ABSTRACT

Title of Document: STRING QUARTET

Jacob Abraham Polasky, DMA, 2012

Directed By: Dr. Lawrence Moss, Music Theory/Composition

This is a String Quartet in three movements. It is an example of the use of set theory and combinatorial analysis in music composition. Harmony is created by the combination of four-tone sets into eight-tone sets. Contrapuntal devices, such as the arrangement of set elements to create maximum intervallic variety are explored in the second movement. This movement is also the focus of a complex pattern based on eight tone sets. Five of the tones are used regularly, while the other three tones are used to disrupt a sense of regularity.

STRING QUARTET

By

Jacob Abraham Polasky

Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
Doctor of Musical Arts
2012

Advisory Committee:

Dr. Lawrence, Moss, Chair
Dr. Thomas DeLio
Dr. James Fry
Dr. Daniel Zimmerman
Dr. Jerrold Levinson

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2012

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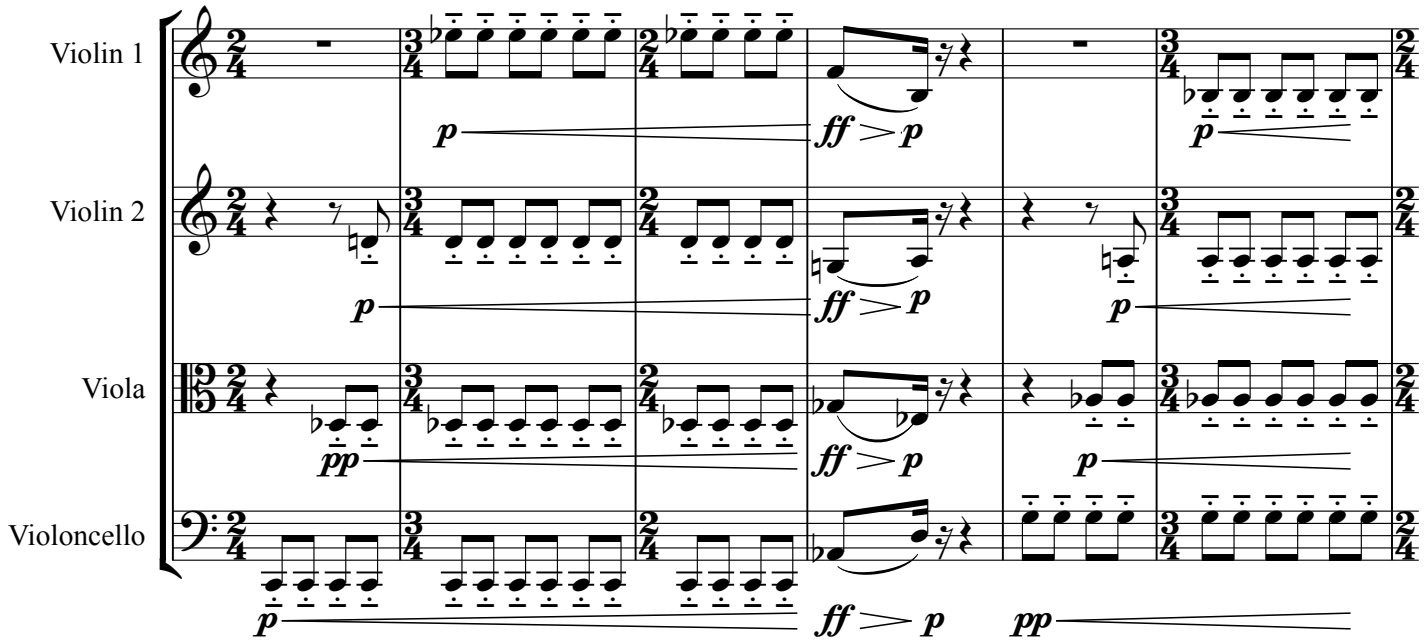
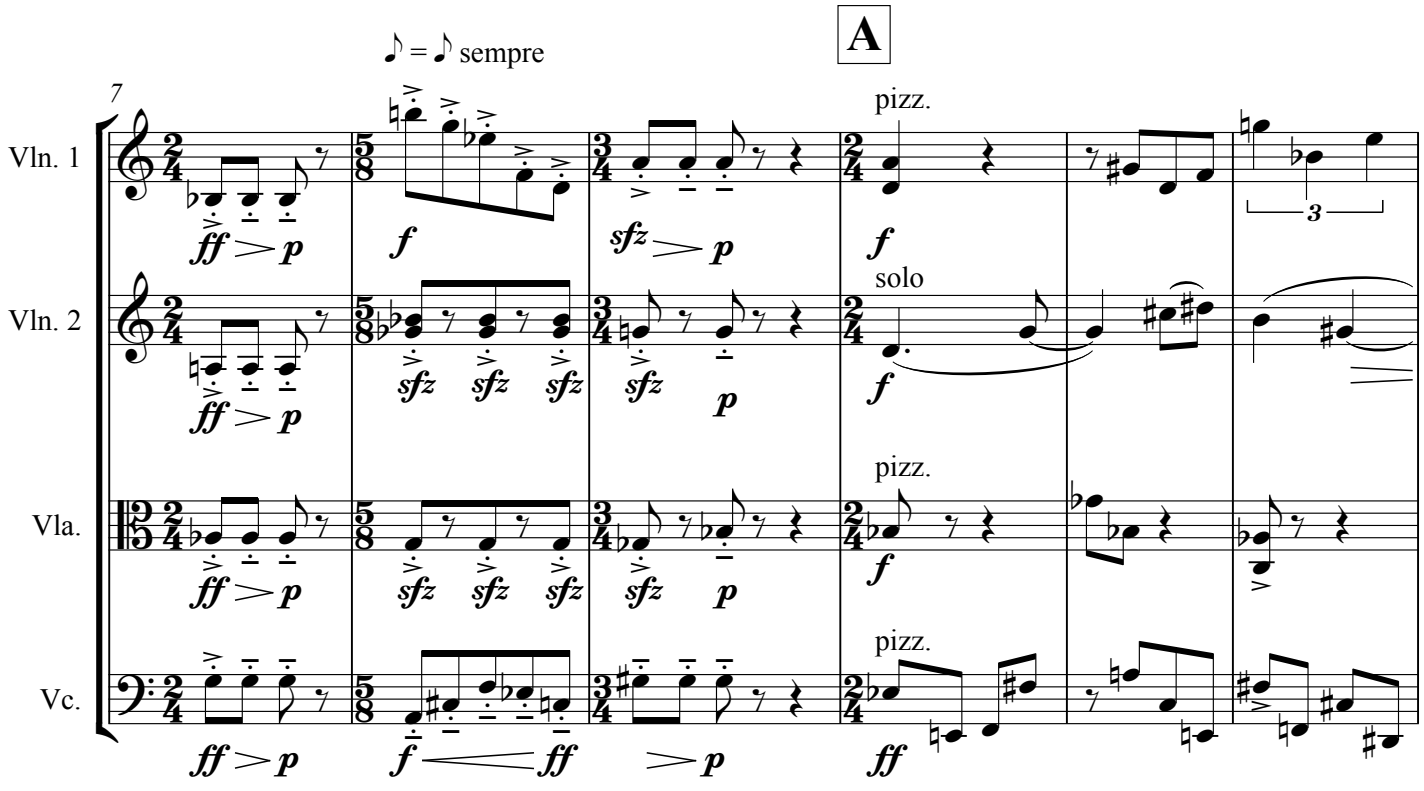
String Quartet No. 1

