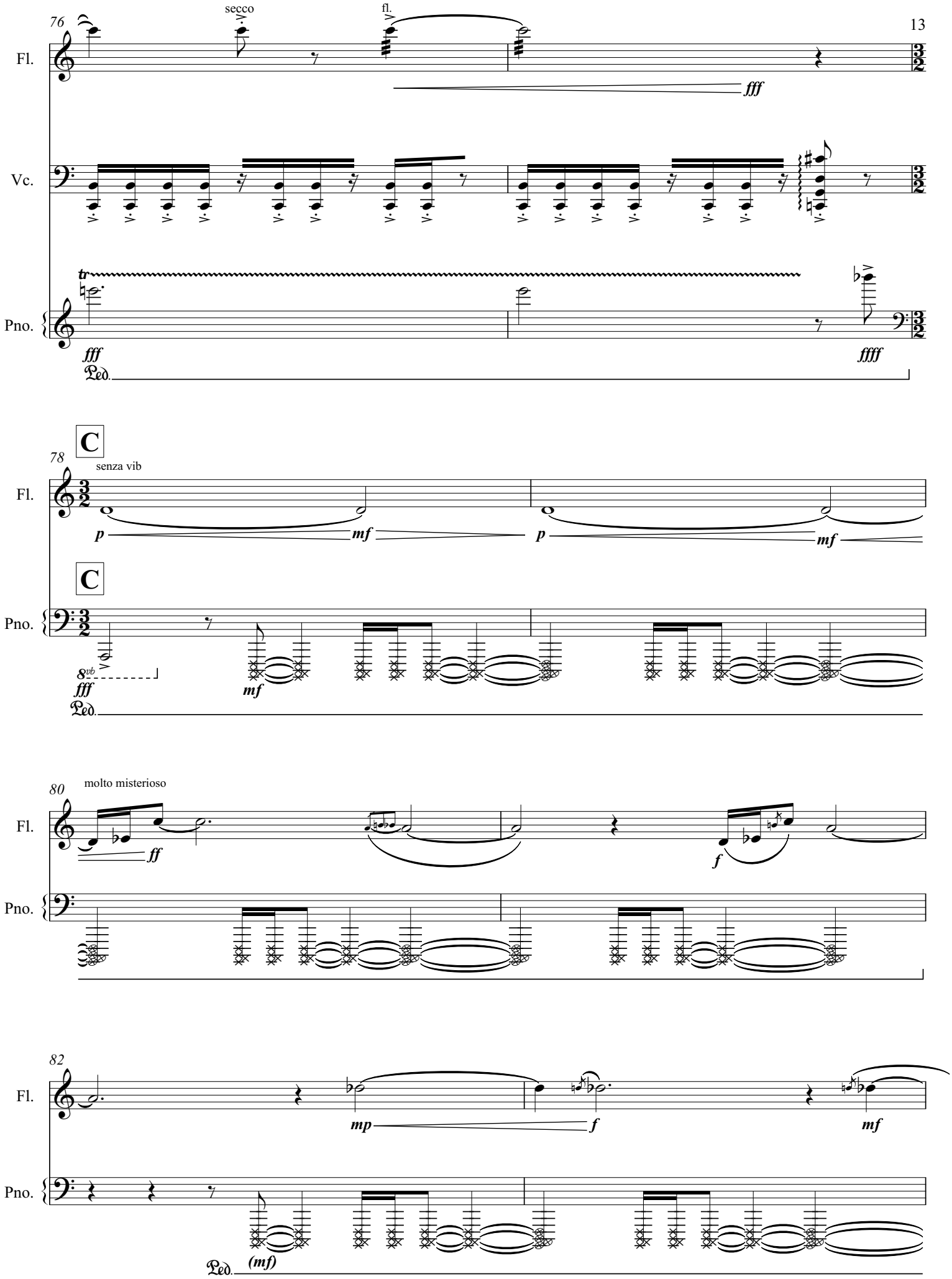

59
fl.
j.w
Fl.
Vc.
Pno.
sffz
mf
f
ff
mp
Ped.
61
j.w
Fl.
Vc.
Pno.
f
sffz
mf
ff
Ped.
secco senza ped angrily
5
5
f
63
Fl.
Vc.
Pno.
ff
5
5
5
5
5
5
5