Jacob Polasky

Allegro ♩ = 120





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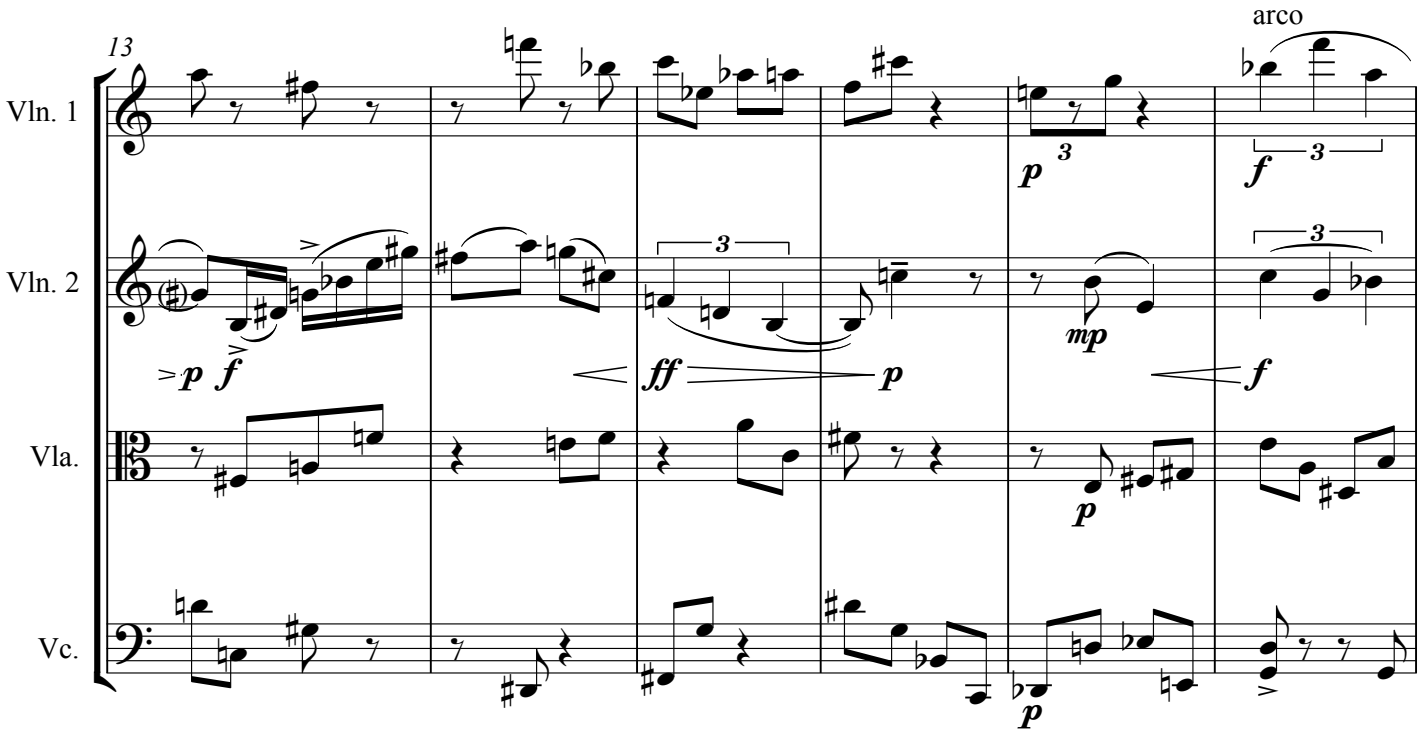
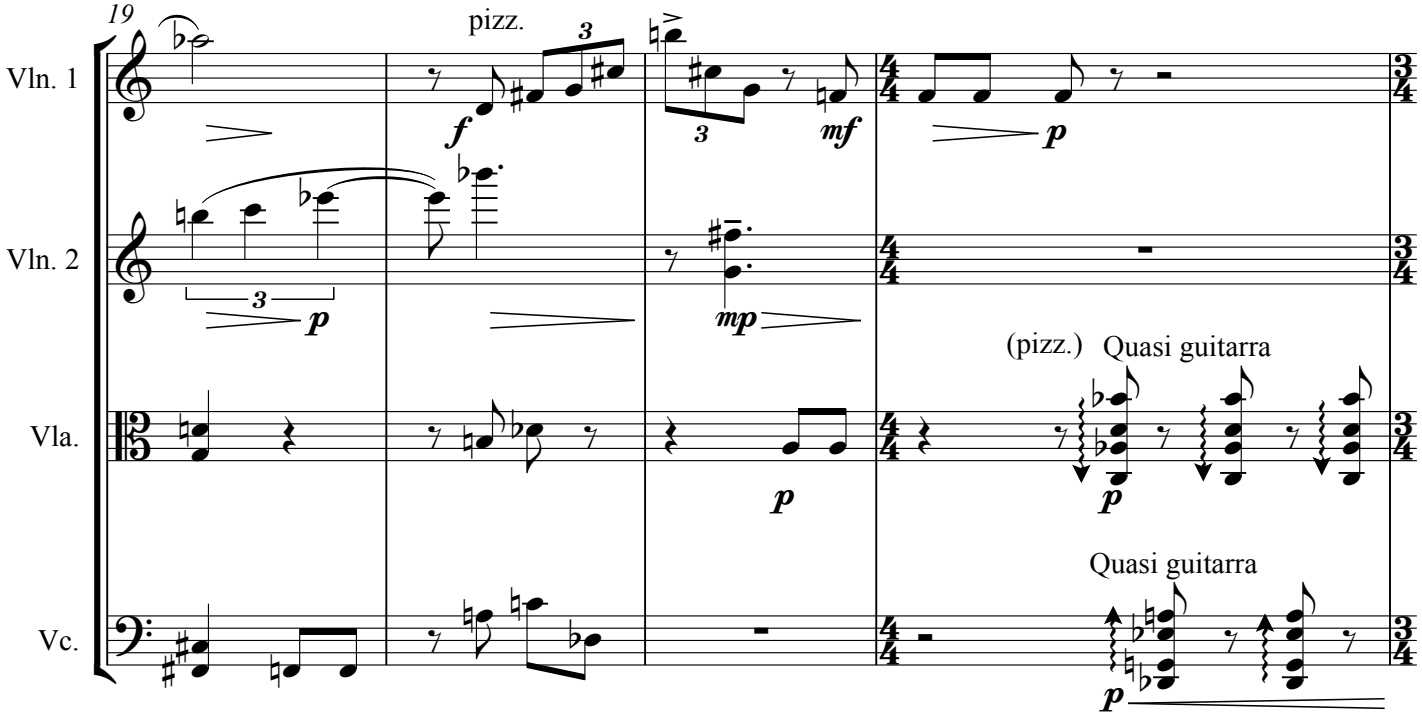
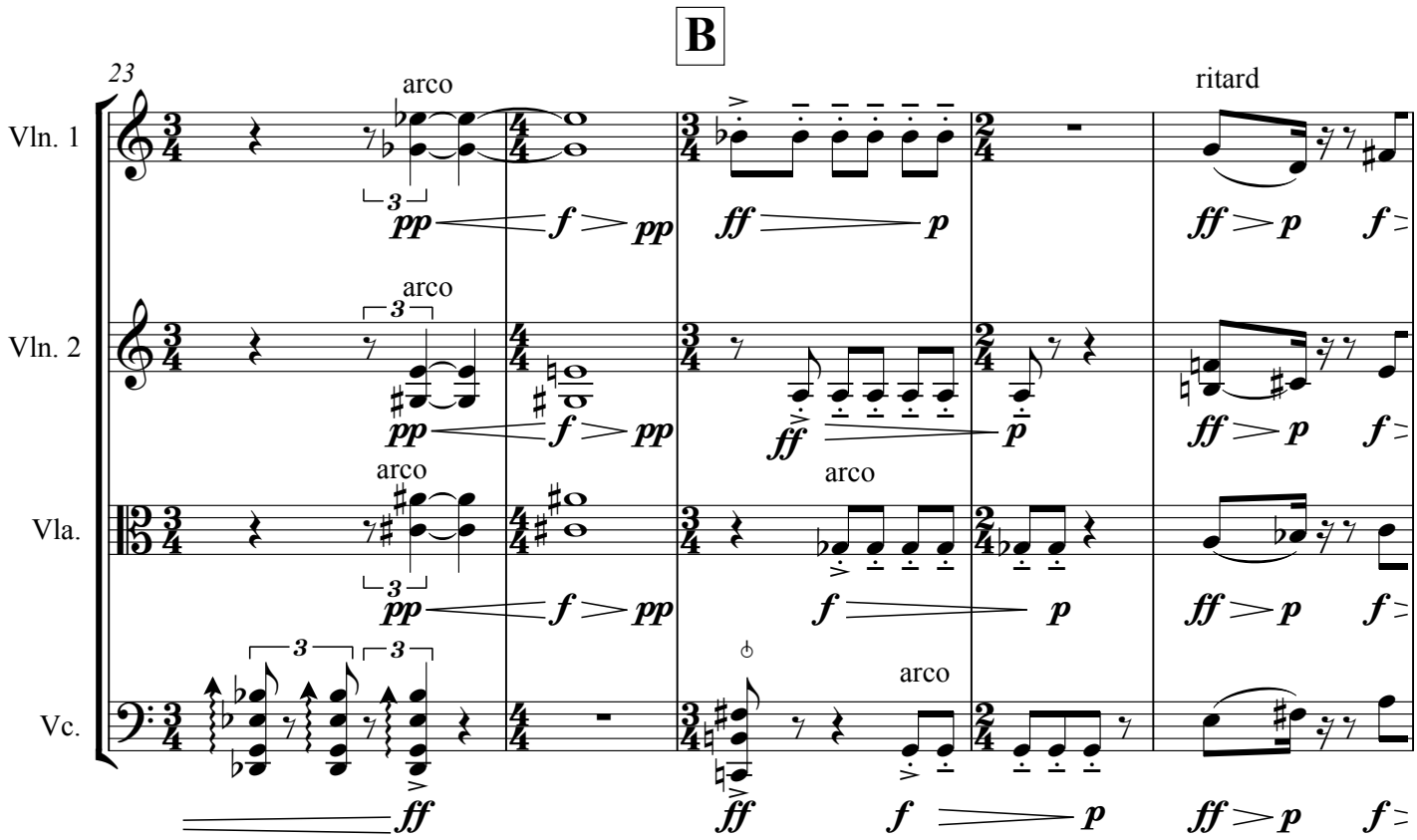
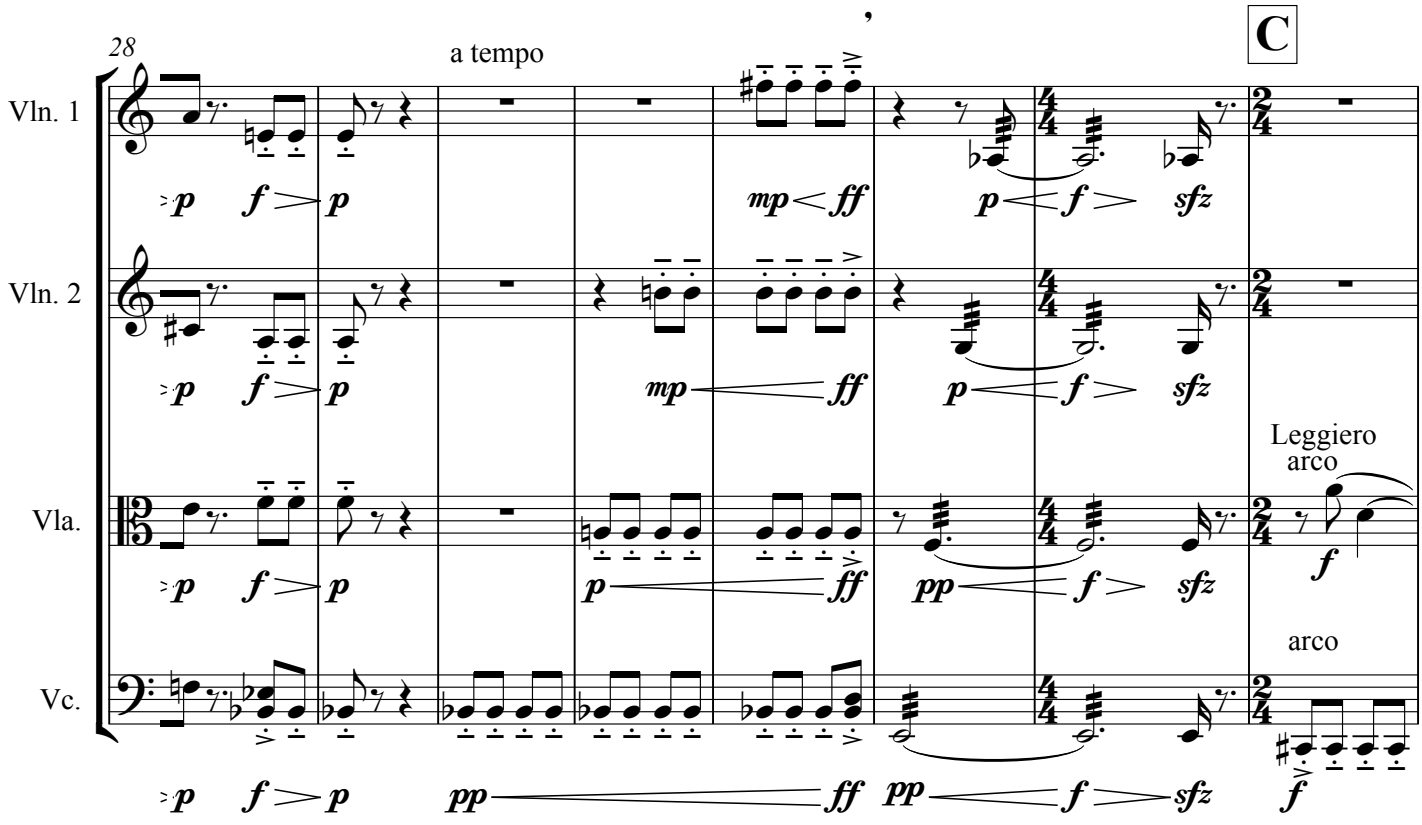
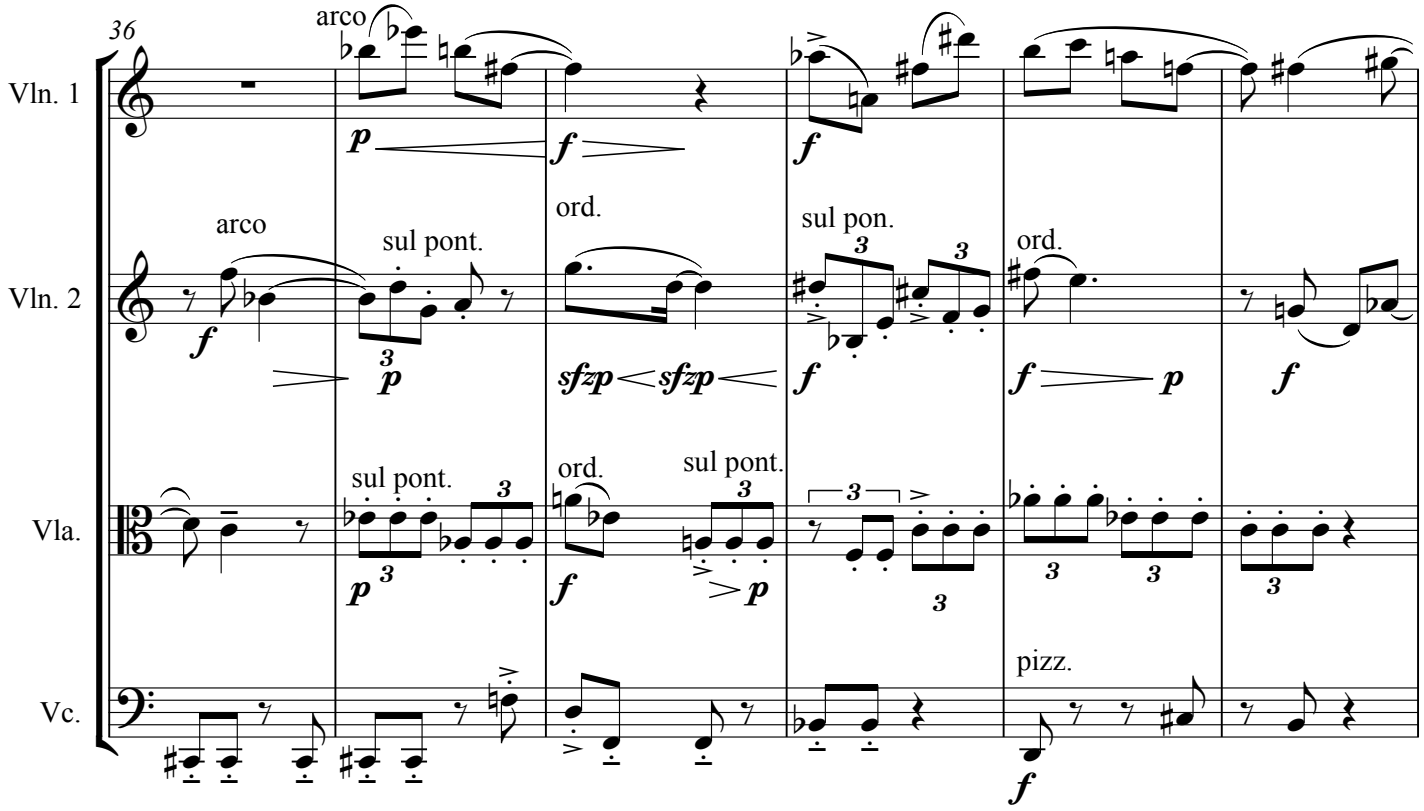
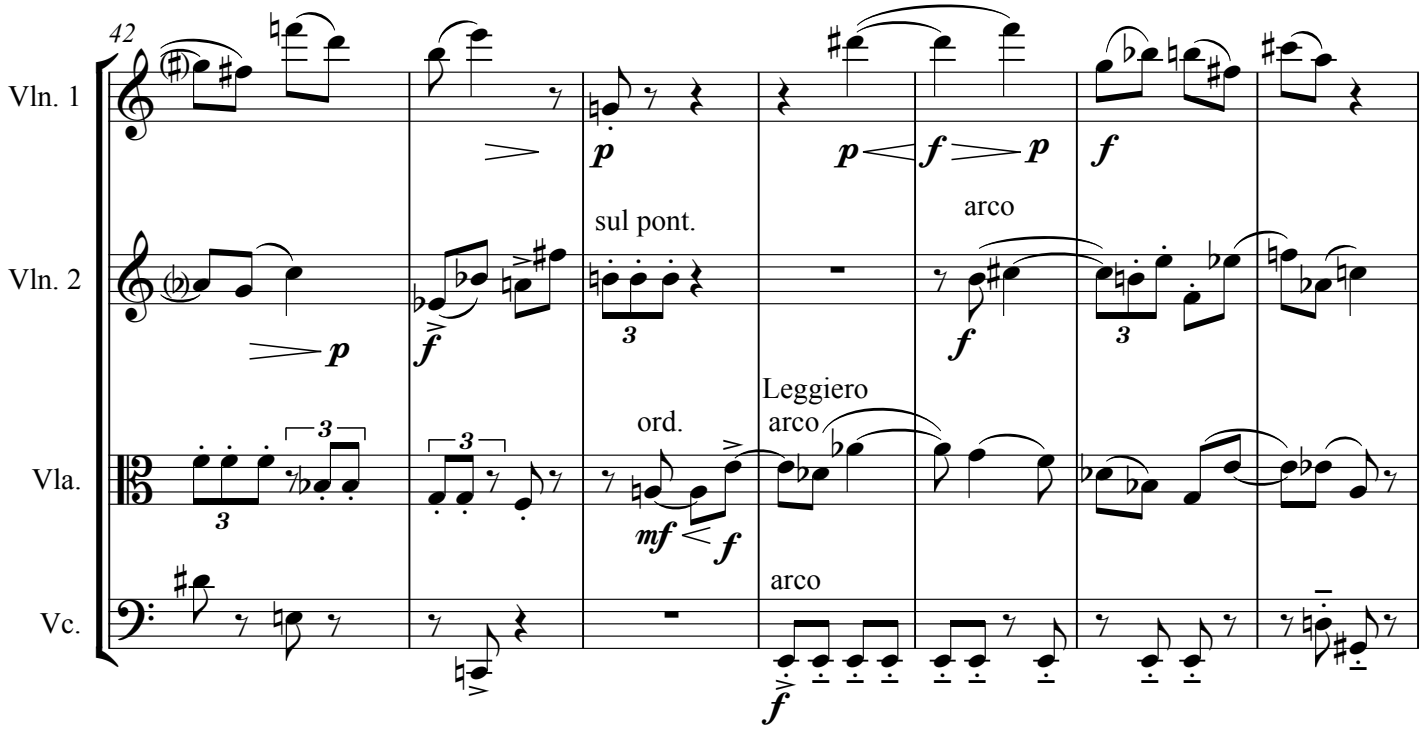

13
arco
Vln. 1
Vln. 2
Vla.
Vc.

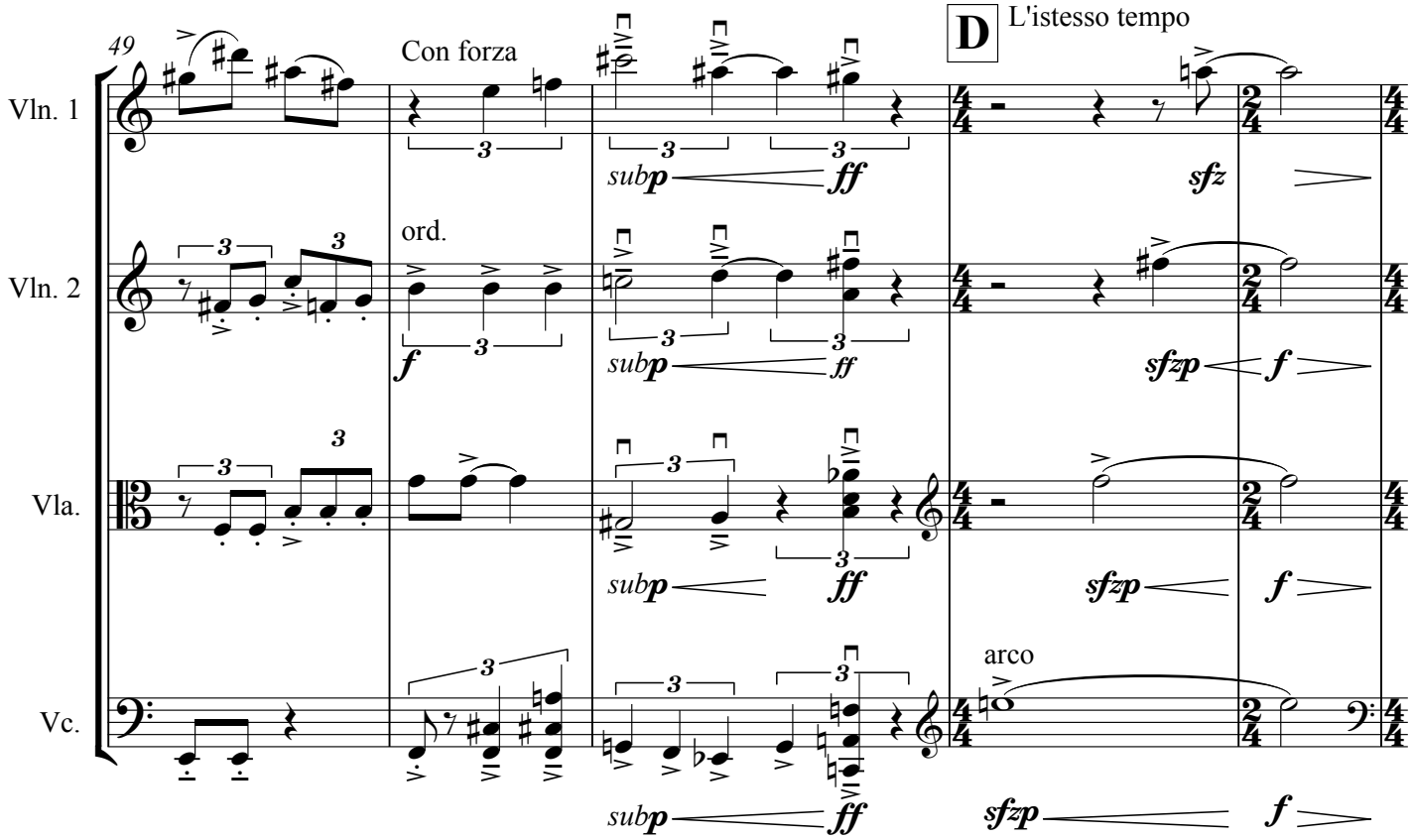

19
pizz.
(pizz.) Quasi guitarra
Quasi guitarra
Vln. 1
Vln. 2
Vla.
Vc.

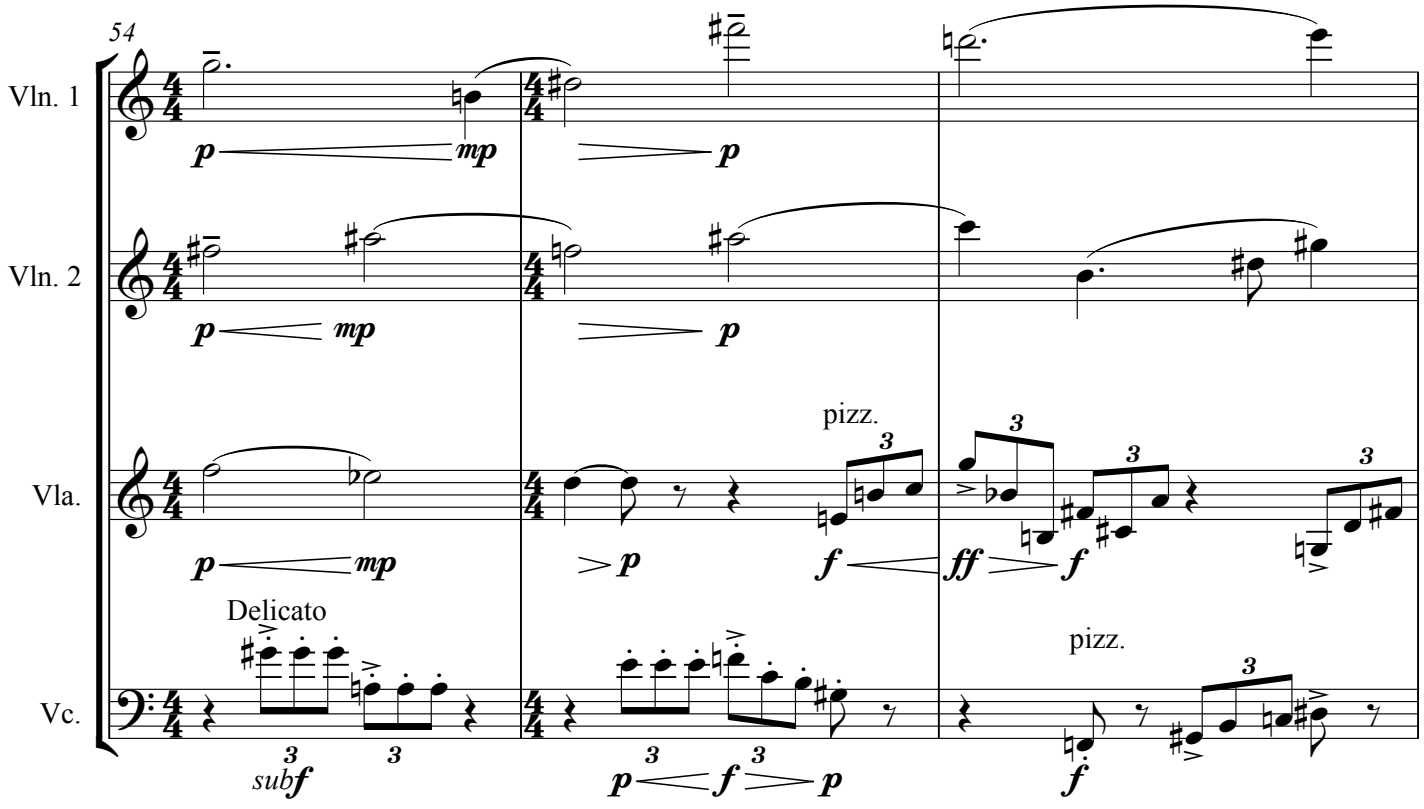

B
23
Vln. 1
Vln. 2
Vla.
Vc.
arco
ritard
pp
f
ff
p

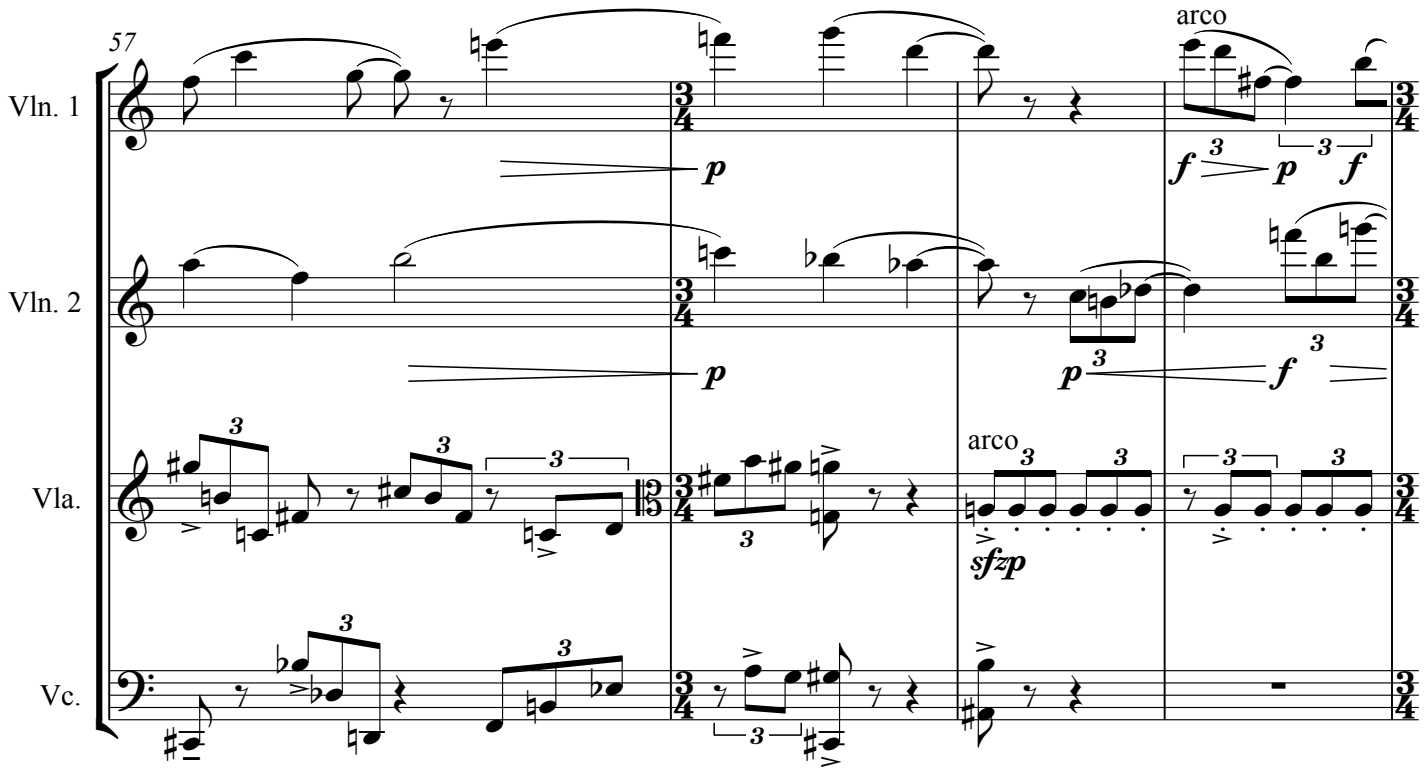

C
28
Vln. 1
Vln. 2
Vla.
Vc.
a tempo
Leggiero
arco
mp
sfz
pp


36
Vln. 1
Vln. 2
Vla.
Vc.
arco
sul pont.
ord.
sul pon.
pizz.


42
Vln. 1
Vln. 2
Vla.
Vc.
sul pont.
arco
ord.
Leggiero
arco


49
Con forza
D
L'istesso tempo
Vln. 1
Vln. 2
Vla.
Vc.
ord.
arco
sub p
ff
sfz
sfzp
f


54
Vln. 1
Vln. 2
Vla.
Vc.
p
mp
pizz.
Delicato
sub f
ff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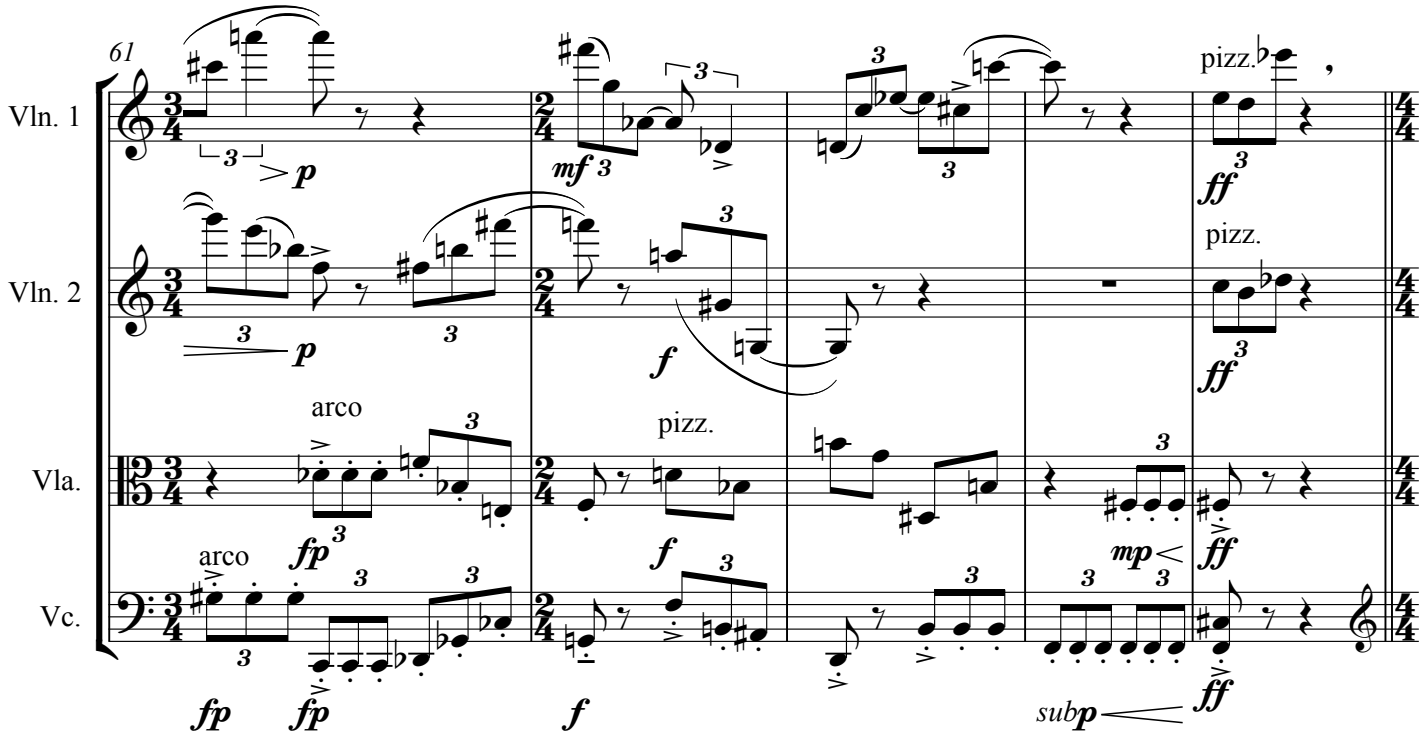