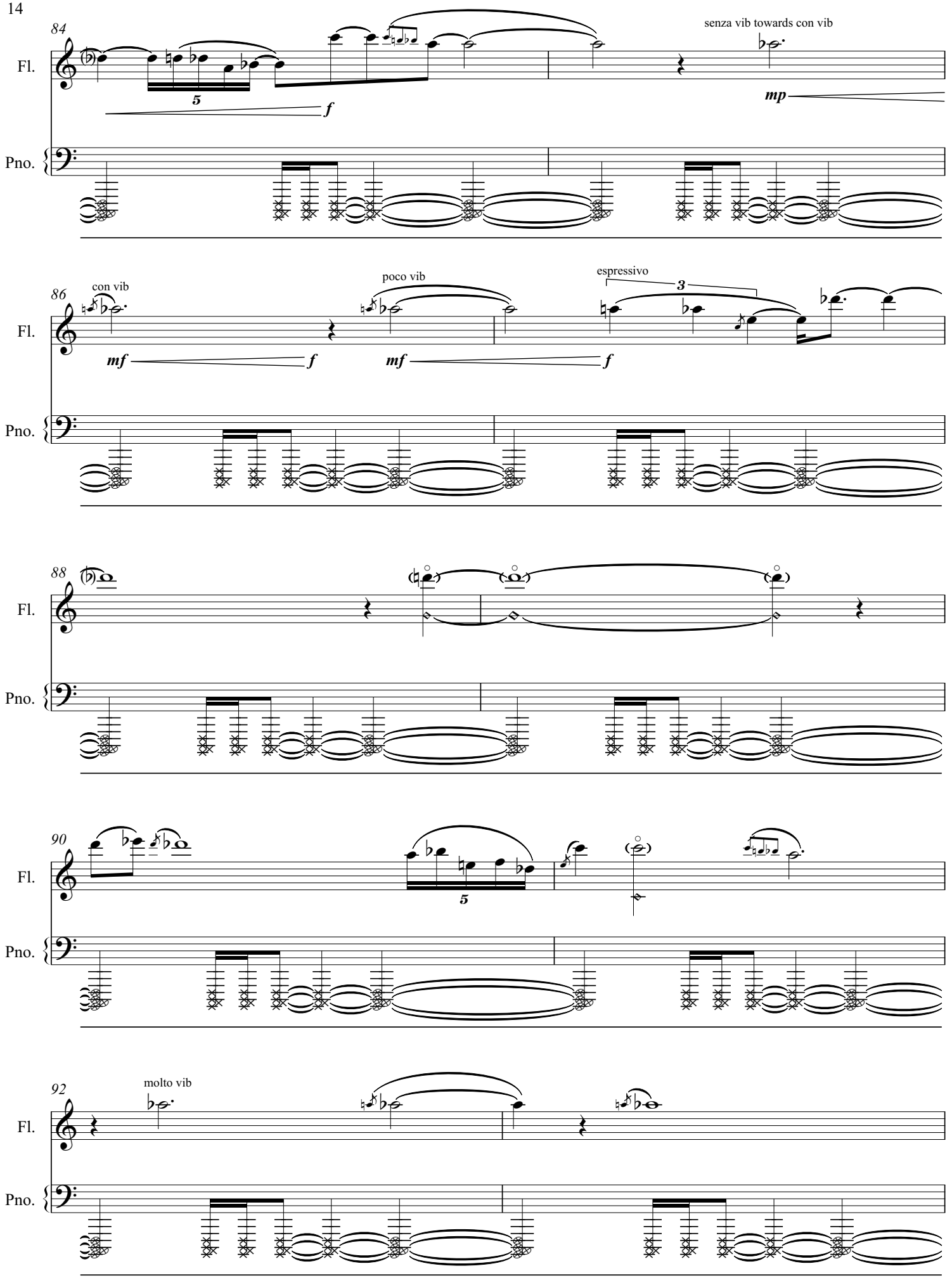

65
fl.
Fl.
Vc.
Pno.
3
3
5
5
5
5
5
5

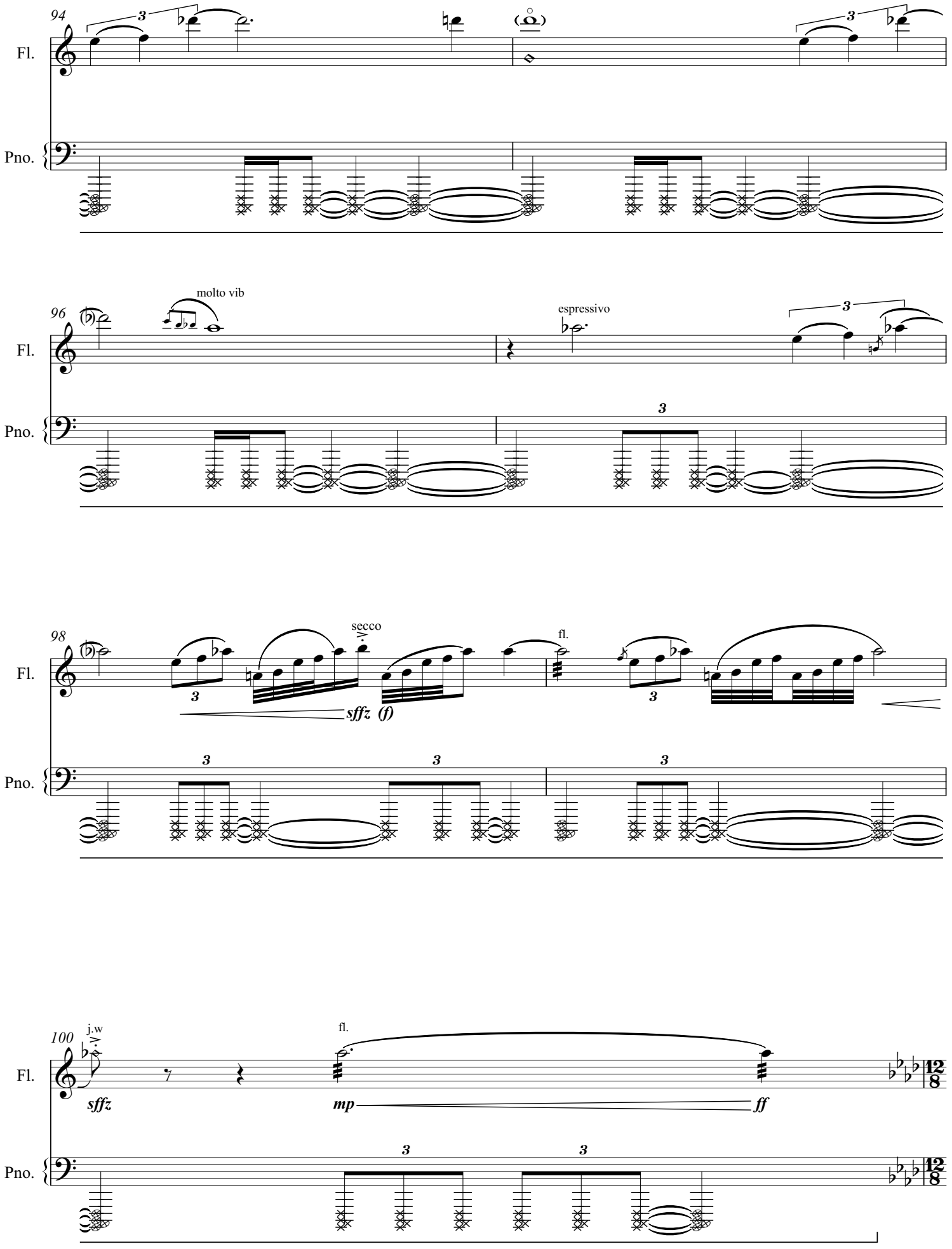

67
Fl.
Vc.
Pno.
5
5
5
5
5
5

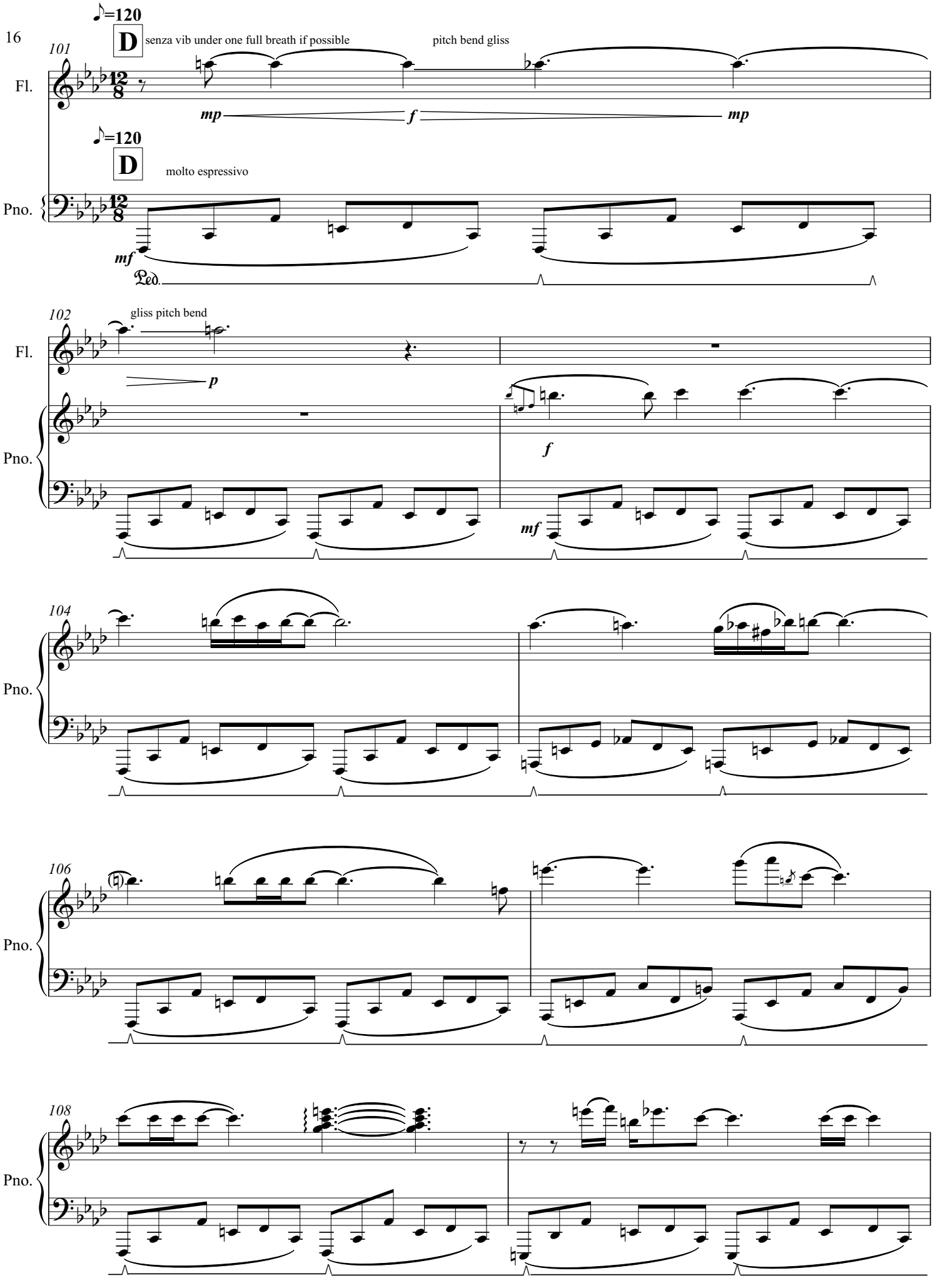

69
j.w
fl.
secco
fl.
Fl.
sffz
mf
ff
mf
Vc.
Pno.
5
5
5
5
5
5

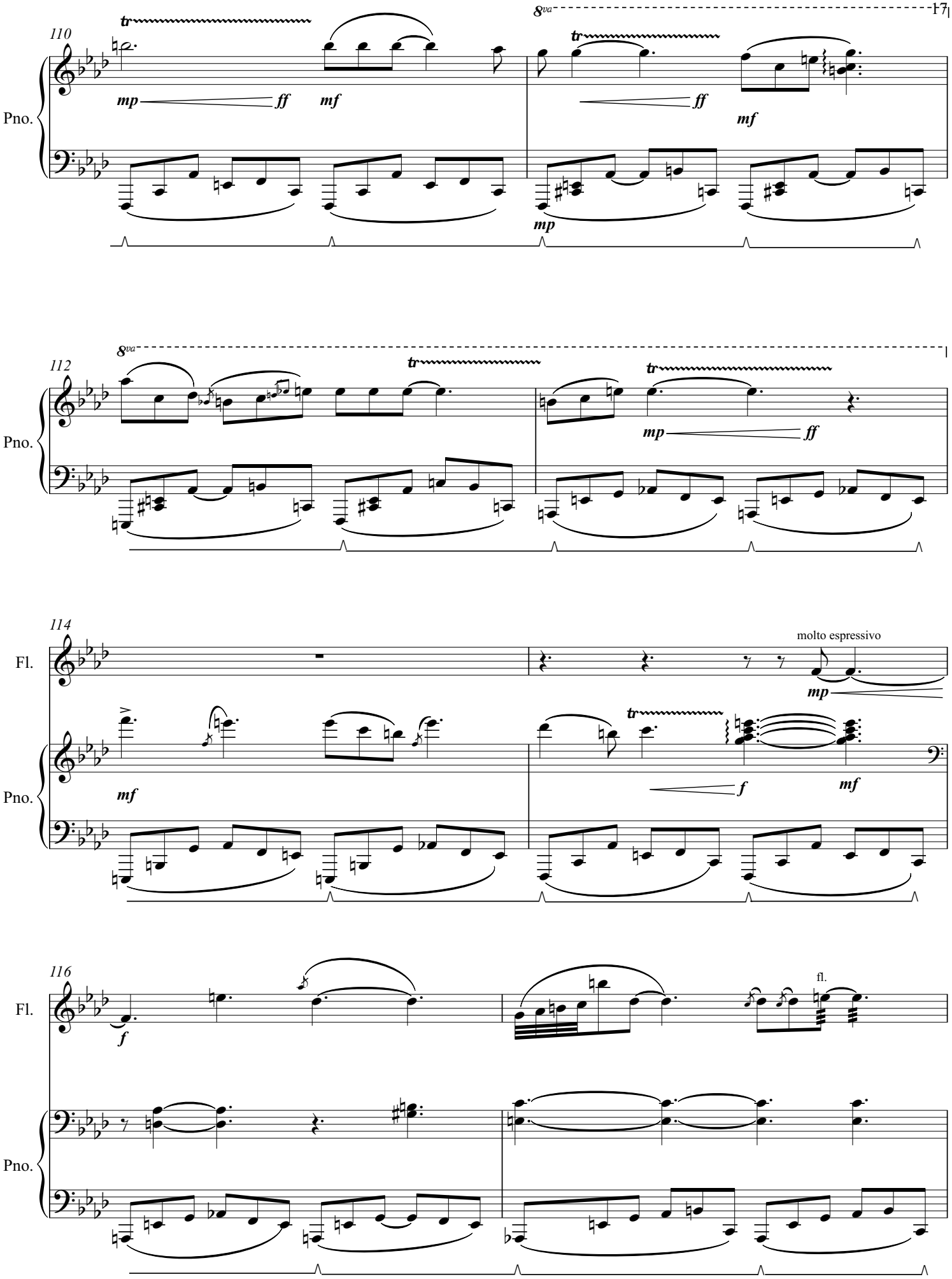