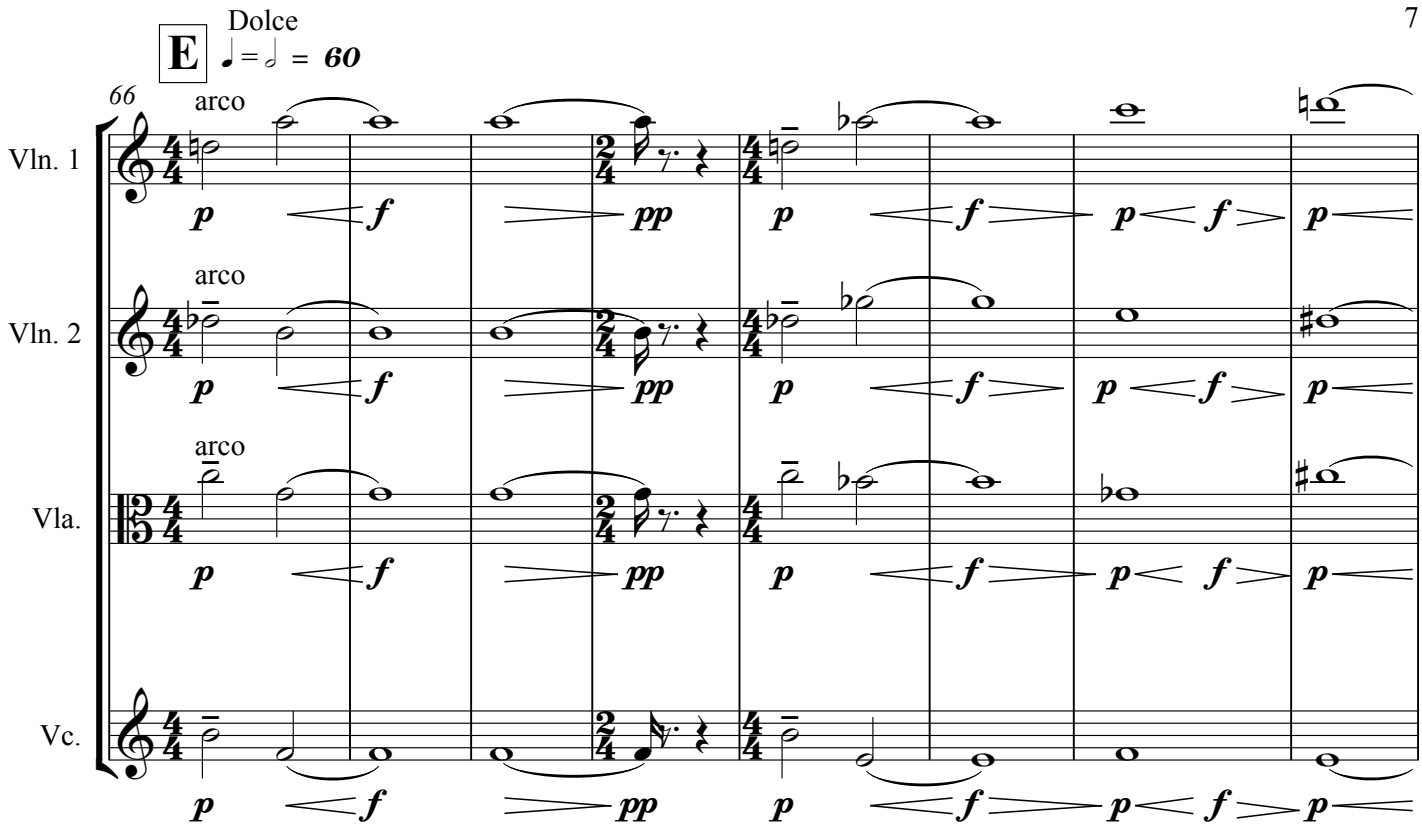
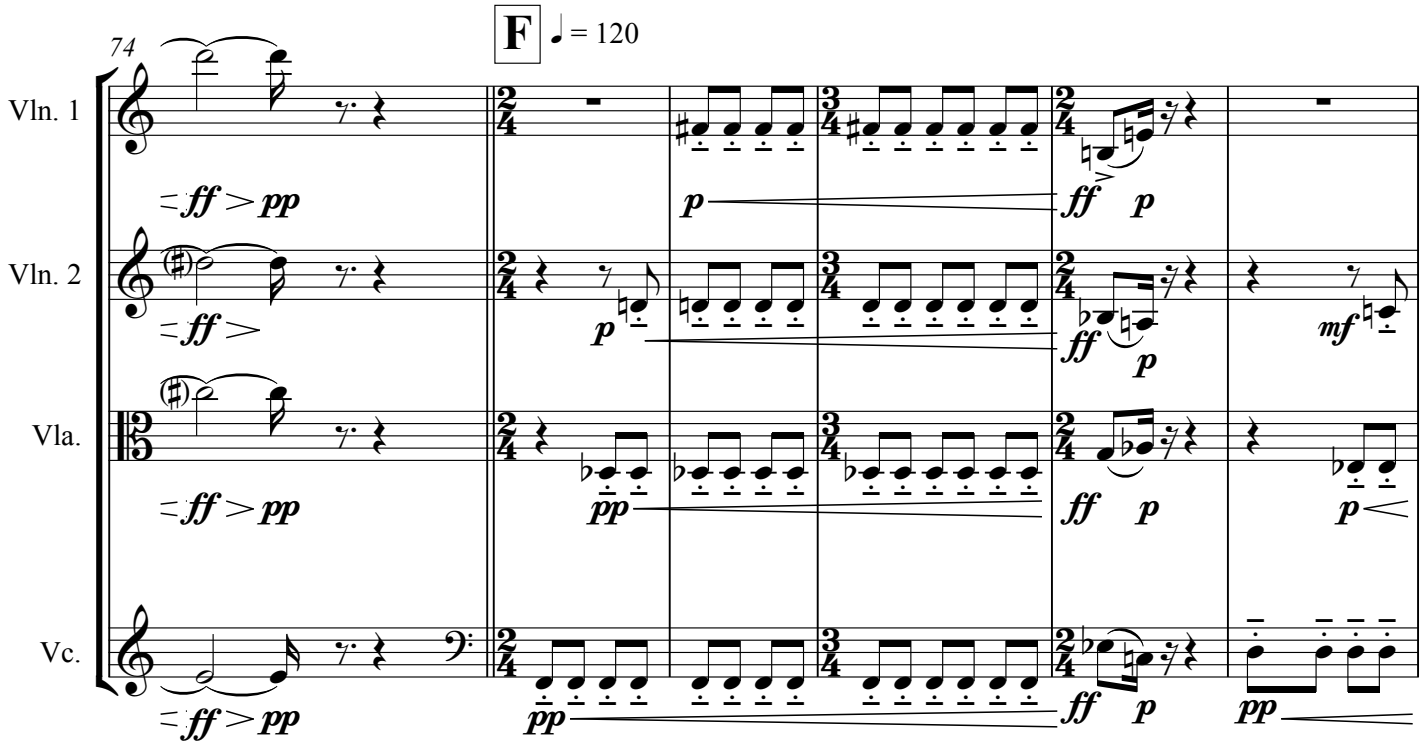
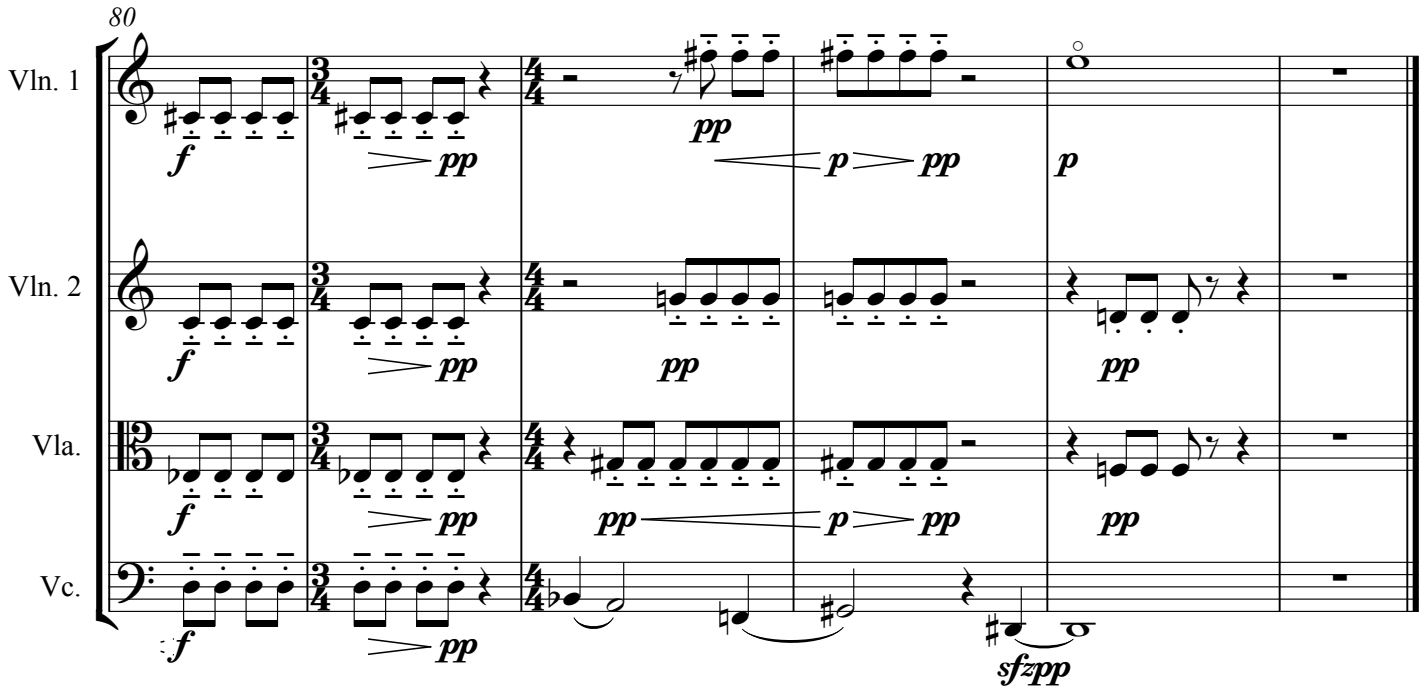
Vln. 1
Vln. 2
Vla.
Vc.
arco
arco
sfzp


61
Vln. 1
Vln. 2
Vla.
Vc.
pizz.
pizz.
arco
pizz.
arco
fp
fp
fp
f
f
mp
ff
ff
ff
subp


E
Dolce
♩ = ♩ = 60
66
arco
Vln. 1
Vln. 2
Vla.
Vc.
p
f
pp


F
♩ = 120
74
Vln. 1
Vln. 2
Vla.
Vc.
ff
pp
p
mf

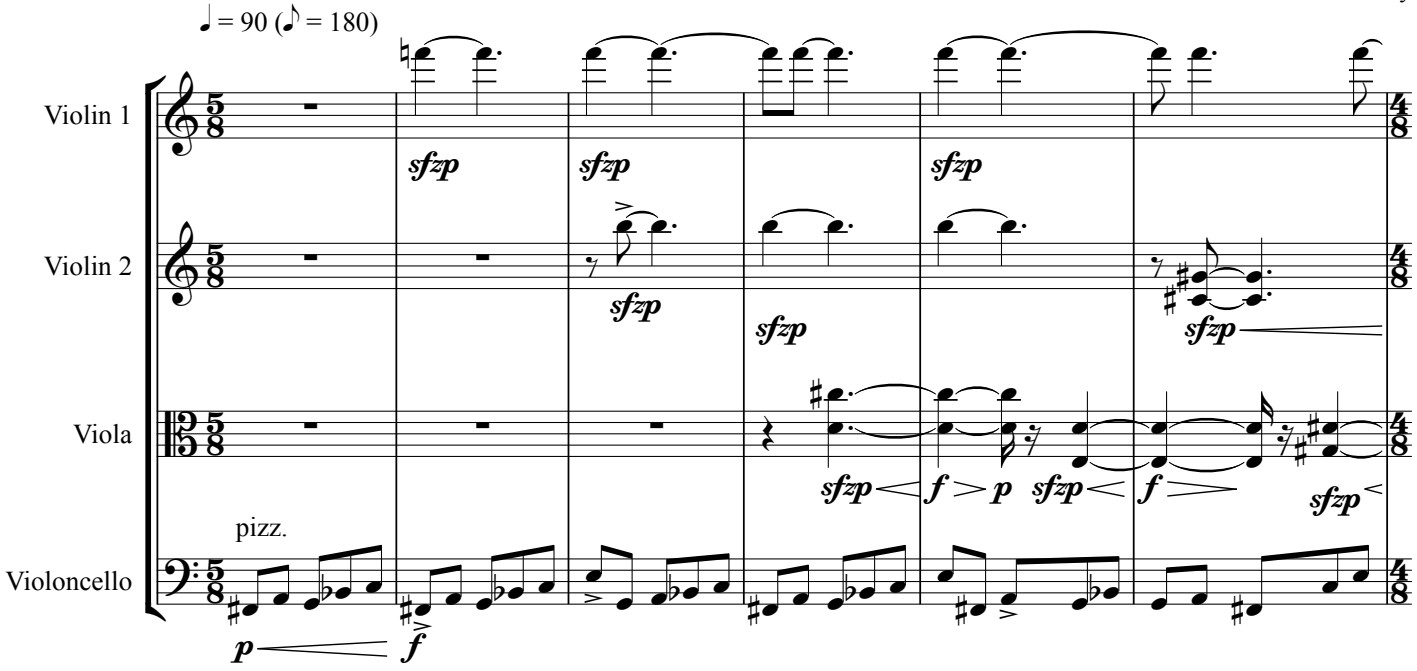

80
Vln. 1
Vln. 2
Vla.
Vc.
f
pp
p
sfzpp

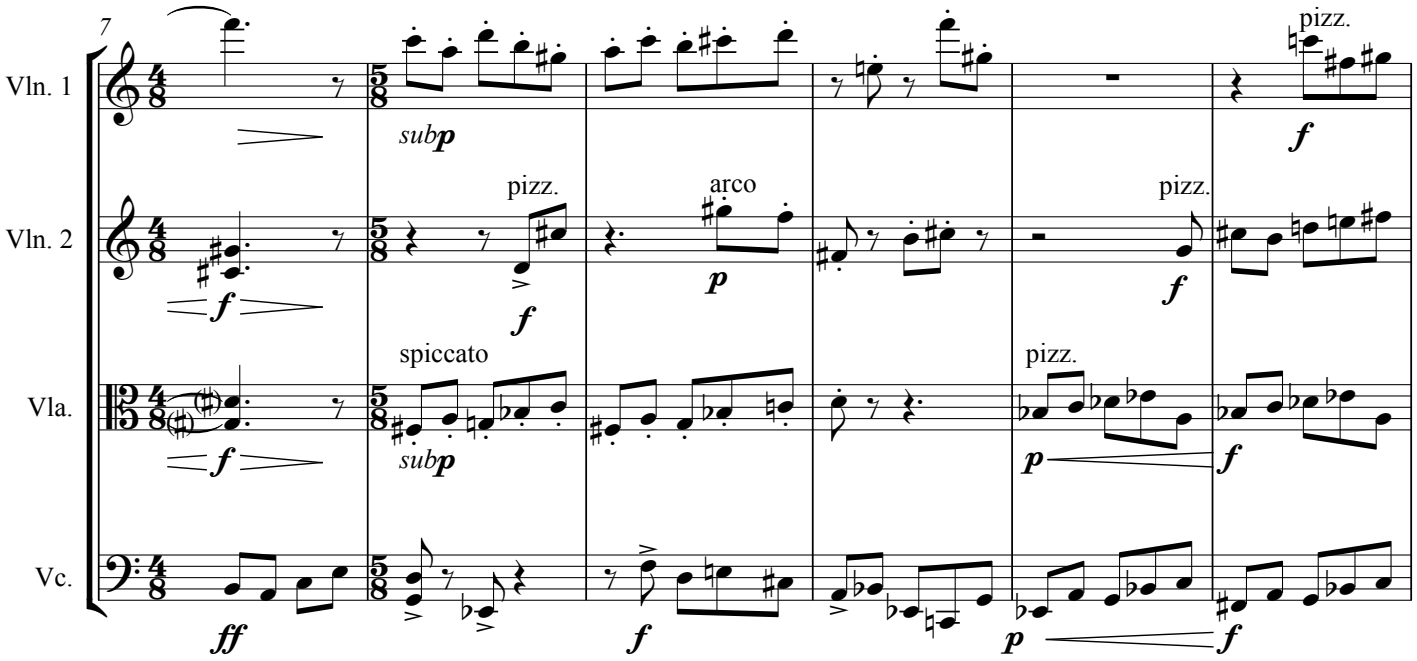
II

Giocoso con brio

Jacob Polasky

♩ = 90 (♪ = 180)





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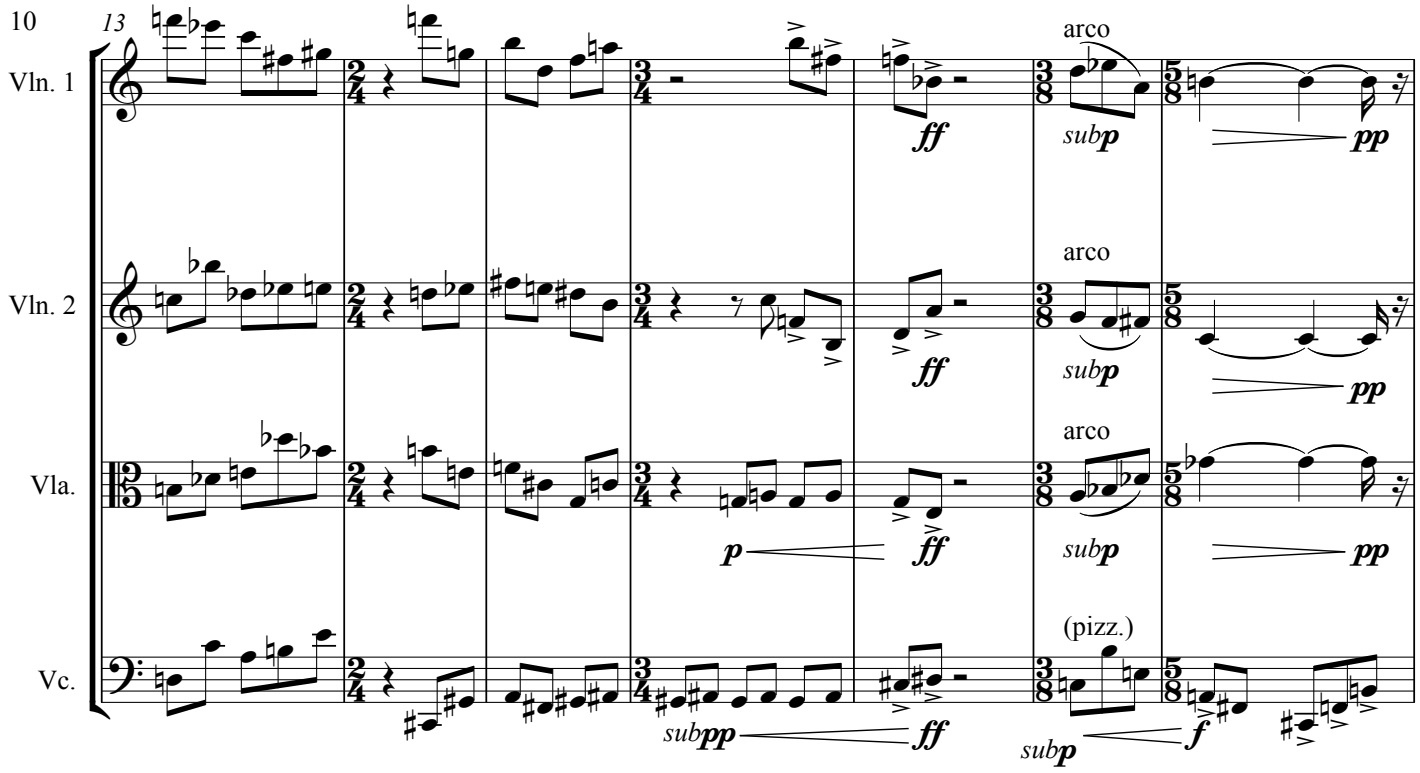
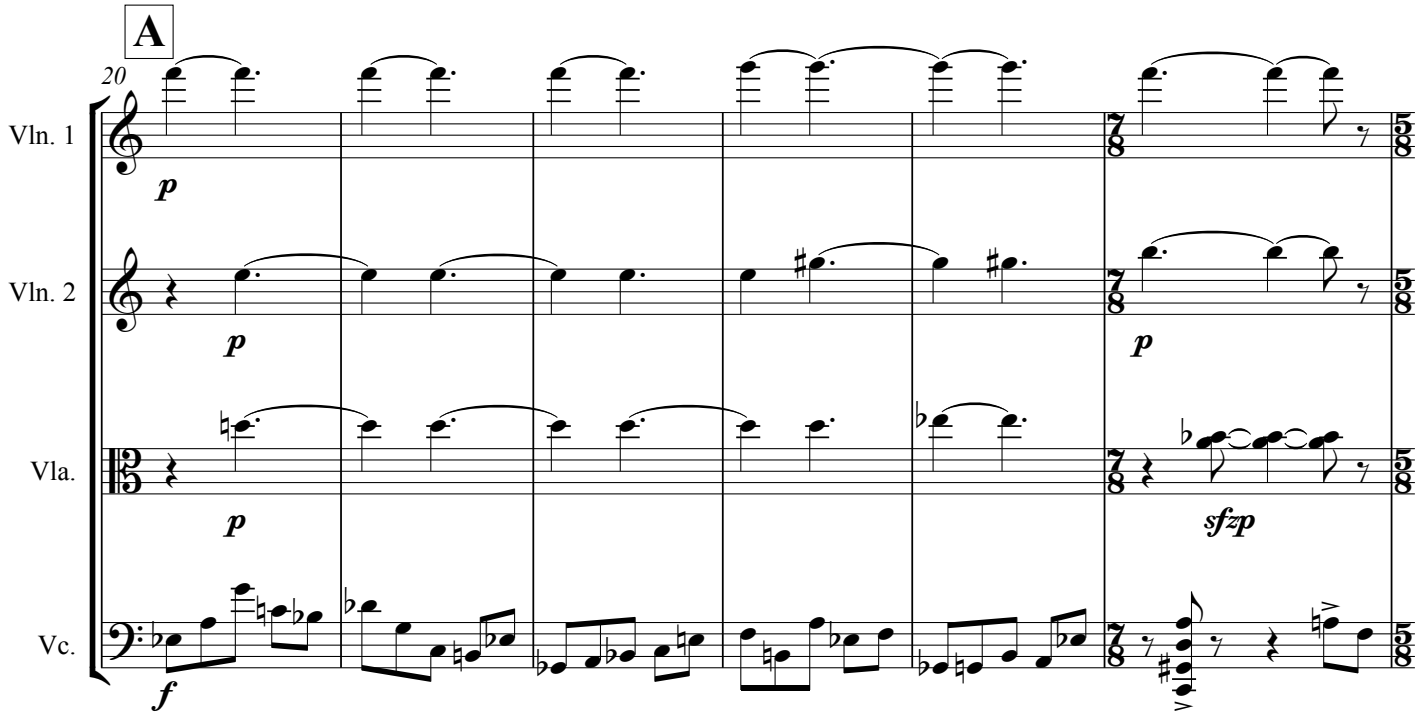
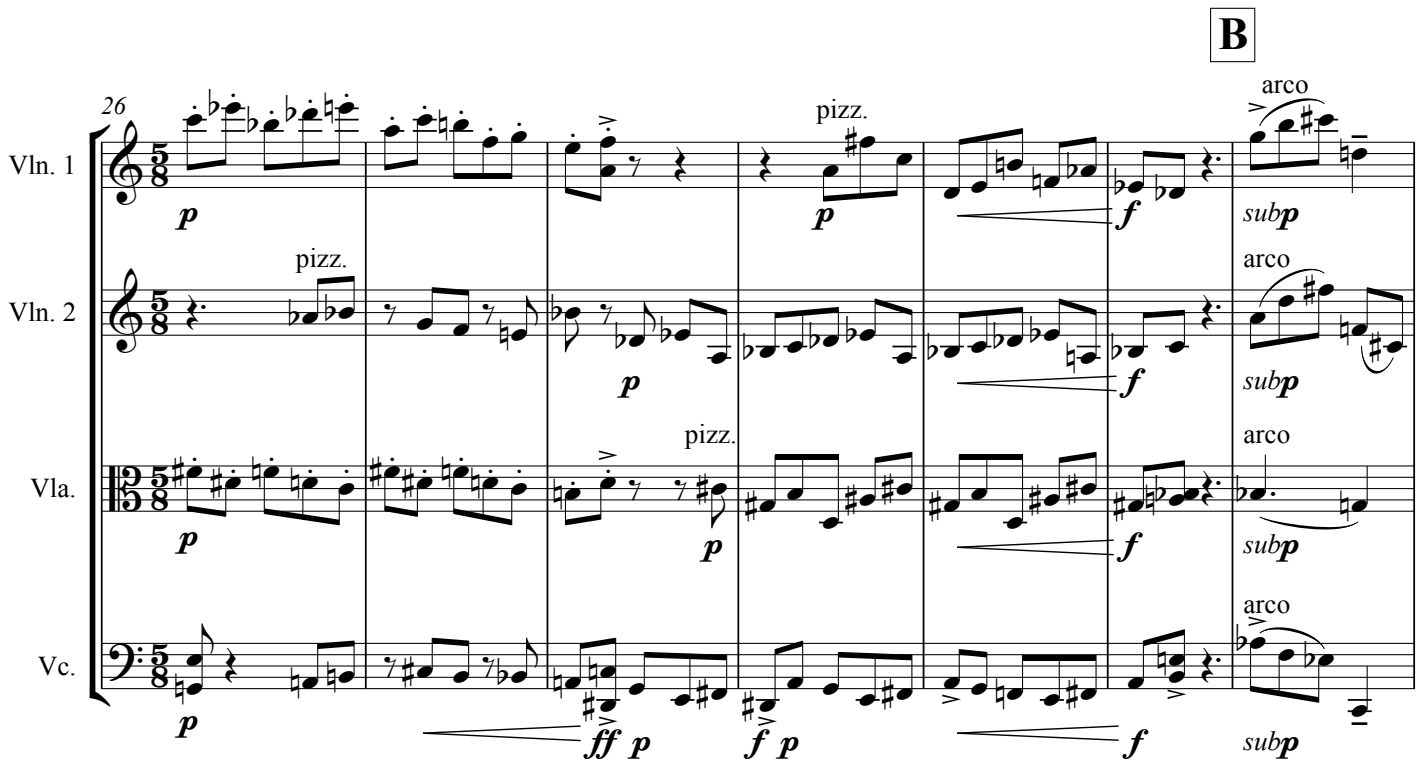
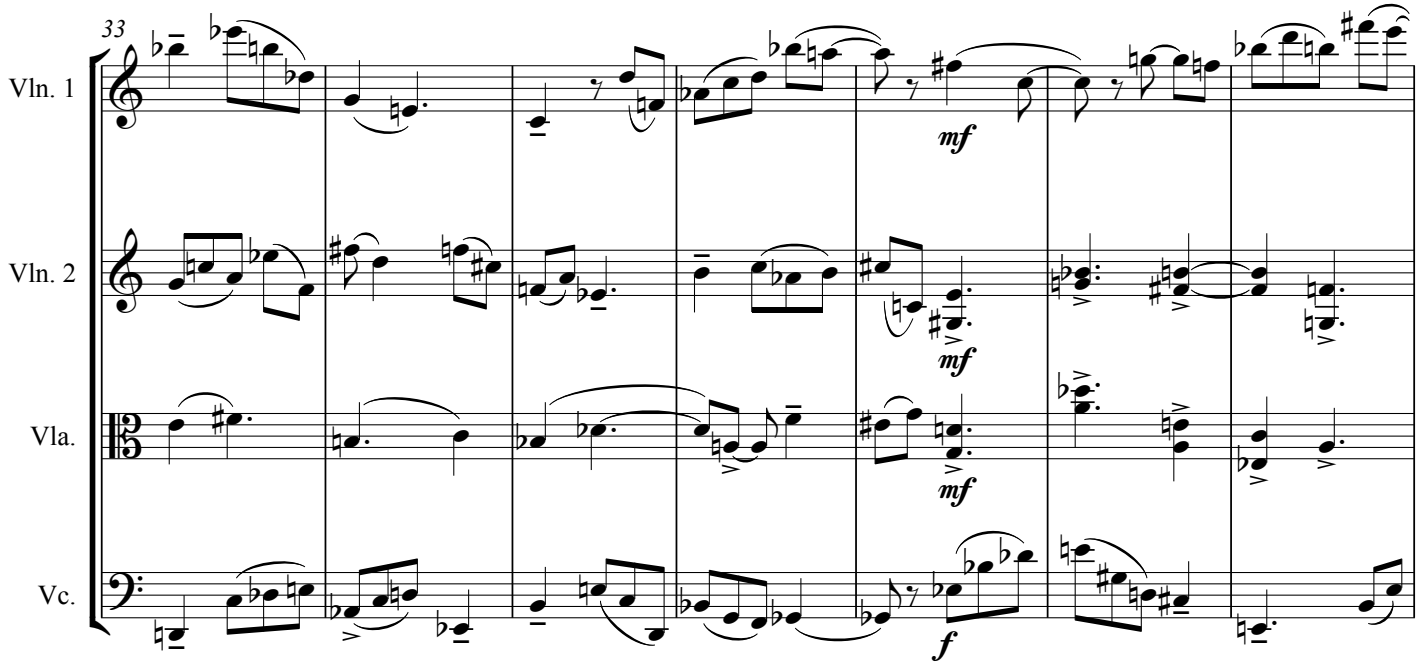
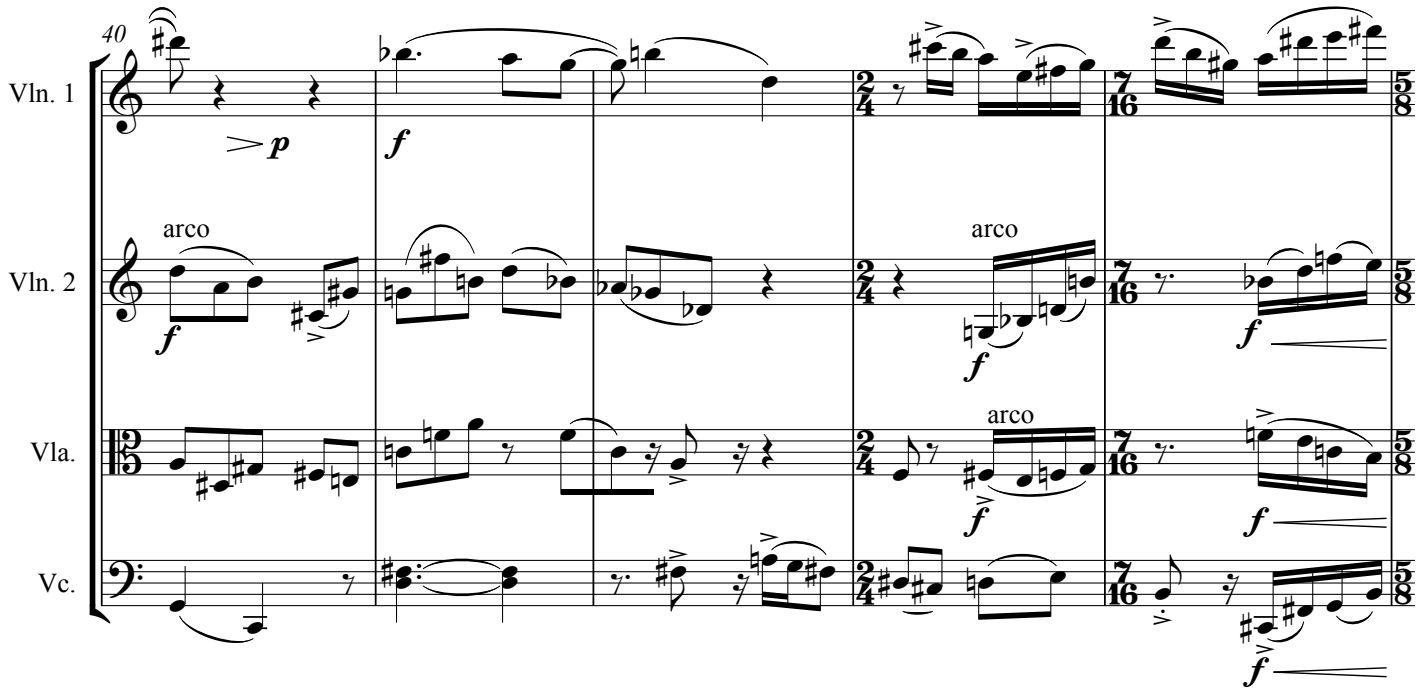
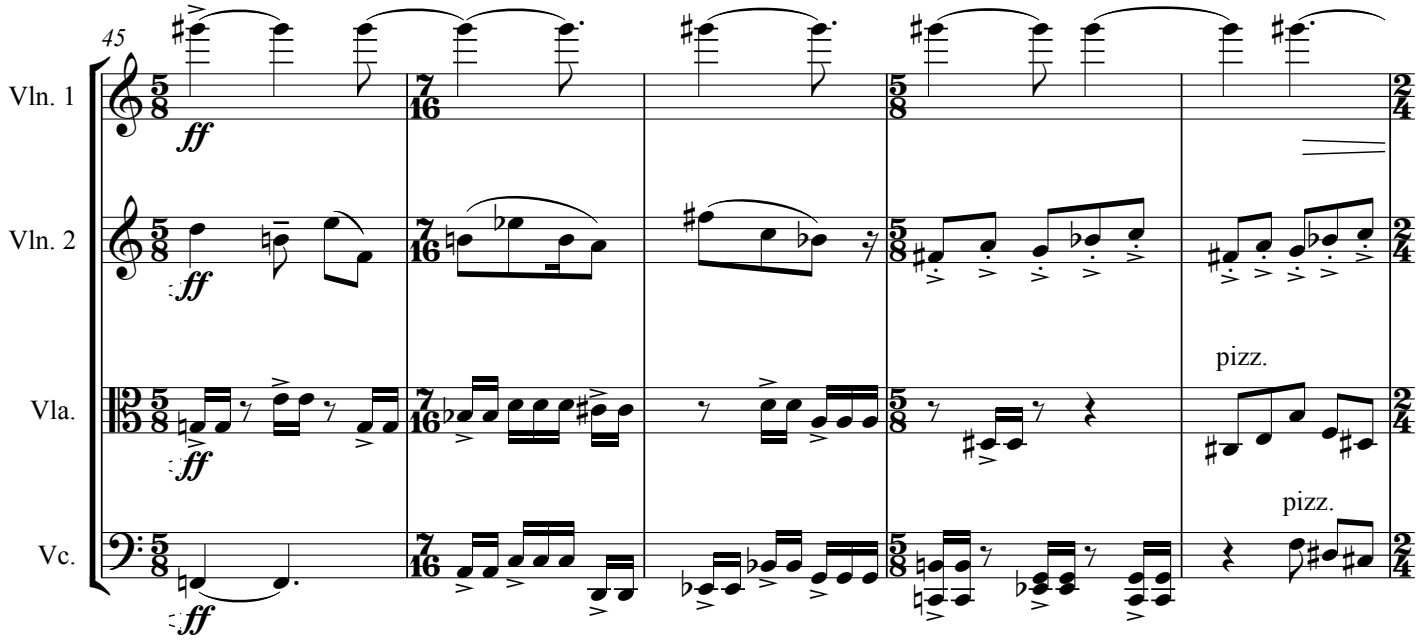