71
Fl.
ff
Vc.
Pno.
73
Fl.
Vc.
Pno.
75
molto vib
Fl.
Vc.
Pno.

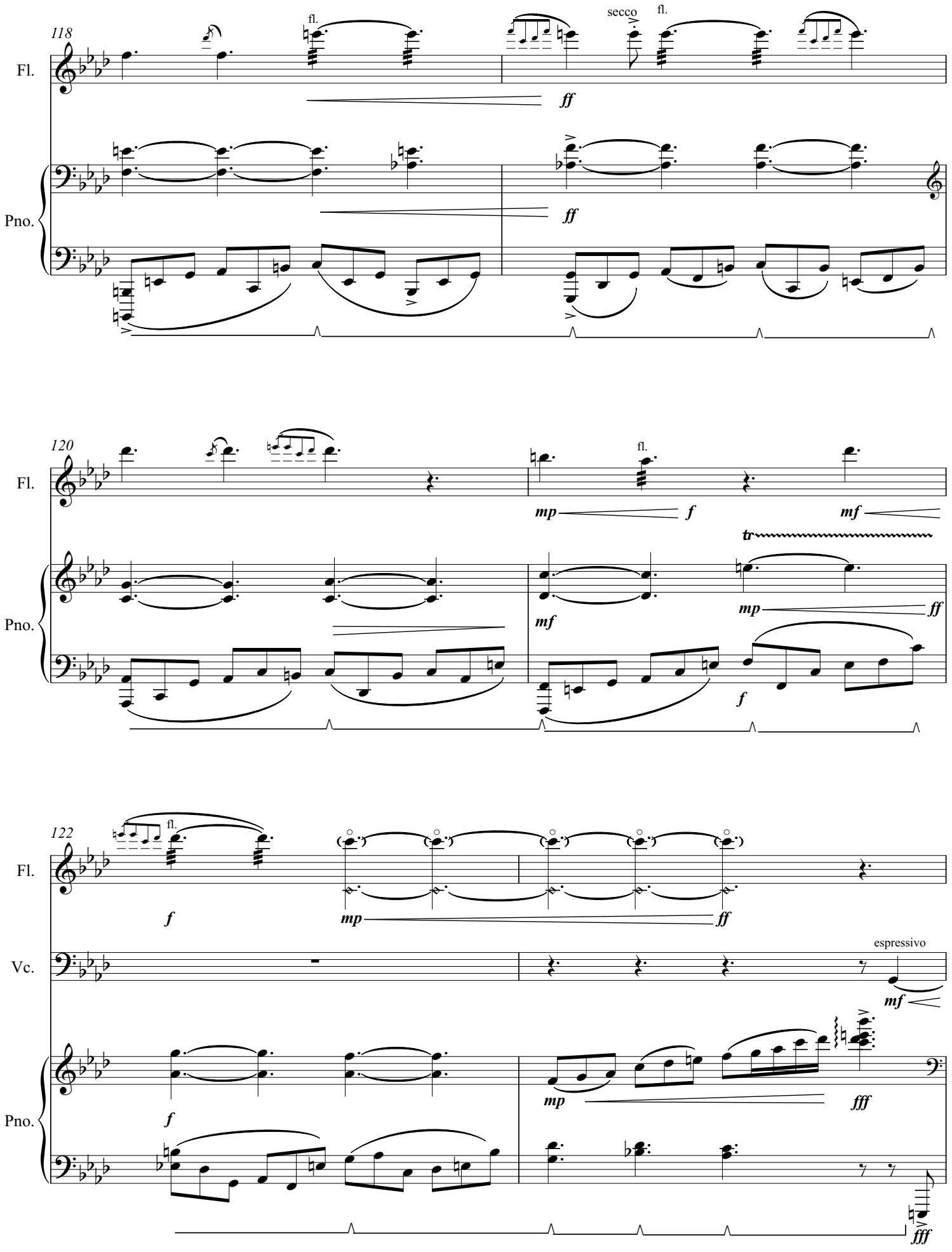

76
secco
fl.
Fl.
fff
Vc.
tr
Pno.
fff
ffff
Ped.
C
78
senza vib
Fl.
p
mf
p
mf
C
Pno.
8vb
fff
mf
Ped.
80
molto misterioso
Fl.
ff
f
Pno.
82
Fl.
mp
f
mf
Pno.
(mf)
Ped.