13
Vln. 1
Vln. 2
Vla.
Vc.
arco
(pizz.)
ff
p
pp
f
sub p
sub pp

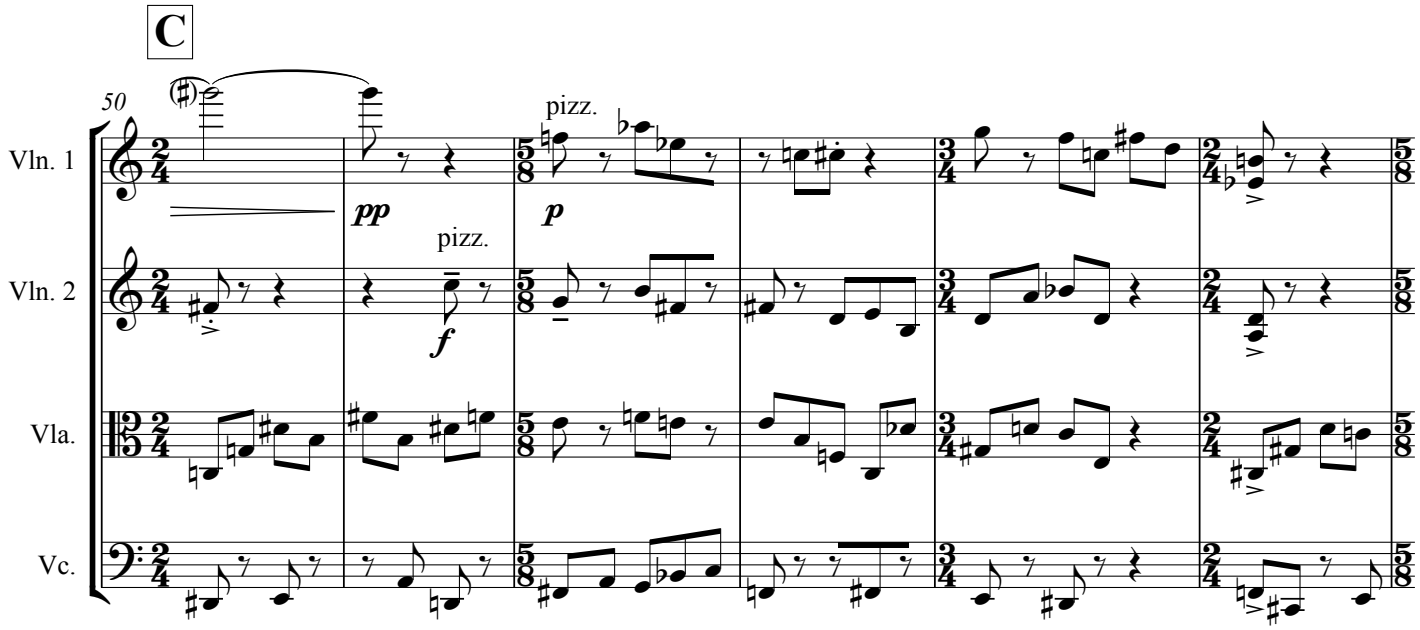

A
20
Vln. 1
Vln. 2
Vla.
Vc.
p
f
sfzp

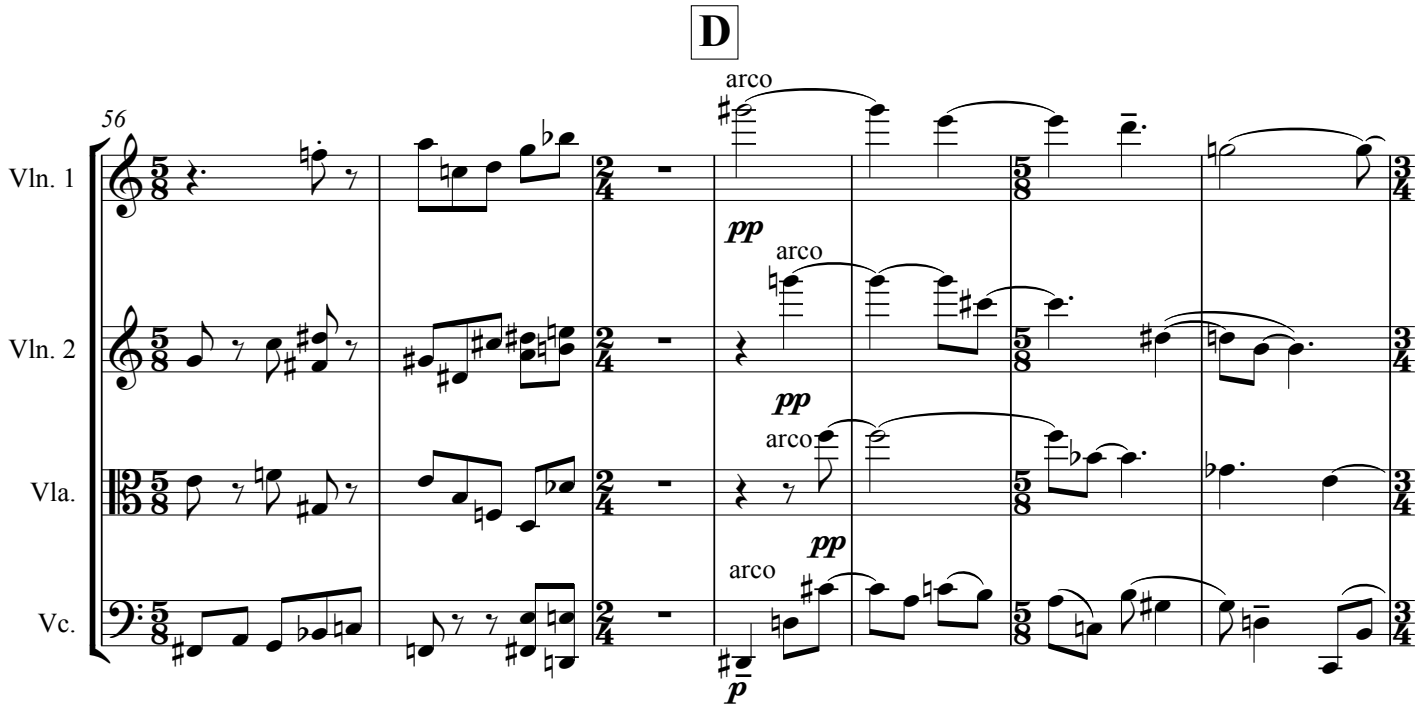

B
26
Vln. 1
Vln. 2
Vla.
Vc.
pizz.
arco
p
f
sub p
ff p

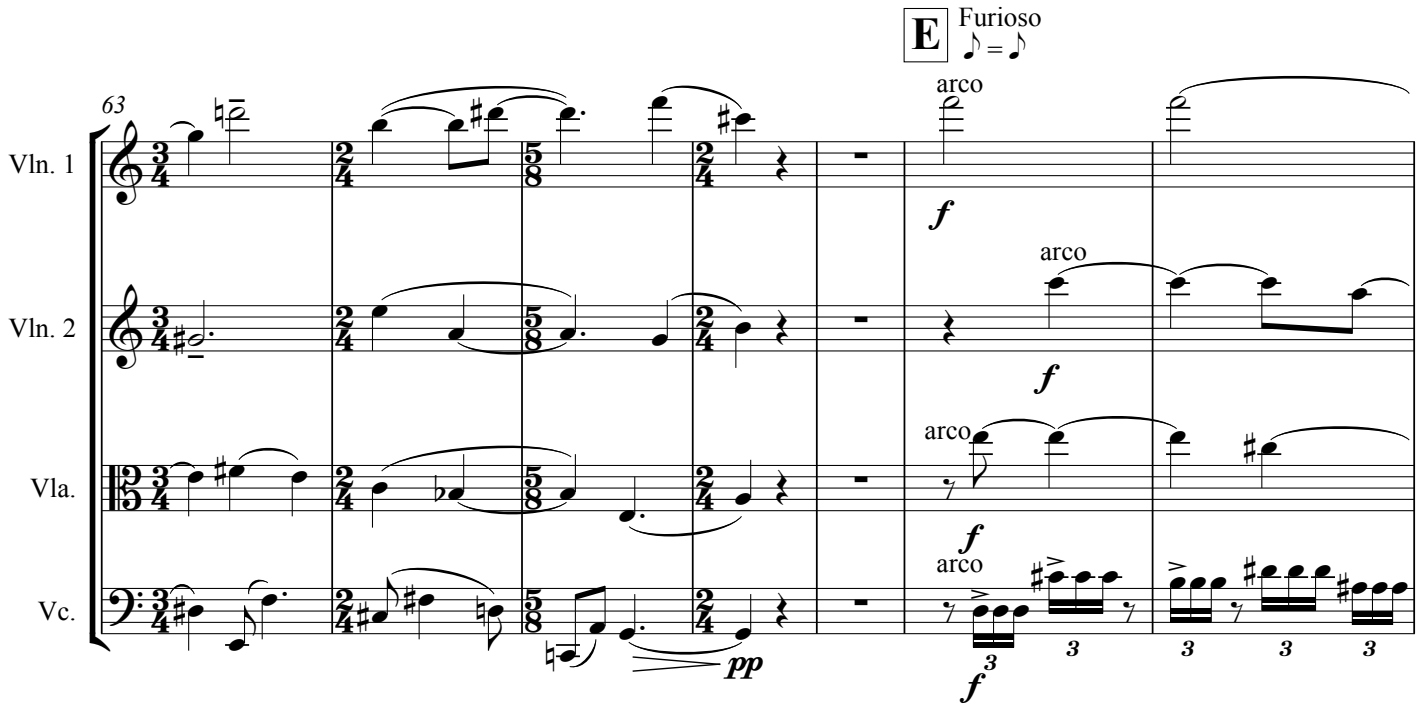

33
Vln. 1
Vln. 2
Vla.
Vc.
mf
f

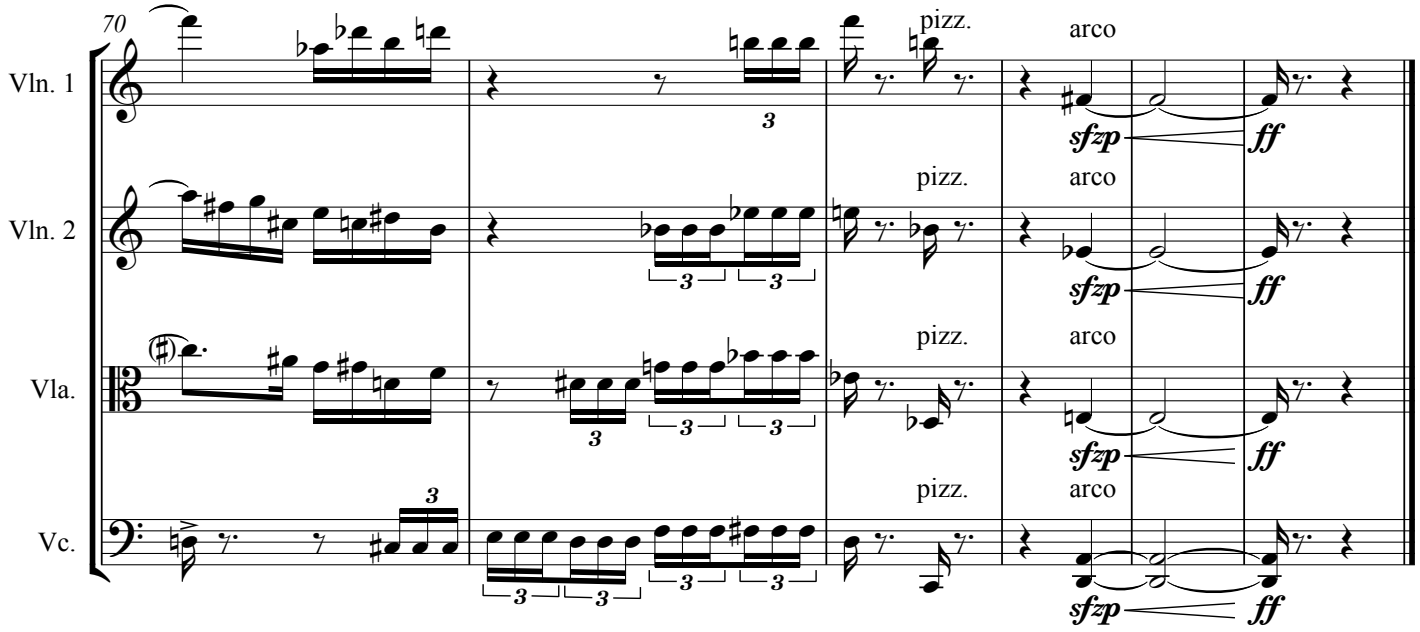

40
Vln. 1
Vln. 2
Vla.
Vc.
arco
arco
arco


45
Vln. 1
Vln. 2
Vla.
Vc.
pizz.
pizz.

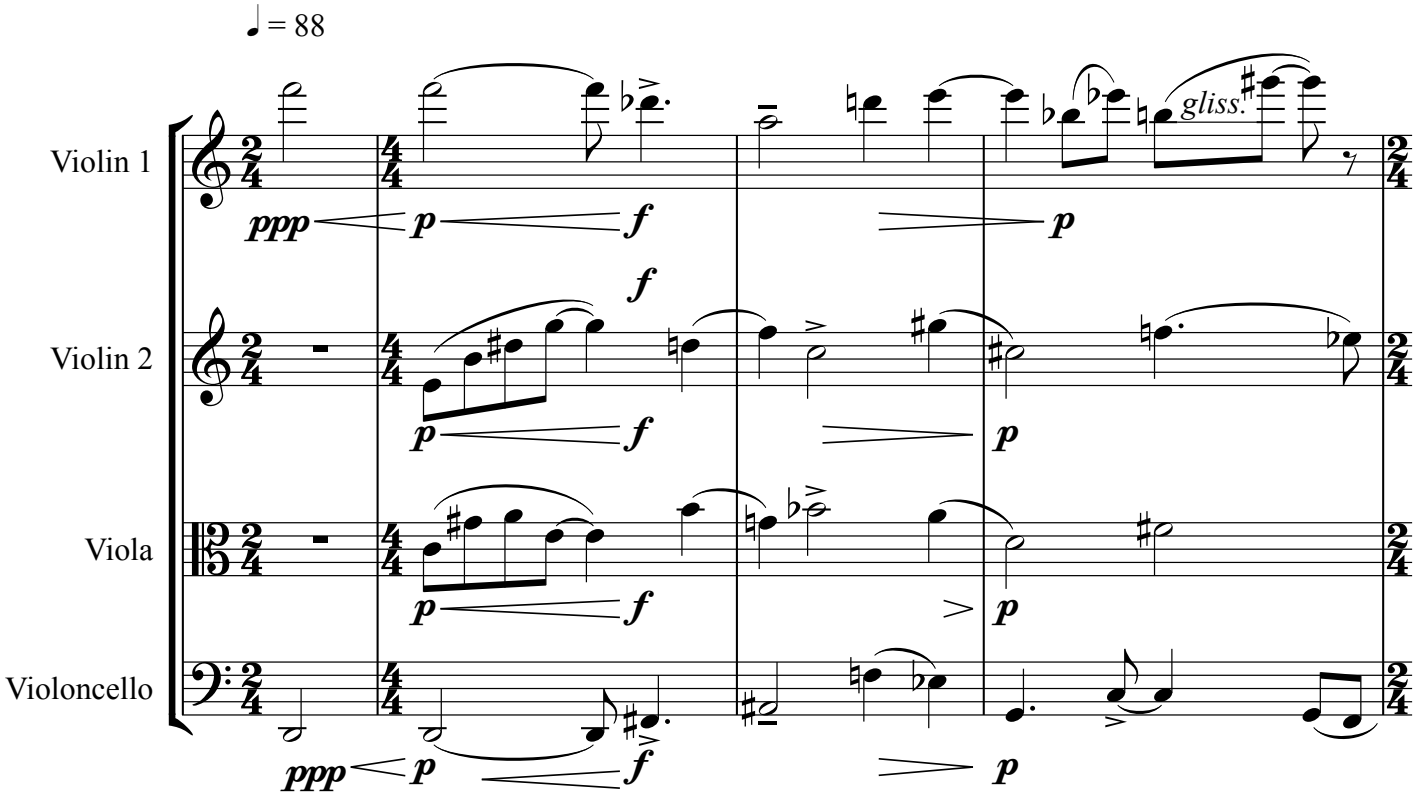

C
50
Vln. 1
Vln. 2
Vla.
Vc.
pizz.
pp
p
pizz.
f

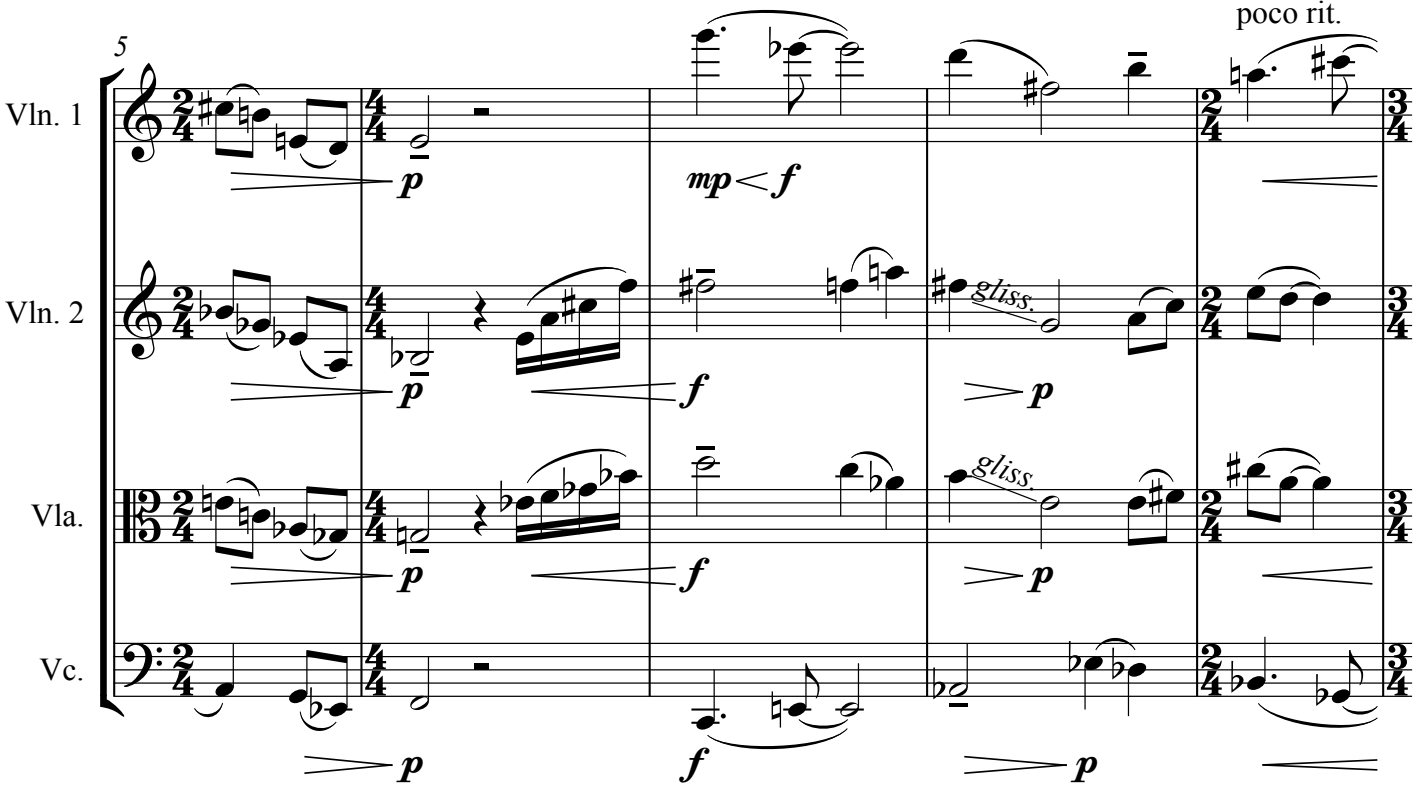

D
56
Vln. 1
Vln. 2
Vla.
Vc.
arco
pp
arco
pp
arco
pp
arco
p

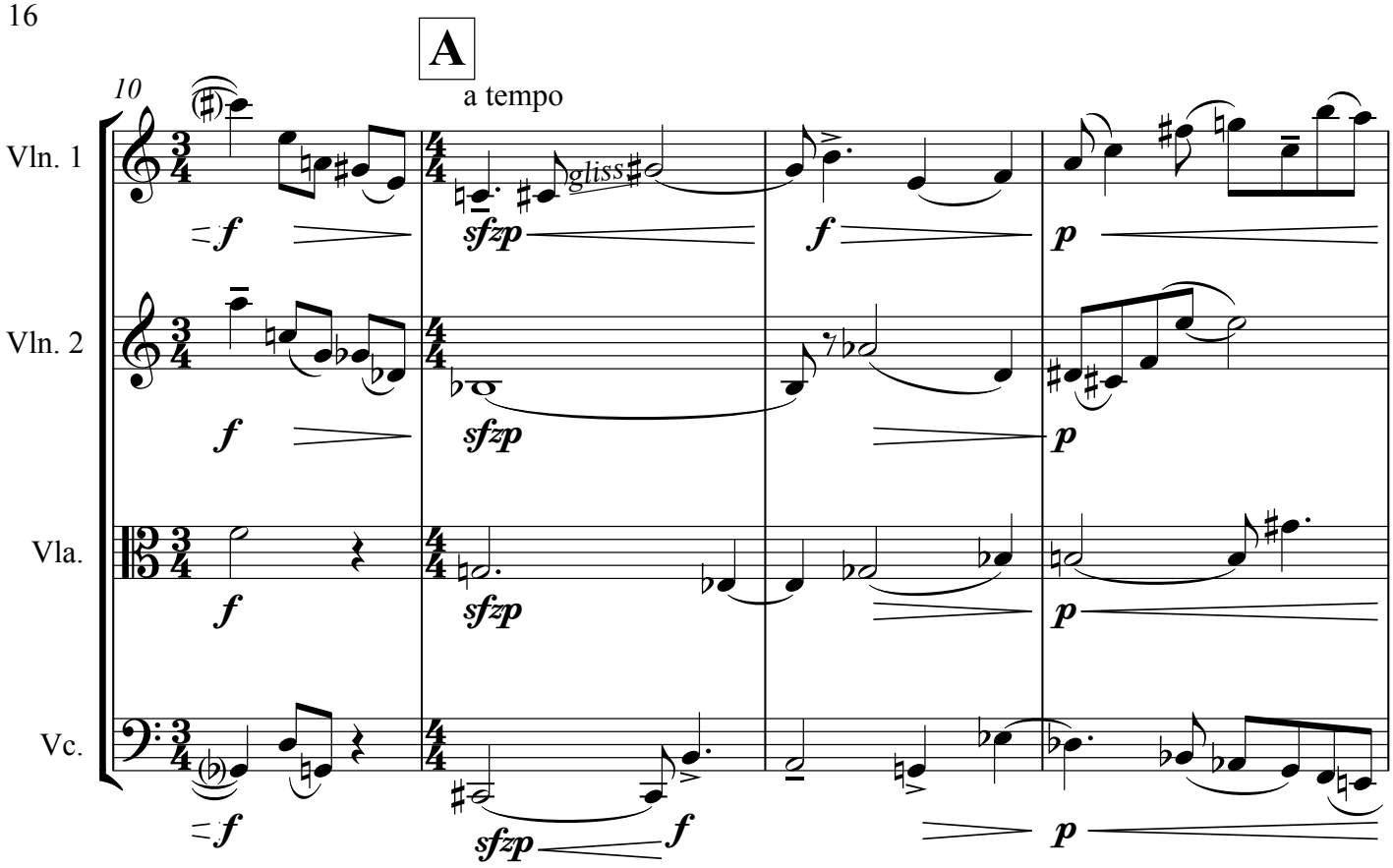

E
Furioso
♪ = ♪
63
Vln. 1
Vln. 2
Vla.
Vc.
arco
f
pp
3

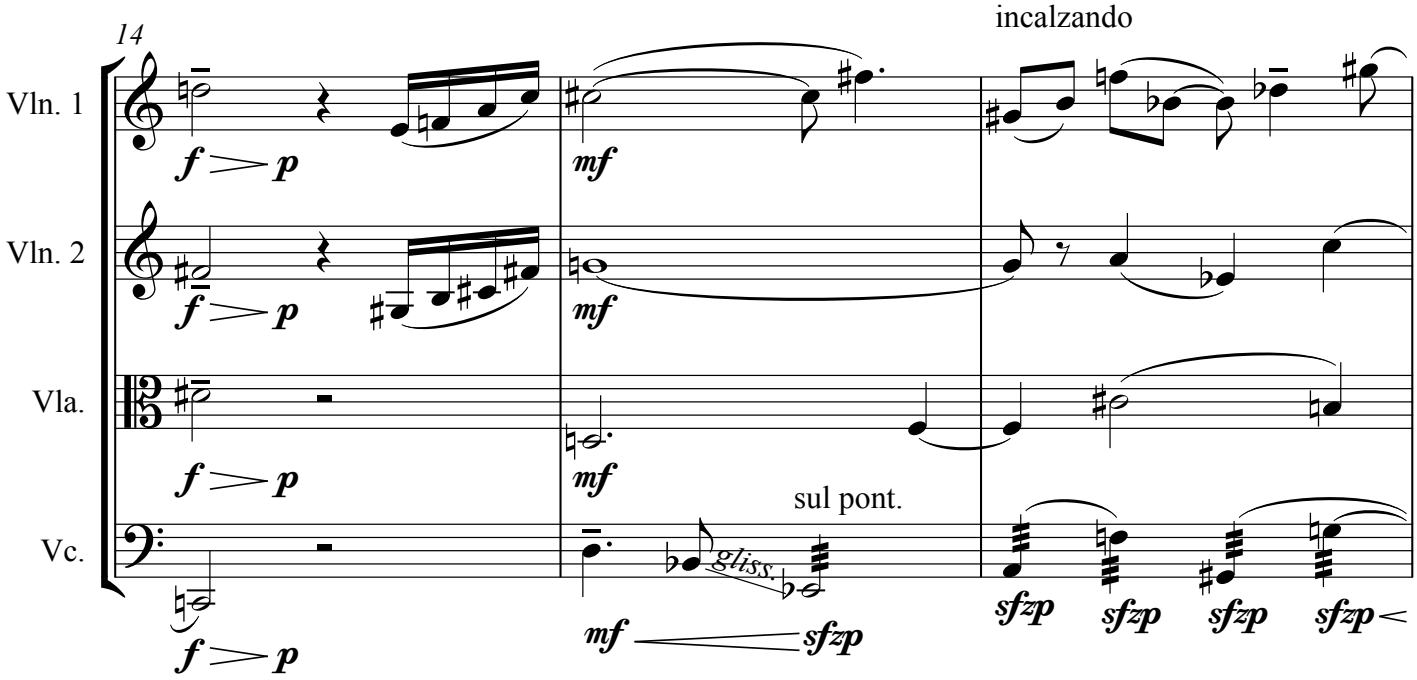

70
Vln. 1
Vln. 2
Vla.
Vc.
pizz.
arco
sfzp
ff
3

III


♩ = 88
Violin 1
Violin 2
Viola
Violoncello
ppp
p
f
gliss.


5
poco rit.
Vln. 1
Vln. 2
Vla.
Vc.
p
mp
f
gliss.


A
a tempo
10
Vln. 1
Vln. 2
Vla.
Vc.
gliss
sfzp
f
p


14
incalzando
Vln. 1
Vln. 2
Vla.
Vc.
sul pont.
gliss.
f
p
mf
sfzp

B a tempo

17

rit.

Vln. 1

Vln. 2

Vla.

Vc.

gliss

sul pont.

C

20

poco rit.

a tempo

sul pont.