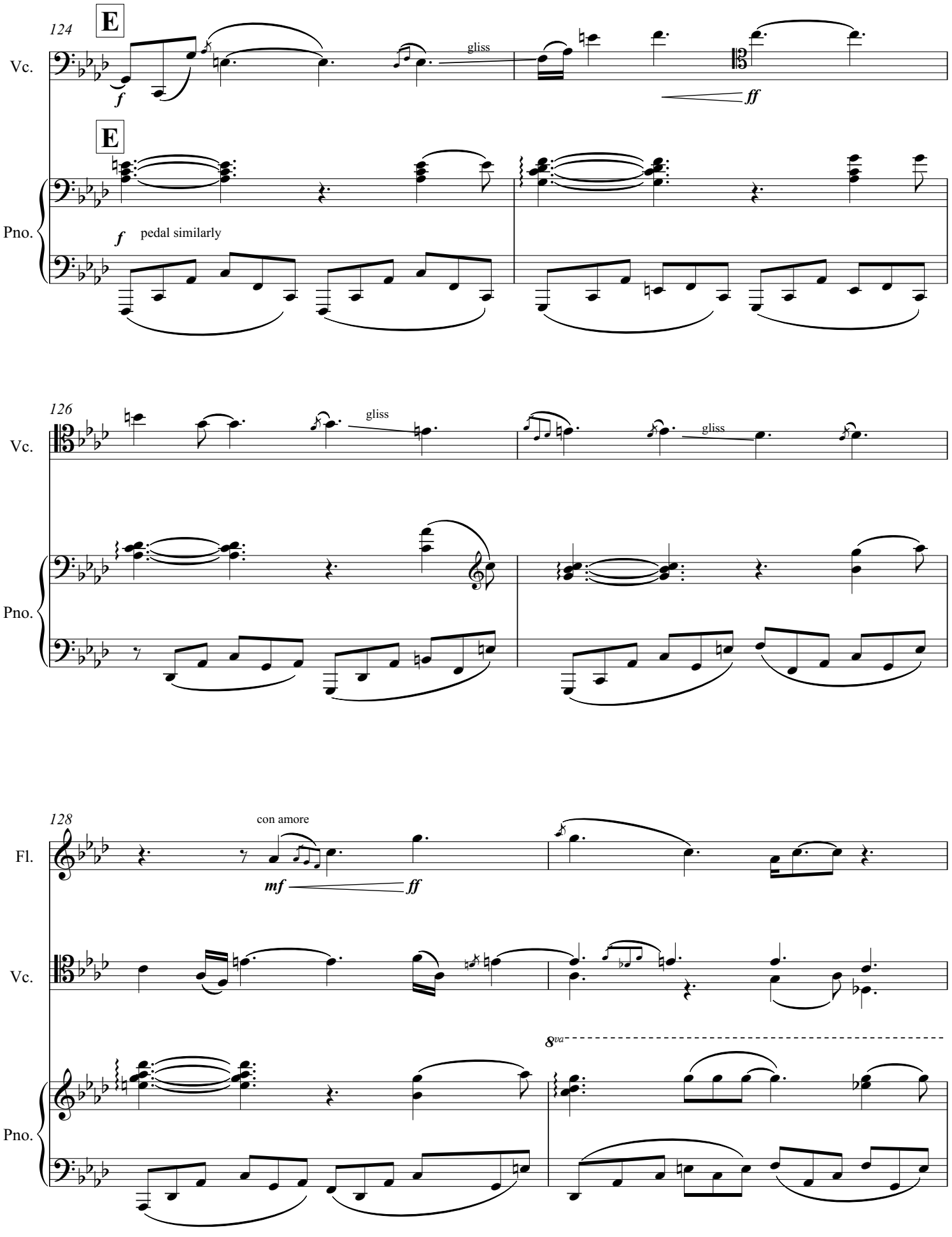

84
Fl.
Pno.
5
f
senza vib towards con vib
mp
86
con vib
mf
f
poco vib
mf
espressivo
3
f
88
90
5
92
molto vib

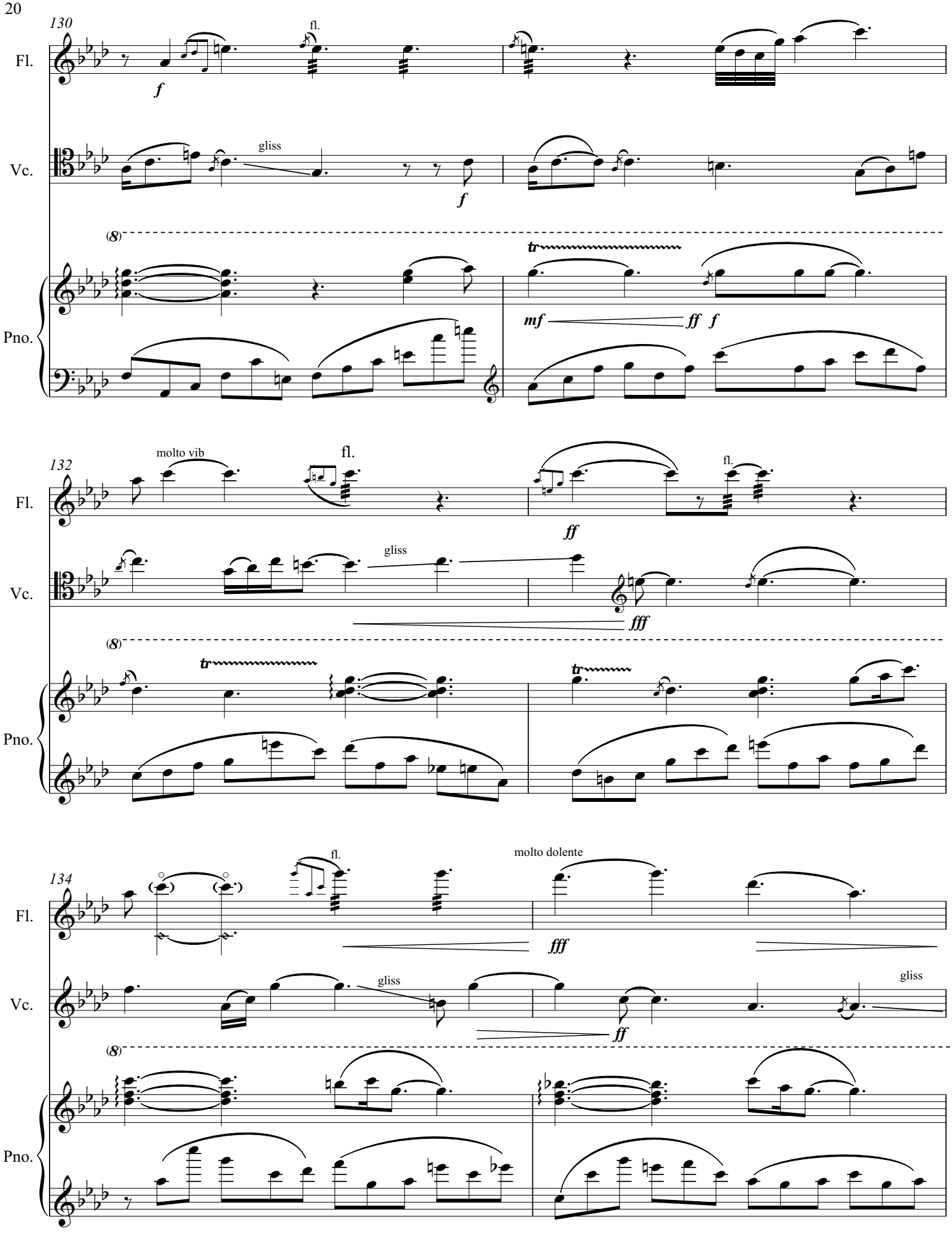

94
Fl.
Pno.
3
96
molto vib
espressivo
98
secco
fl.
sffz (f)
100
j.w
sffz
mp
ff
12/8

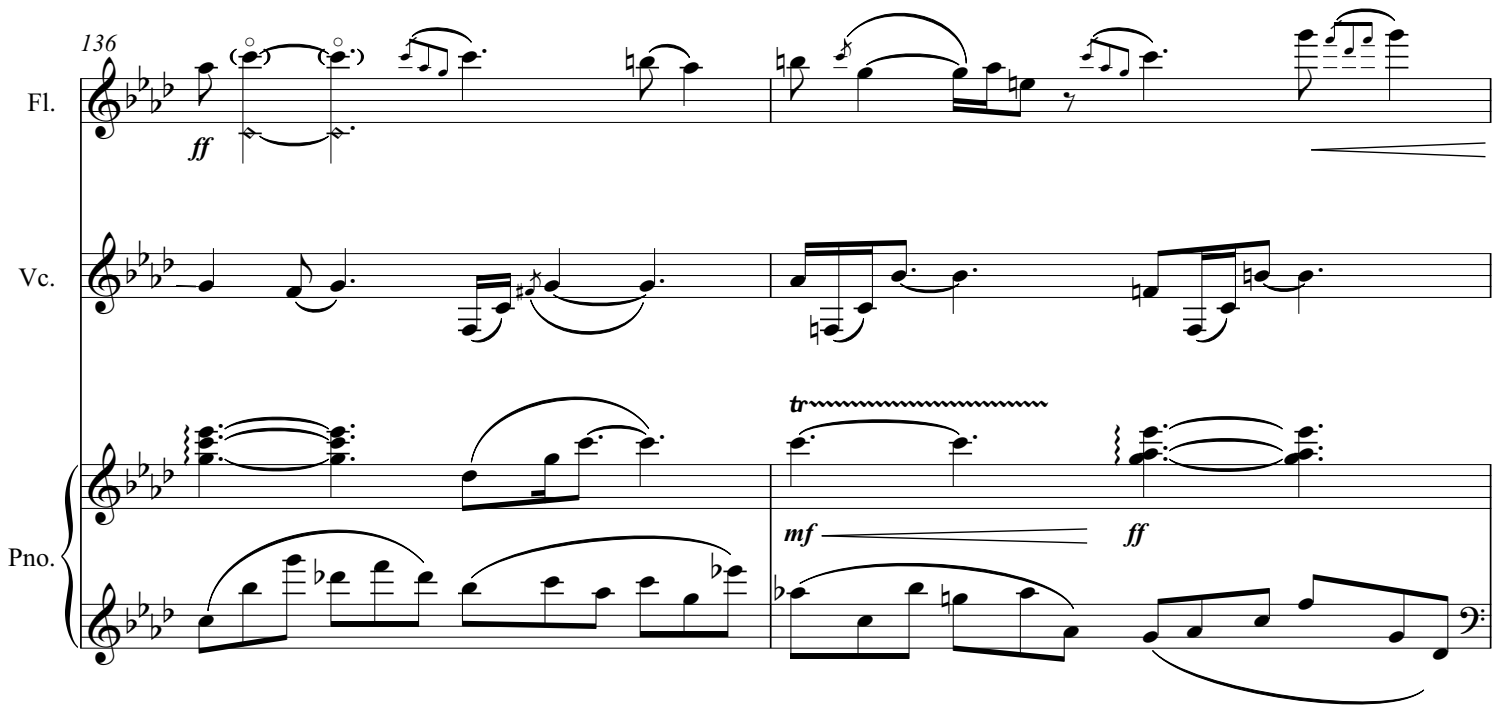

♪=120
D
senza vib under one full breath if possible
pitch bend gliss
101
Fl.
mp
f
mp
♪=120
D
molto espressivo
Pno.
mf
Ped.
102
gliss pitch bend
Fl.
p
Pno.
f
mf
104
Pno.
106
Pno.
108
Pno.

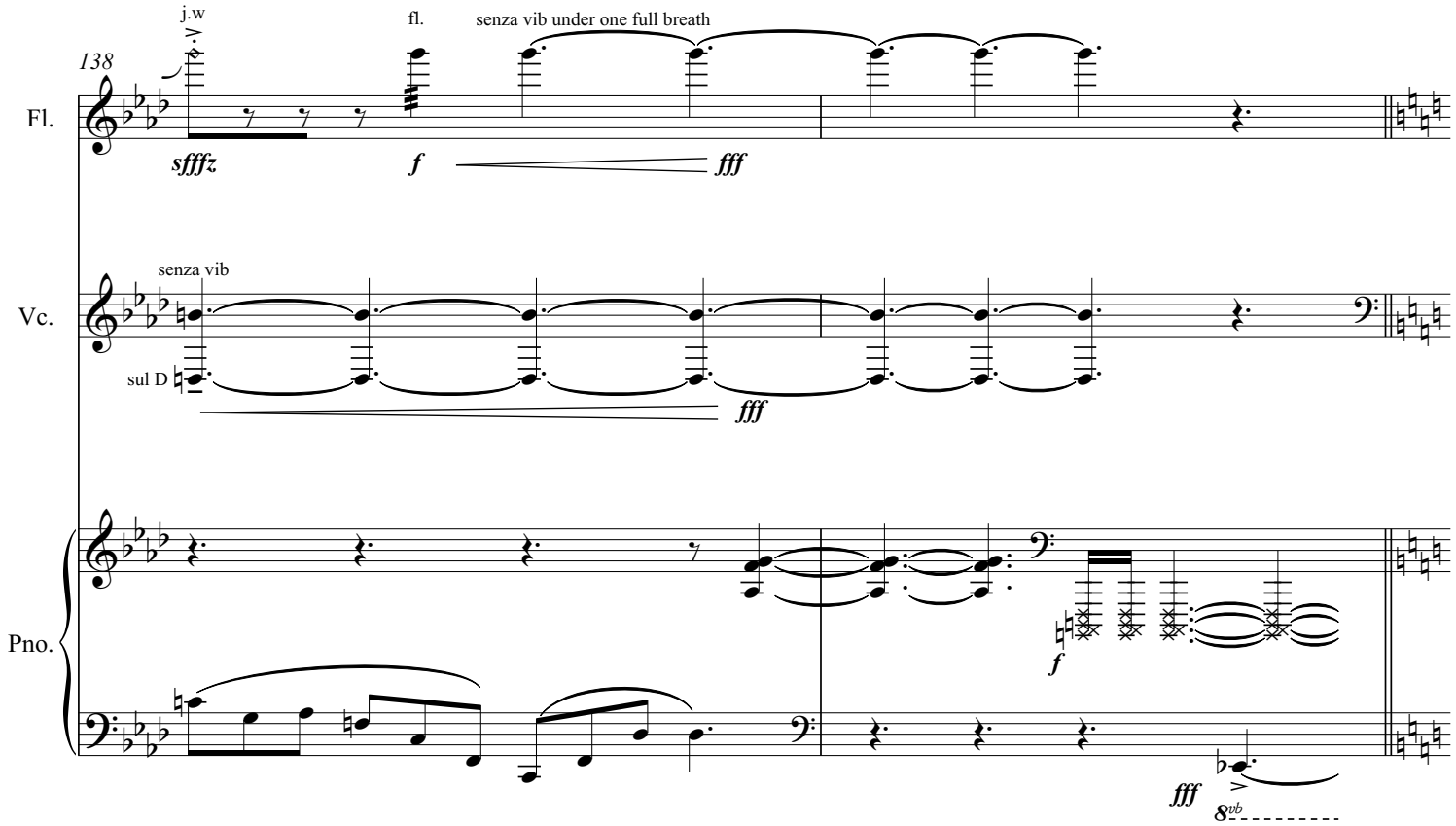

110
8va
tr
mp
ff
mf
Pno.
112
114
molto espressivo
Fl.
f
116
fl.

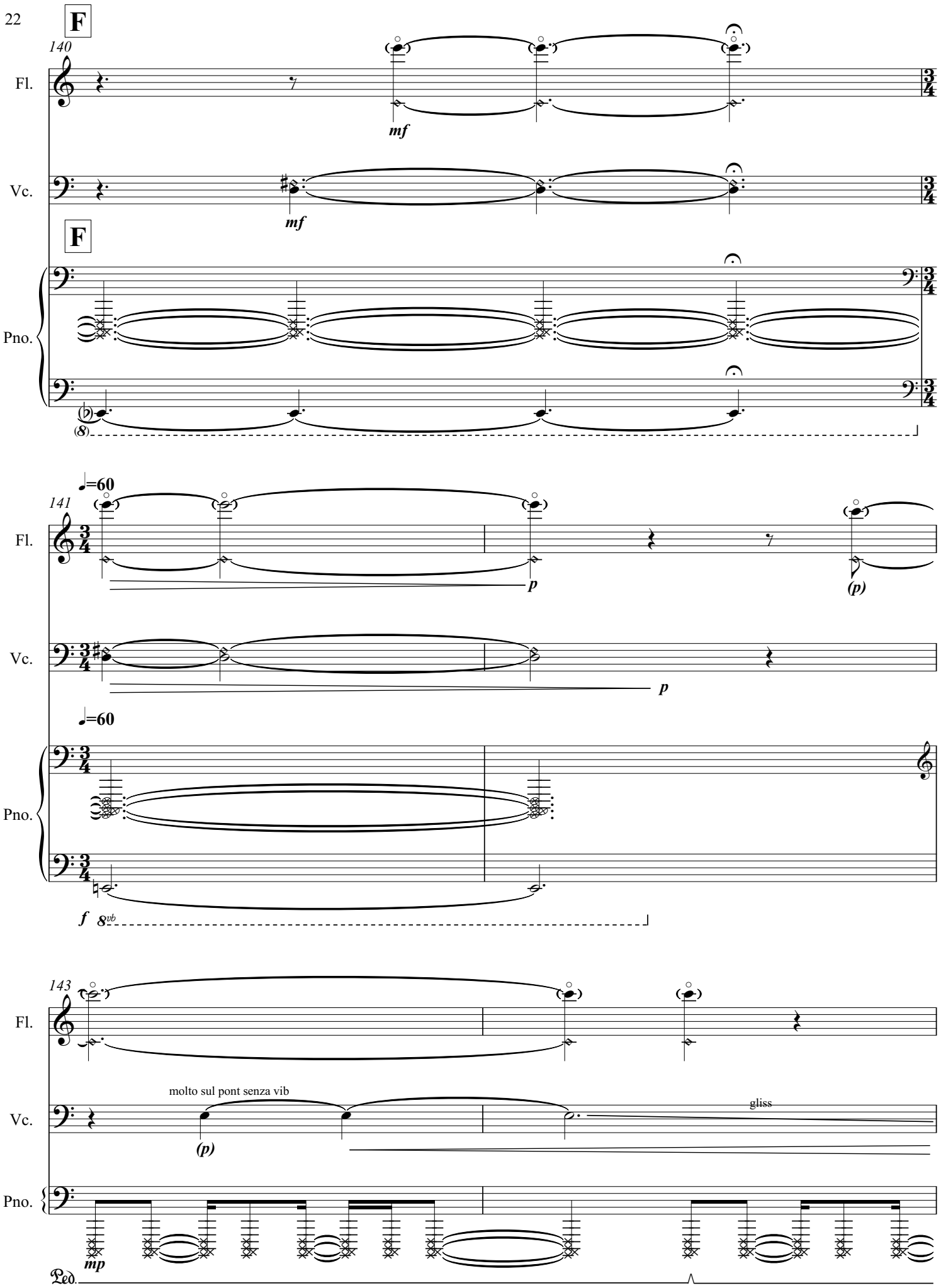

118
Fl.
fl.
secco
fl.
ff
Pno.
ff
120
Fl.
fl.
mp
f
mf
tr
Pno.
mf
mp
ff
f
122
Fl.
fl.
f
mp
ff
Vc.
espressivo
mf
Pno.
f
mp
fff
fff

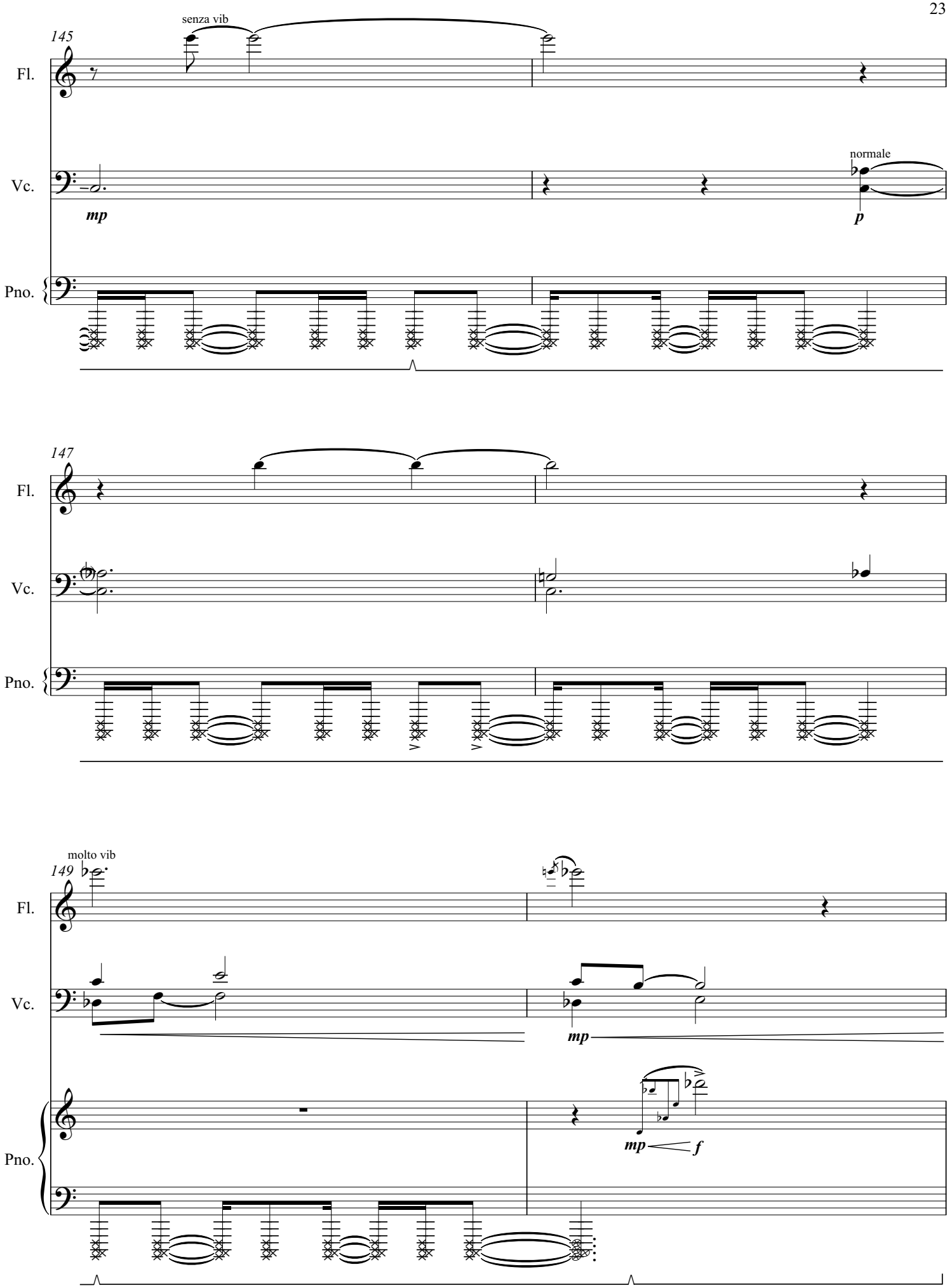

124
E
Vc.
f
gliss
ff
E
Pno.
f
pedal similarly
126
Vc.
gliss
gliss
Pno.
128
Fl.
con amore
mf
ff
Vc.
8va
Pno.


130
Fl.
Vc.
Pno.
fl.
gliss
molto vib
132
molto dolente
134
tr
mf
ff
f
fff


136
Fl.
ff
Vc.
Pno.
tr
mf
ff


138
j.w
fl.
senza vib under one full breath
Fl.
sffz
f
fff
senza vib
Vc.
sul D
fff
Pno.
f
fff
8vb


F
140
Fl.
mf
Vc.
mf
F
Pno.
8
♩=60
141
Fl.
p
(p)
Vc.
p
♩=60
Pno.
f
8vb
143
Fl.
molto sul pont senza vib
Vc.
(p)
gliss
Pno.
mp
Ped.


145
senza vib
Fl.
Vc.
mp
normale
p
Pno.
147
Fl.
Vc.
Pno.
molto vib
149
Fl.
Vc.
mp
Pno.
mp
f

151

Fl.

Vc.

Pno.

j.w

fl.

mf sffz mf

mf

3

tr

mp 7 ff mp ff

f

Ped.

Ped. 8vb ff

G

153

molto agitato con vib

Fl.

ff

secco molto martele

Vc.

f

G

Pno.

(8)

mf

155

Fl.

fff

Vc.

gliss

sffffz

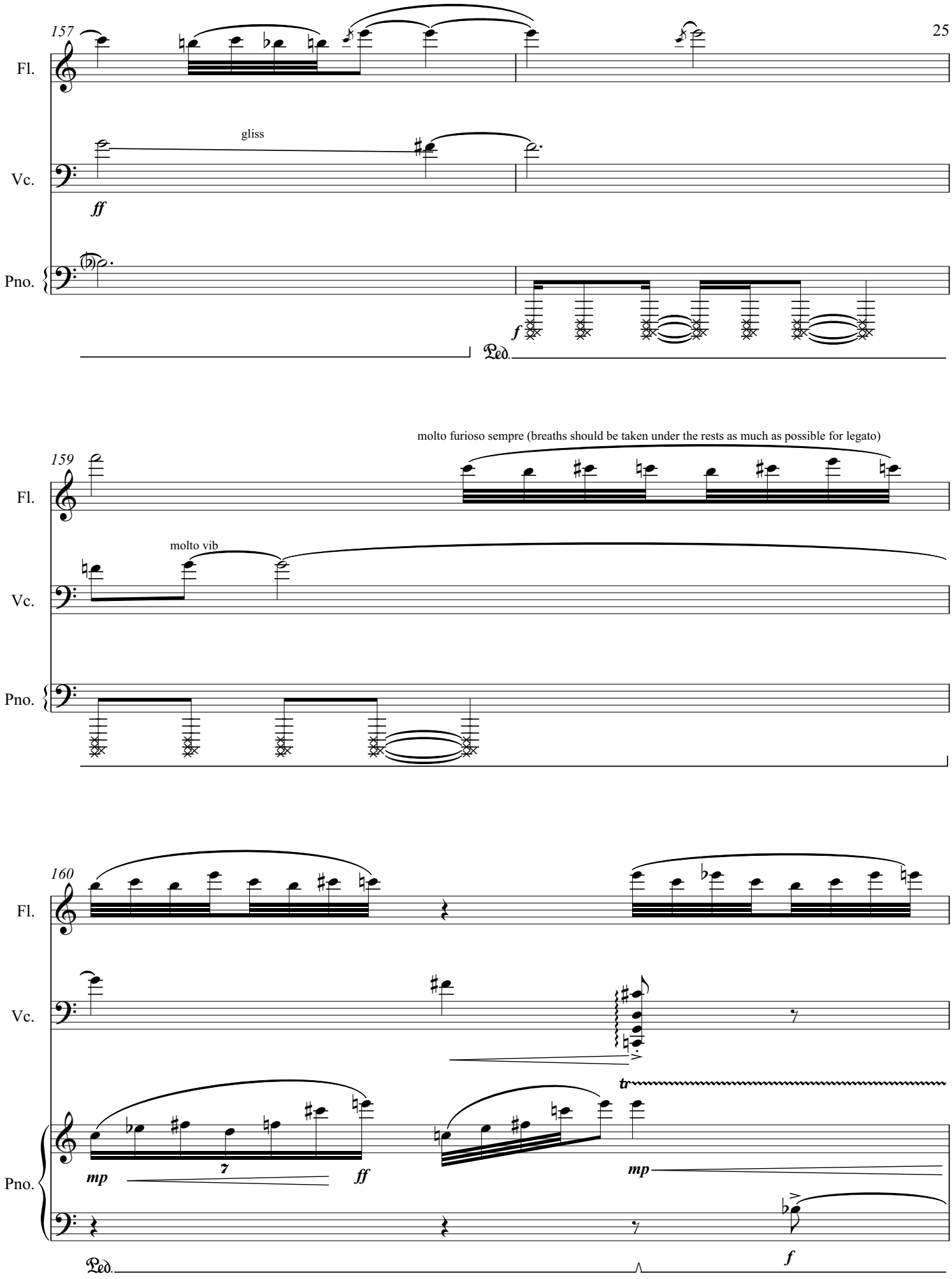
Pno.

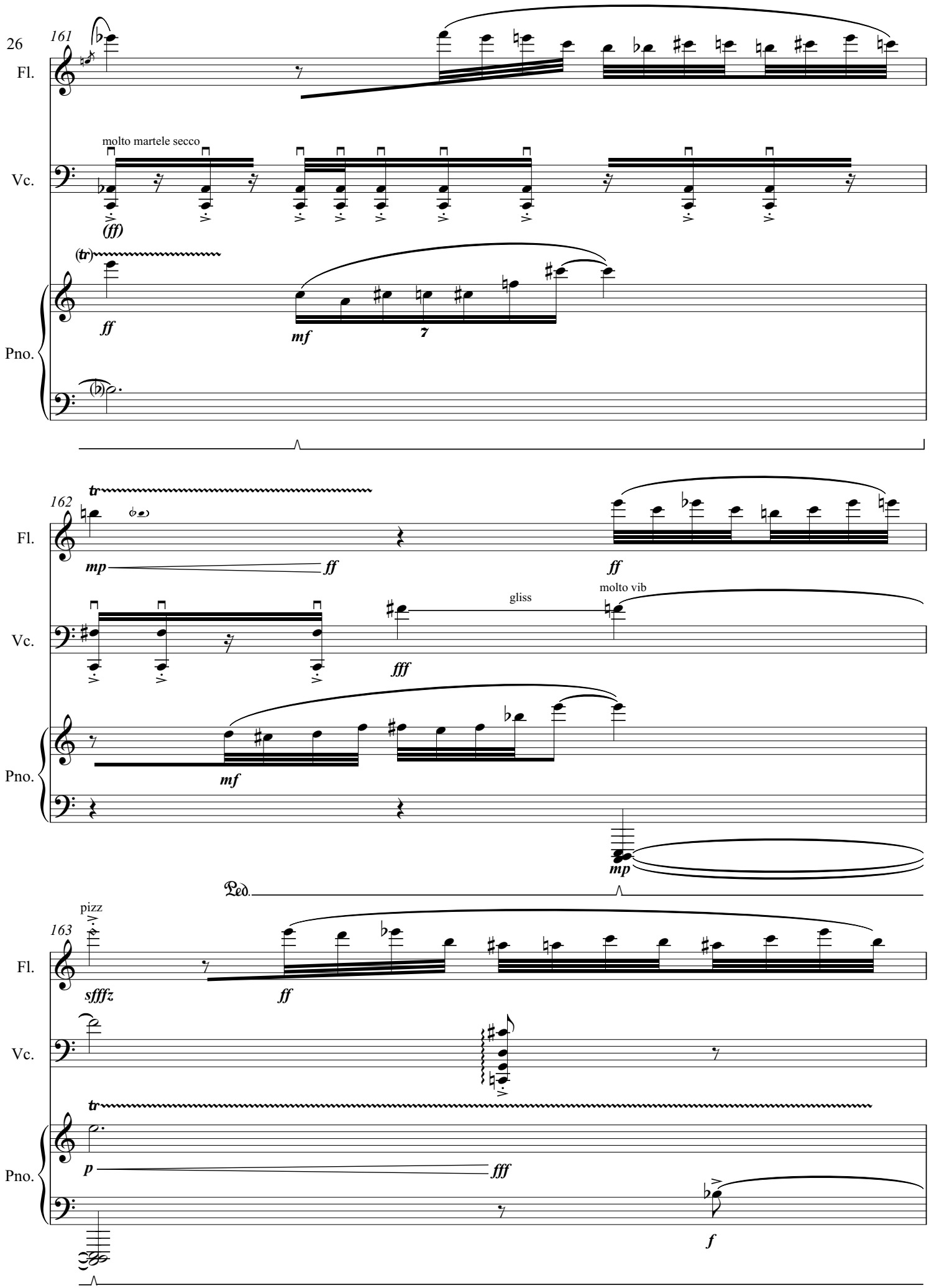
tr

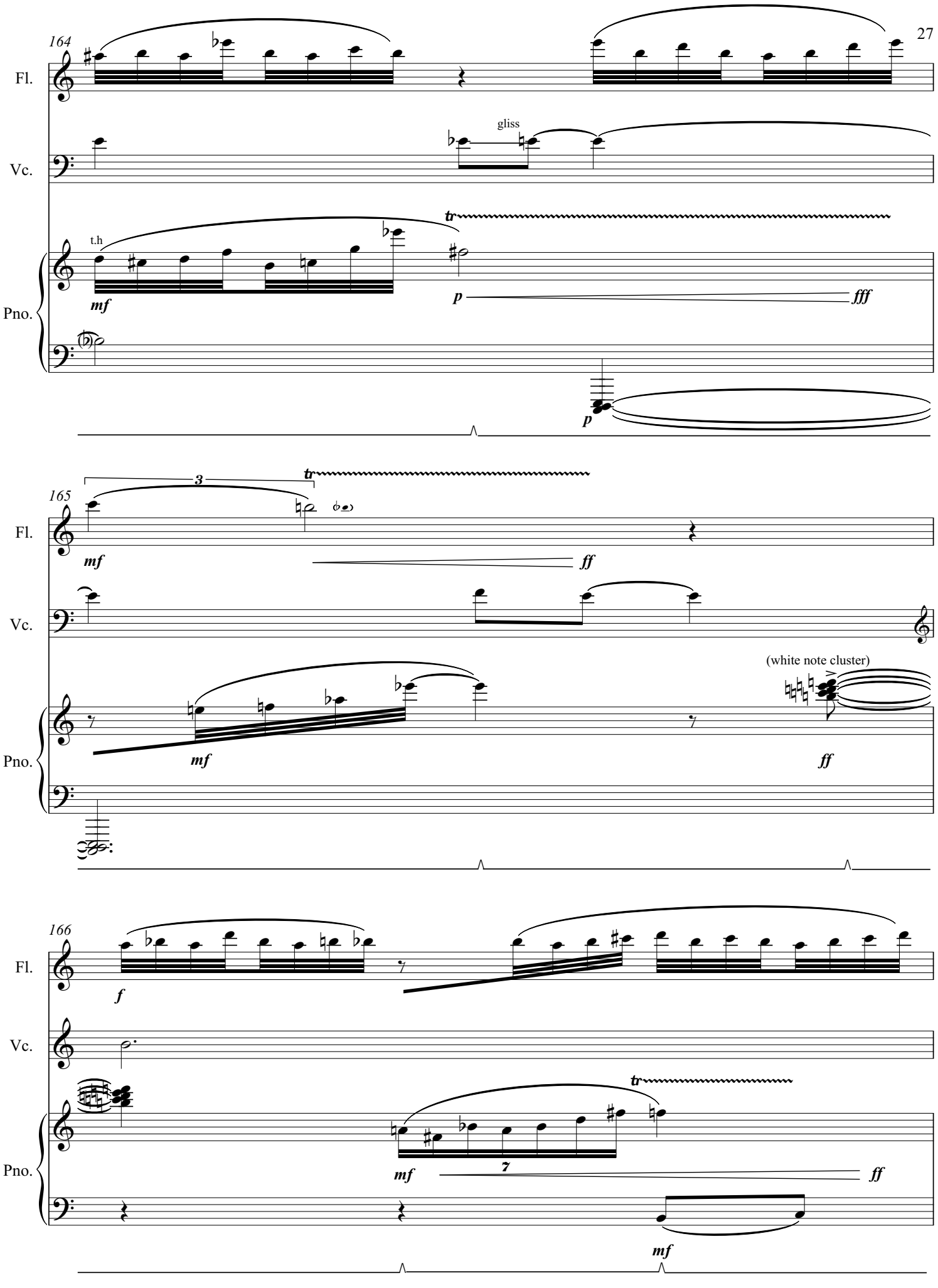
mf 7 ff f 5 fff

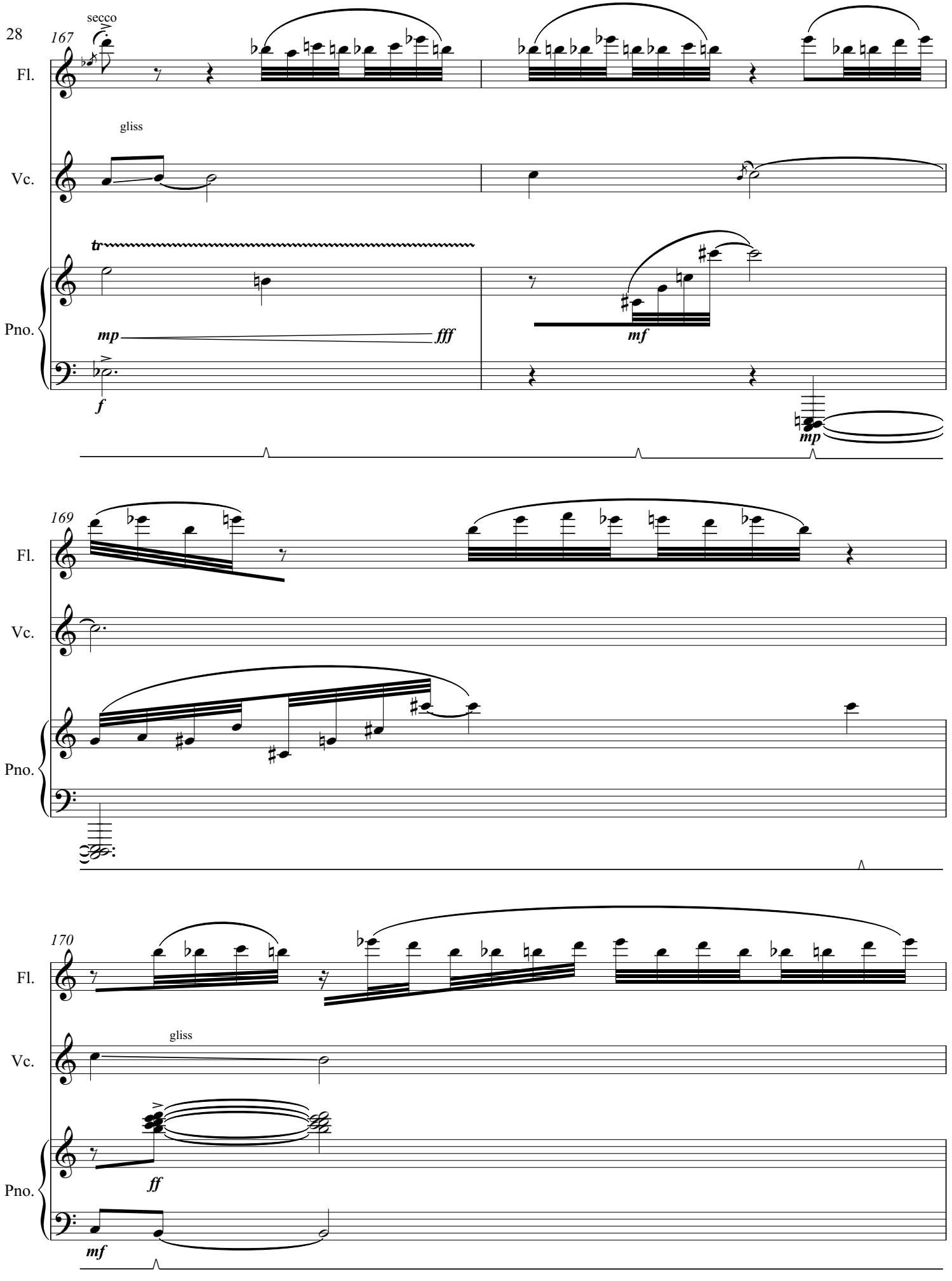
f

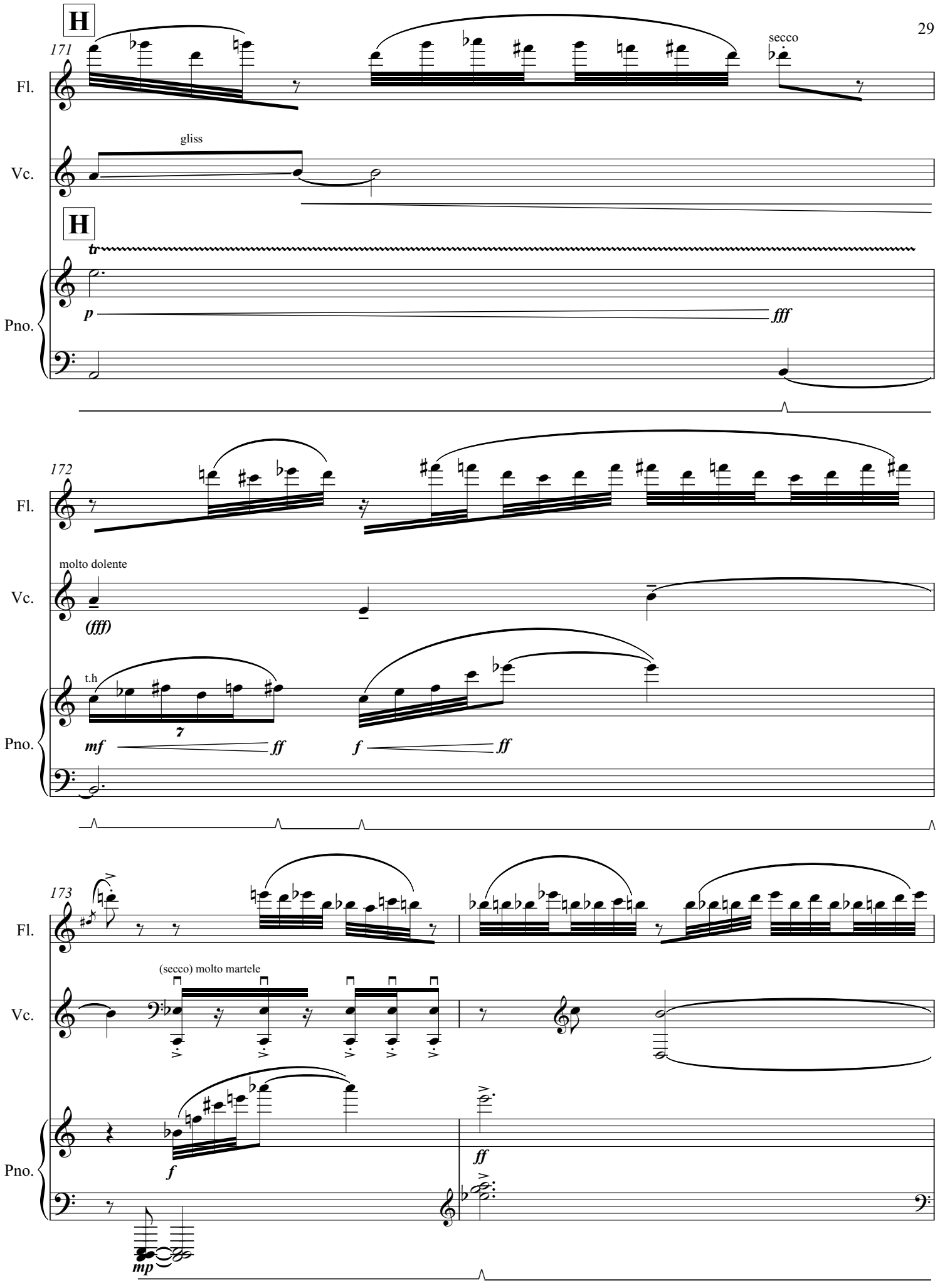
Ped.

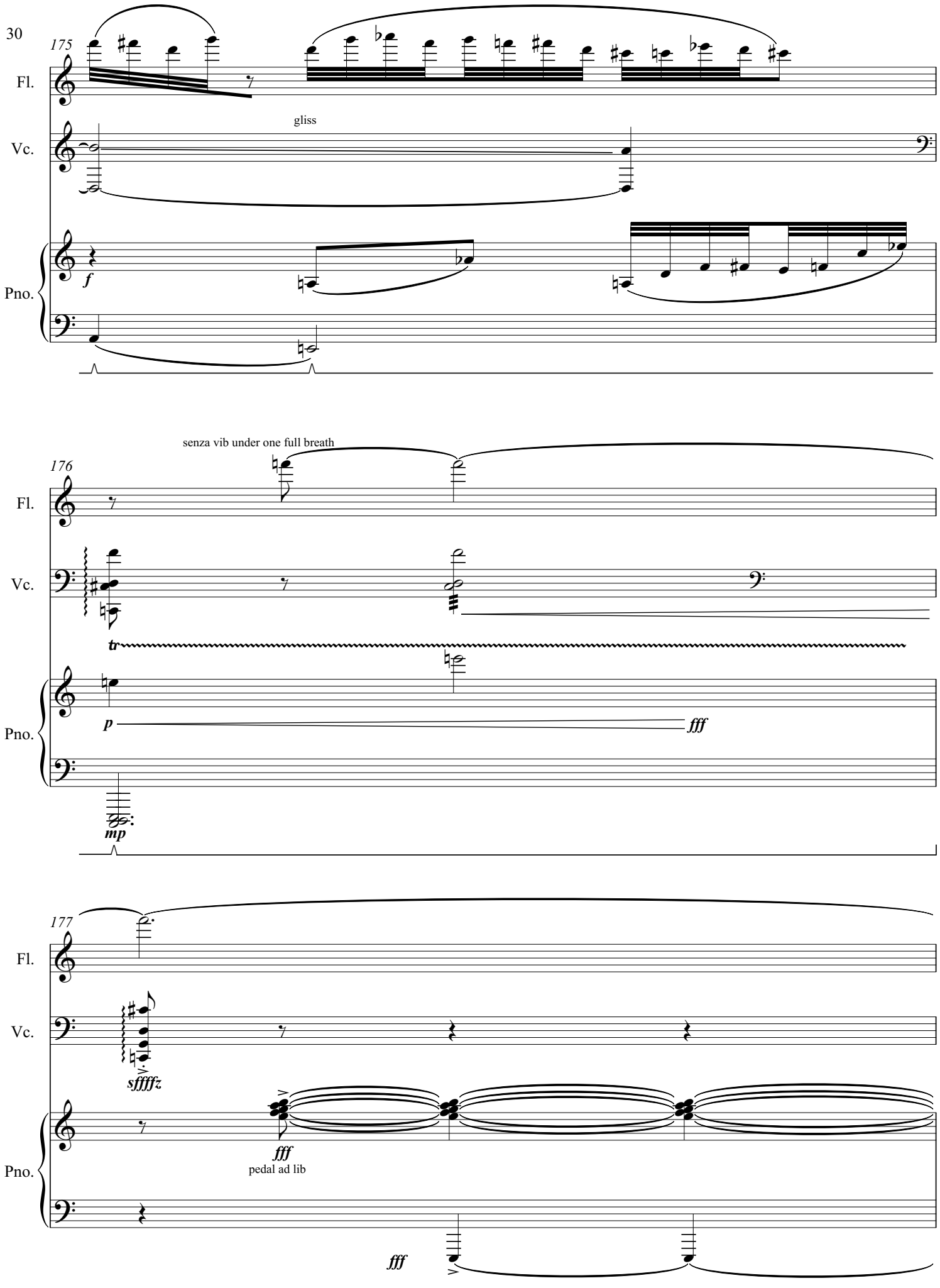

157
Fl.
gliss
Vc.
ff
Pno.
f
Ped.
molto furioso sempre (breaths should be taken under the rests as much as possible for legato)
159
Fl.
molto vib
Vc.
Pno.
160
Fl.
Vc.
tr
mp
7
ff
mp
Pno.
f
Ped.

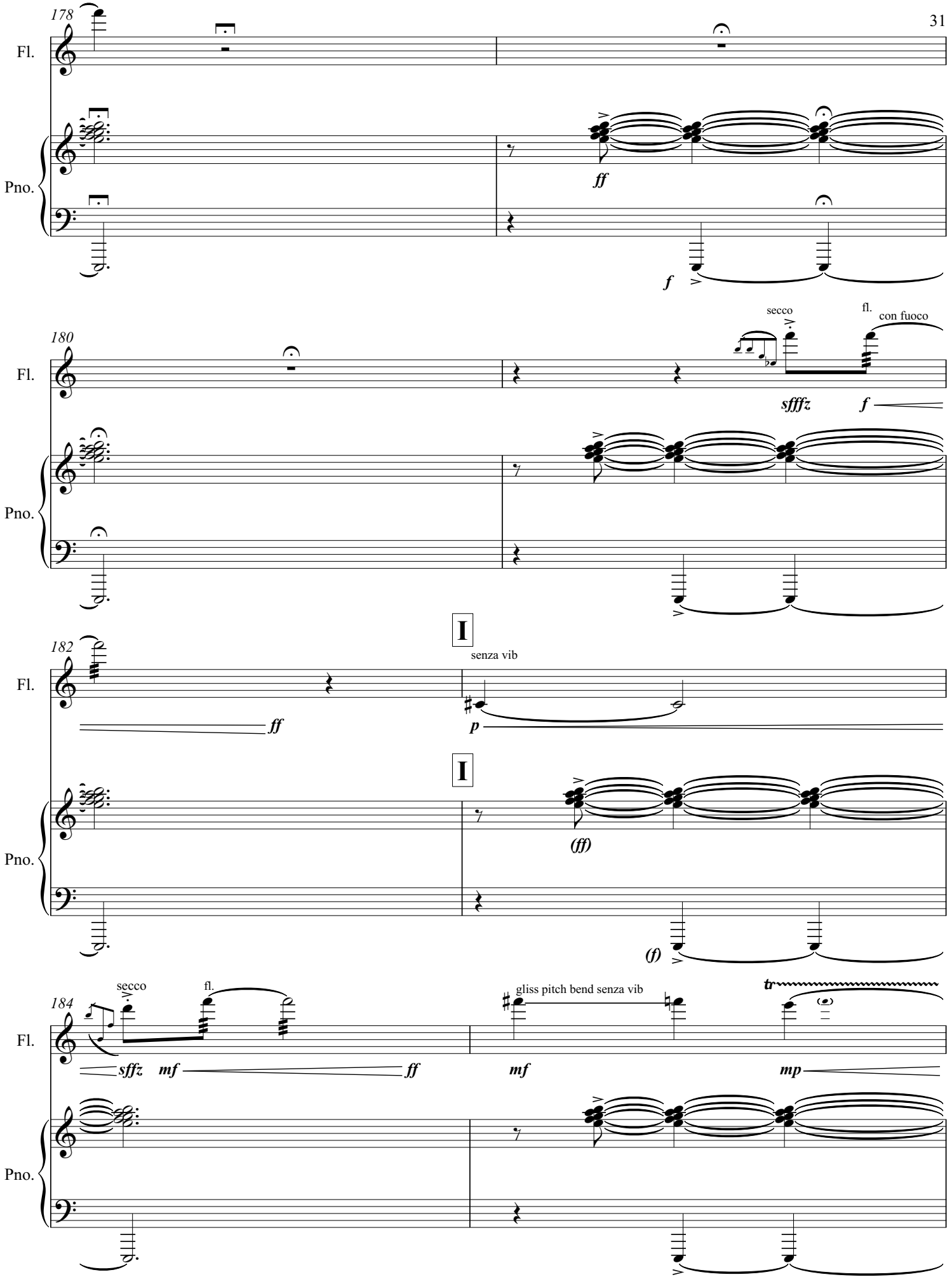

26
161
Fl.
molto martele secco
Vc.
(ff)
(tr)
ff
mf
7
Pno.
162
tr
Fl.
mp
ff
ff
molto vib
gliss
Vc.
fff
mf
Pno.
mp
Ped.
pizz
163
Fl.
sffffz
ff
Vc.
tr
Pno.
p
fff
f

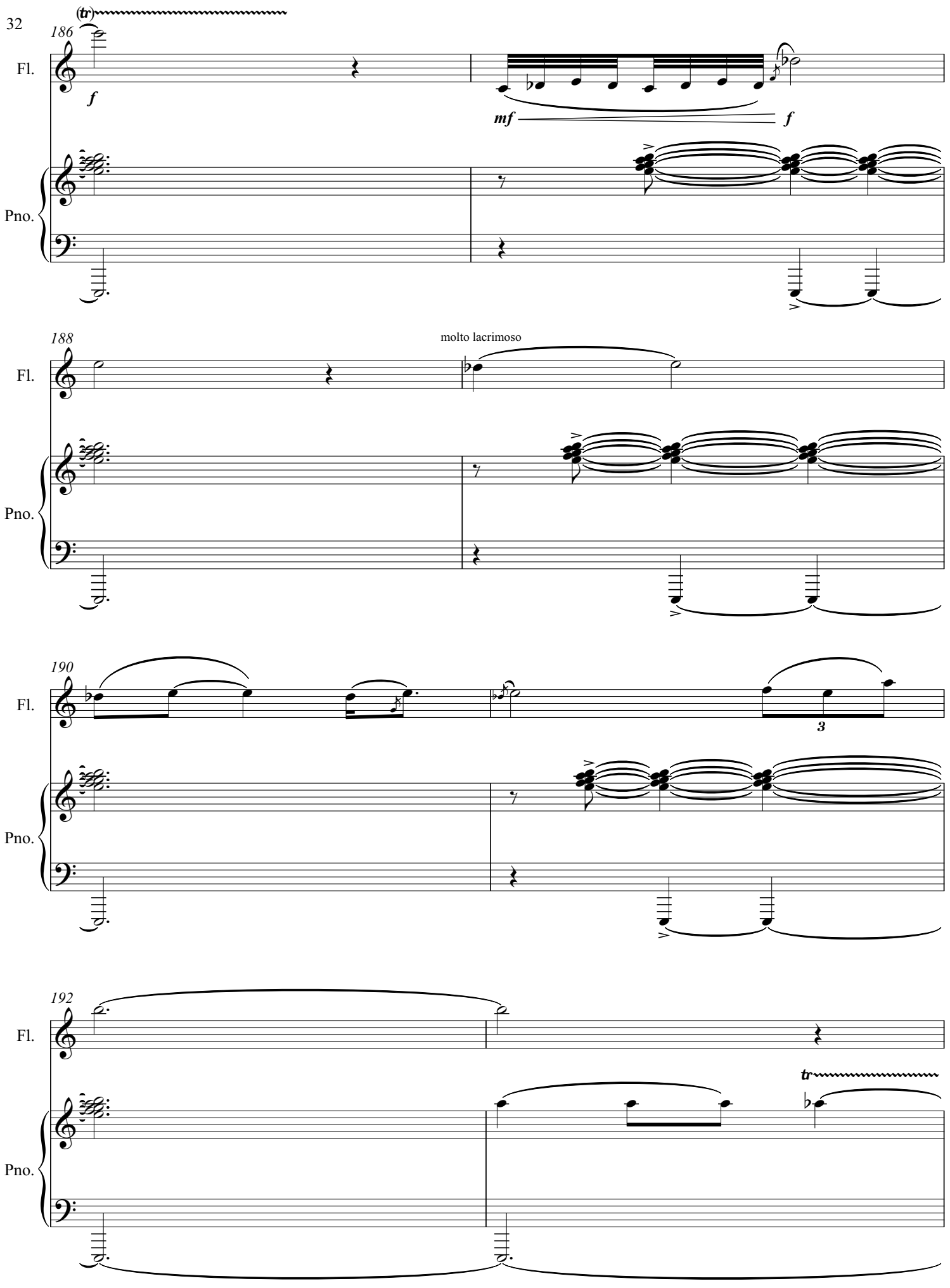

164
Fl.
Vc.
Pno.
gliss
t.h
tr
mf
p
fff
p
165
3
tr
mf
ff
(white note cluster)
mf
ff
166
f
tr
mf
7
ff
mf

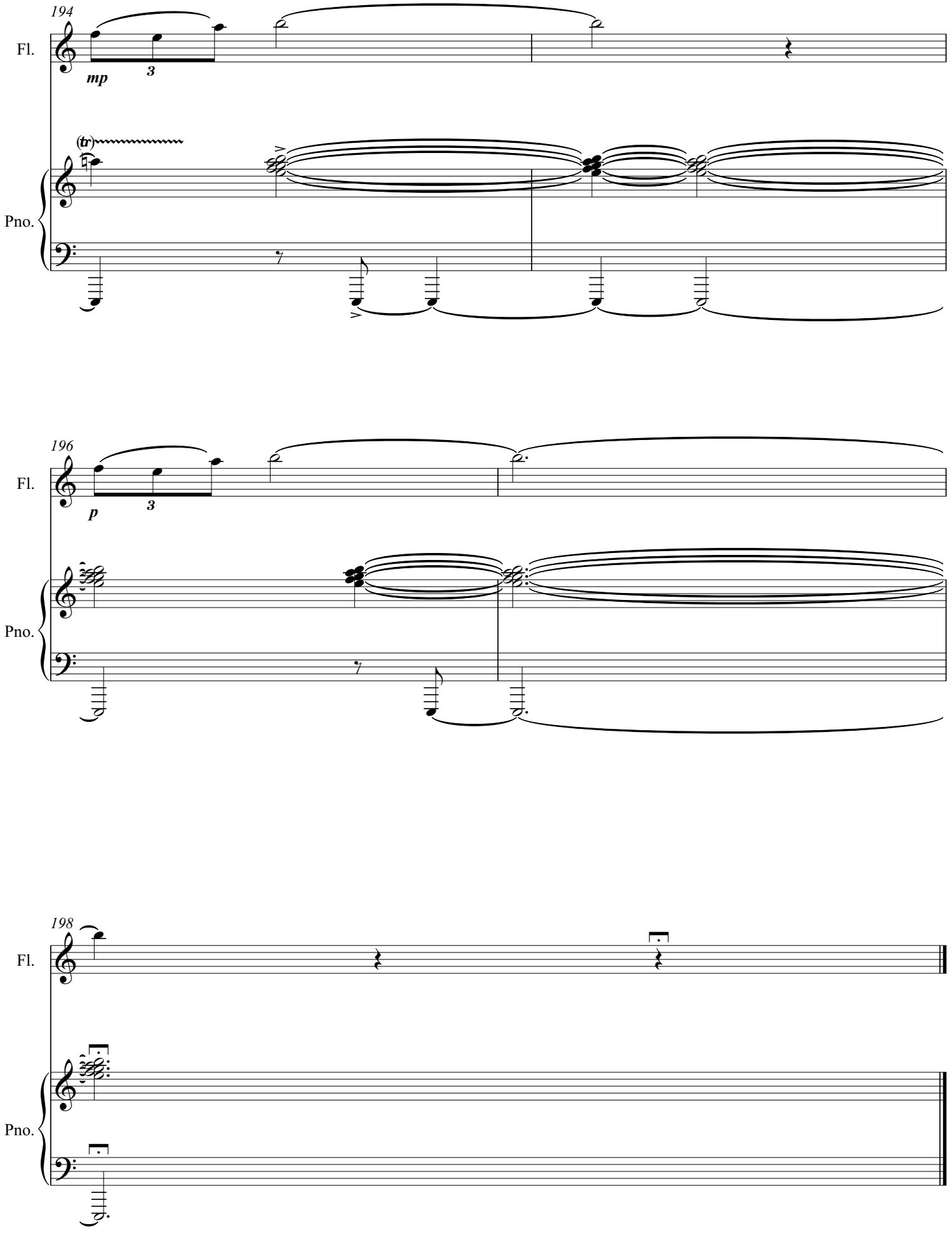

167
secco
Fl.
gliss
Vc.
tr
Pno.
mp
fff
f
mf
mp
169
Fl.
Vc.
Pno.
170
Fl.
gliss
Vc.
ff
Pno.
mf


H
171
Fl.
secco
gliss
Vc.
H
tr
Pno.
p
fff
172
Fl.
molto dolente
Vc.
(fff)
t.h
7
Pno.
mf
ff
f
ff
173
Fl.
(secco) molto martele
Vc.
Pno.
f
ff
mp


175
Fl.
Vc.
gliss
Pno.
f
176
senza vib under one full breath
Fl.
Vc.
tr
p
fff
Pno.
mp
177
Fl.
Vc.
sfffffz
Pno.
fff
pedal ad lib
fff


178
Fl.
Pno.
ff
f
180
secco
fl.
con fuoco
sffz
f
182
I
senza vib
ff
p
(ff)
(f)
184
secco
fl.
gliss pitch bend senza vib
tr
sffz
mf
ff
mf
mp


186
(tr)
Fl.
f
mf
f
Pno.
188
molto lacrimoso
Fl.
Pno.
190
Fl.
3
Pno.
192
Fl.
tr
Pno.


194
Fl.
mp
3
(tr)
Pno.
196
Fl.
p
3
Pno.
198
Fl.
Pno.