Vln. 1

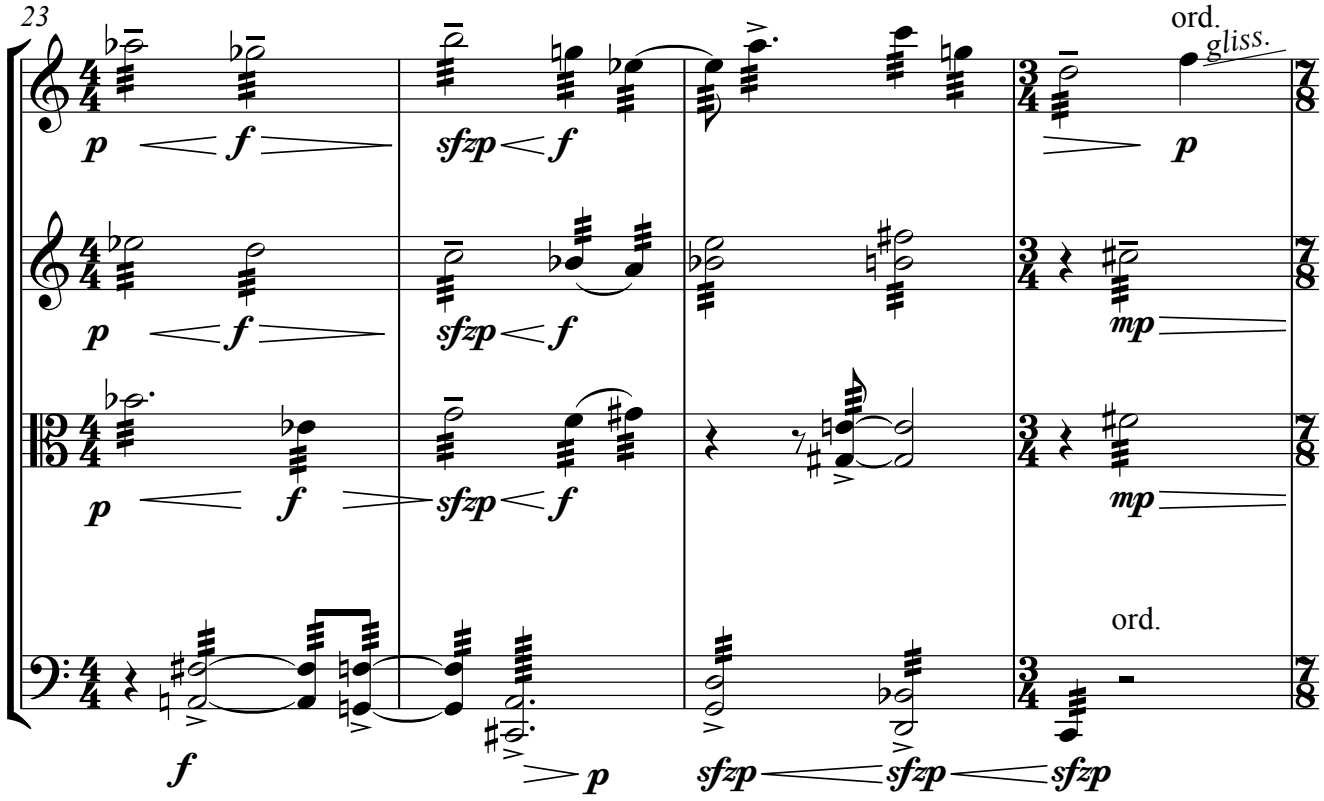
Vln. 2

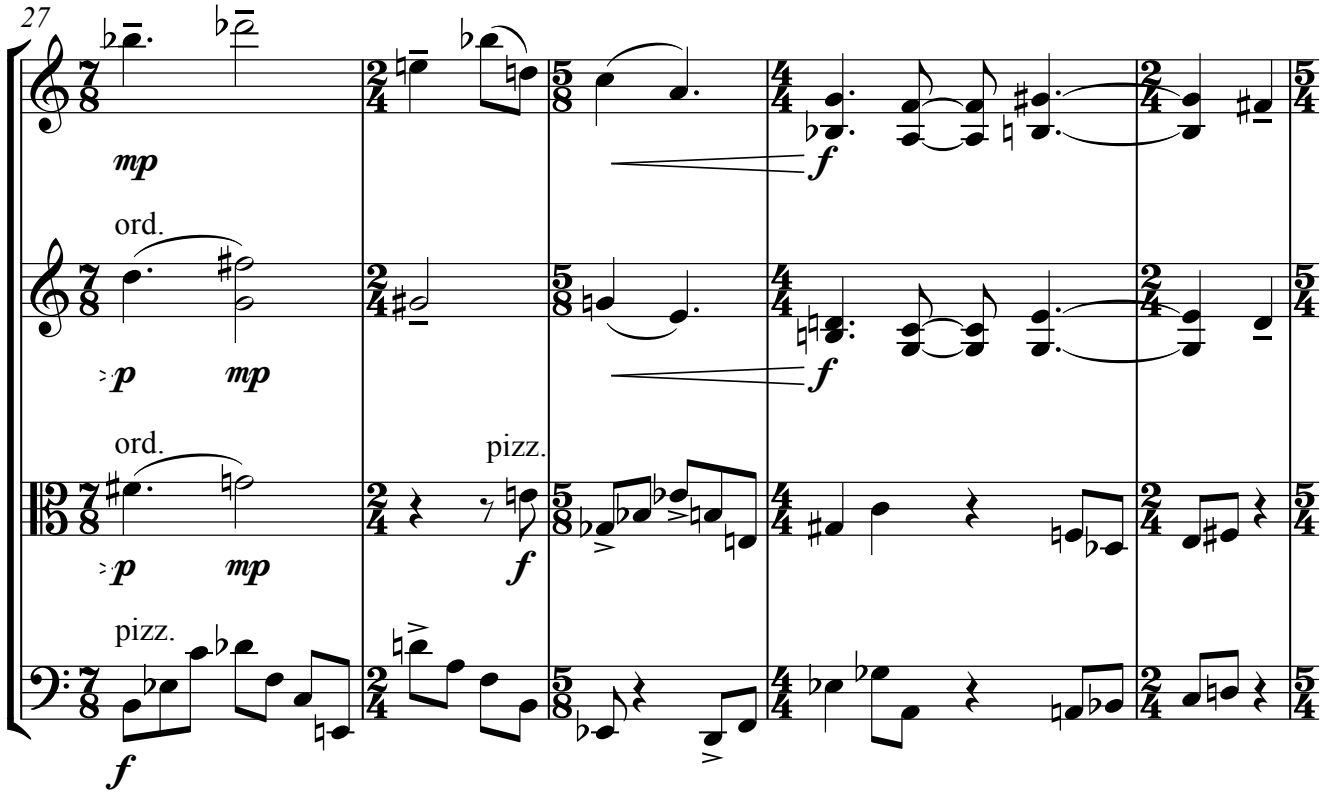
Vla.

Vc.

ord.

sul pont.


23
Vln. 1
Vln. 2
Vla.
Vc.
ord.
gliss.
p
f
sfzp
mp
ord.
f
p
sfzp
sfzp
sfzp


27
Vln. 1
Vln. 2
Vla.
Vc.
mp
ord.
p
mp
f
ord.
pizz.
p
mp
f
pizz.
f

D L'istesso tempo
Mysterioso

32

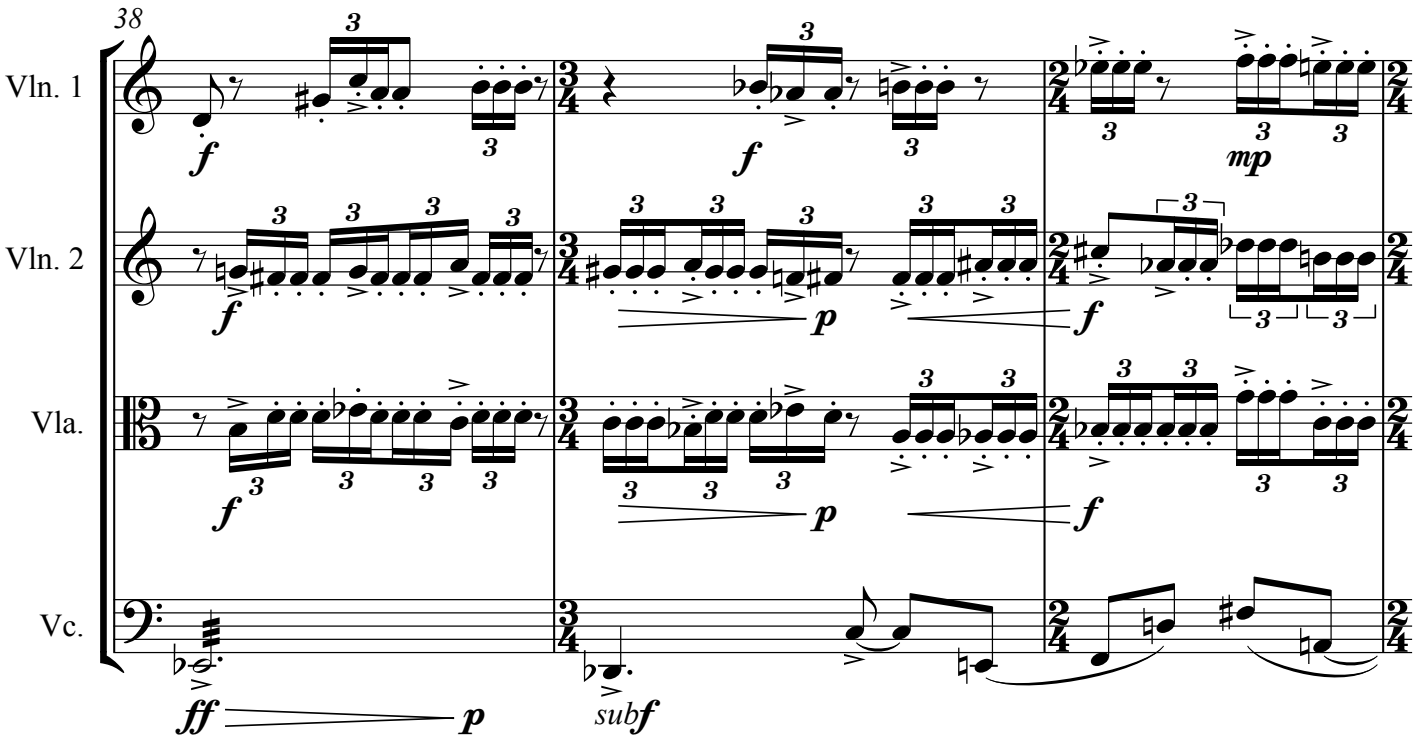
Vln. 1
Vln. 2
Vla.
Vc.

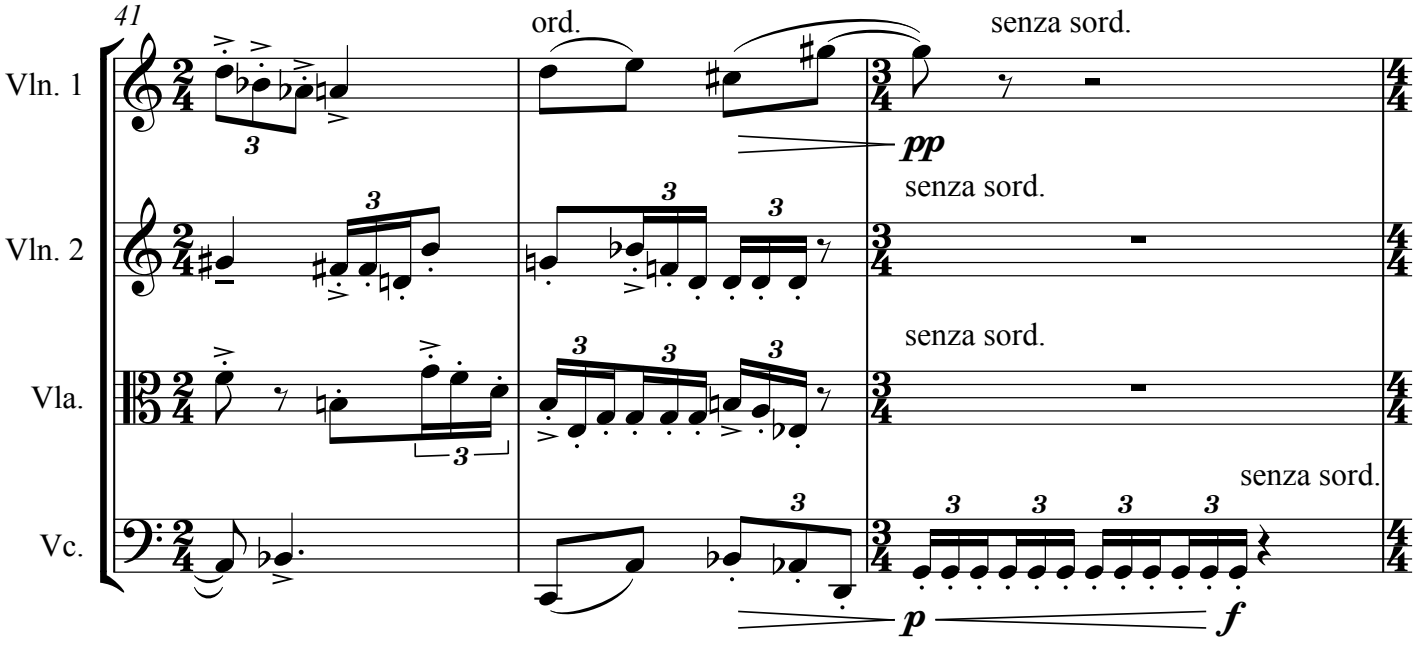
con sord. sul pont.
sfzp ff p
con sord. sul pont.
sfzp sul pont. f ff p
arco con sord.
sfzp mp ff p
sul pont. arco con sord.
sfzp p ff p

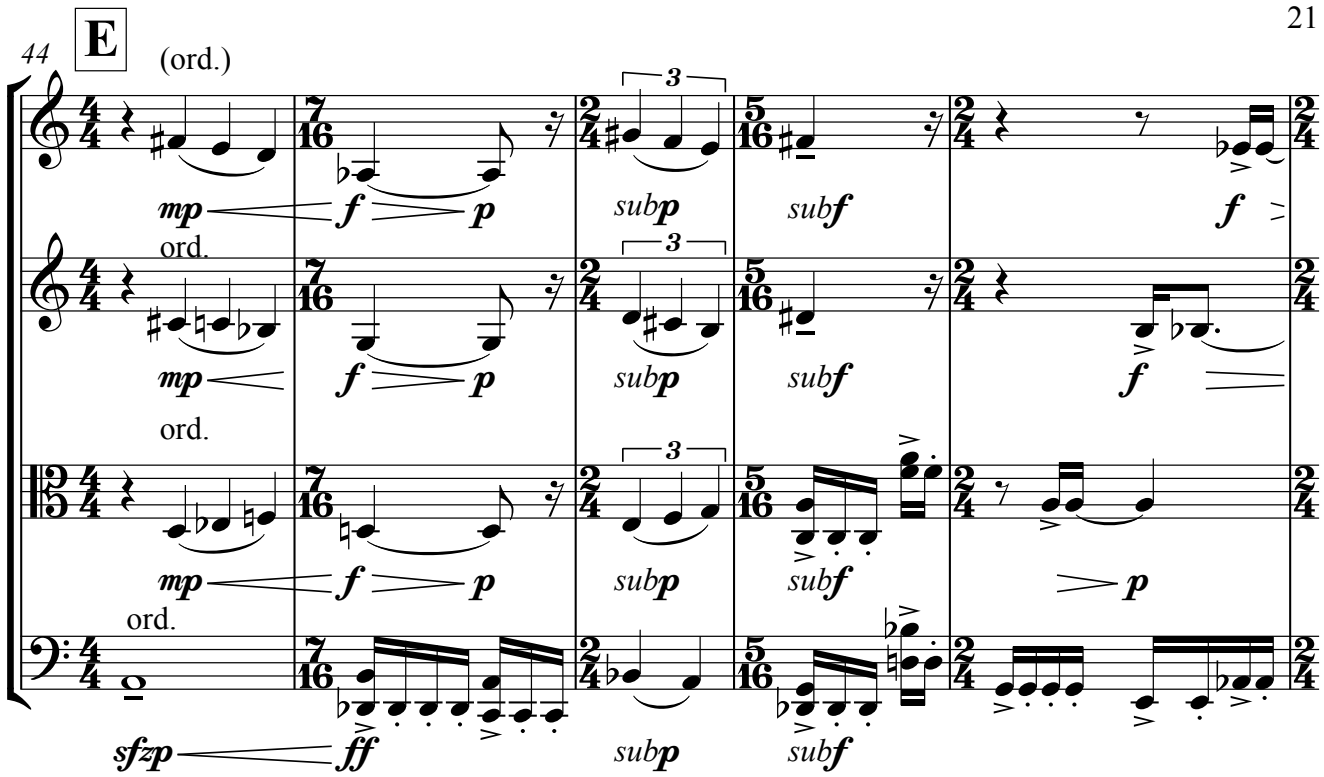
36

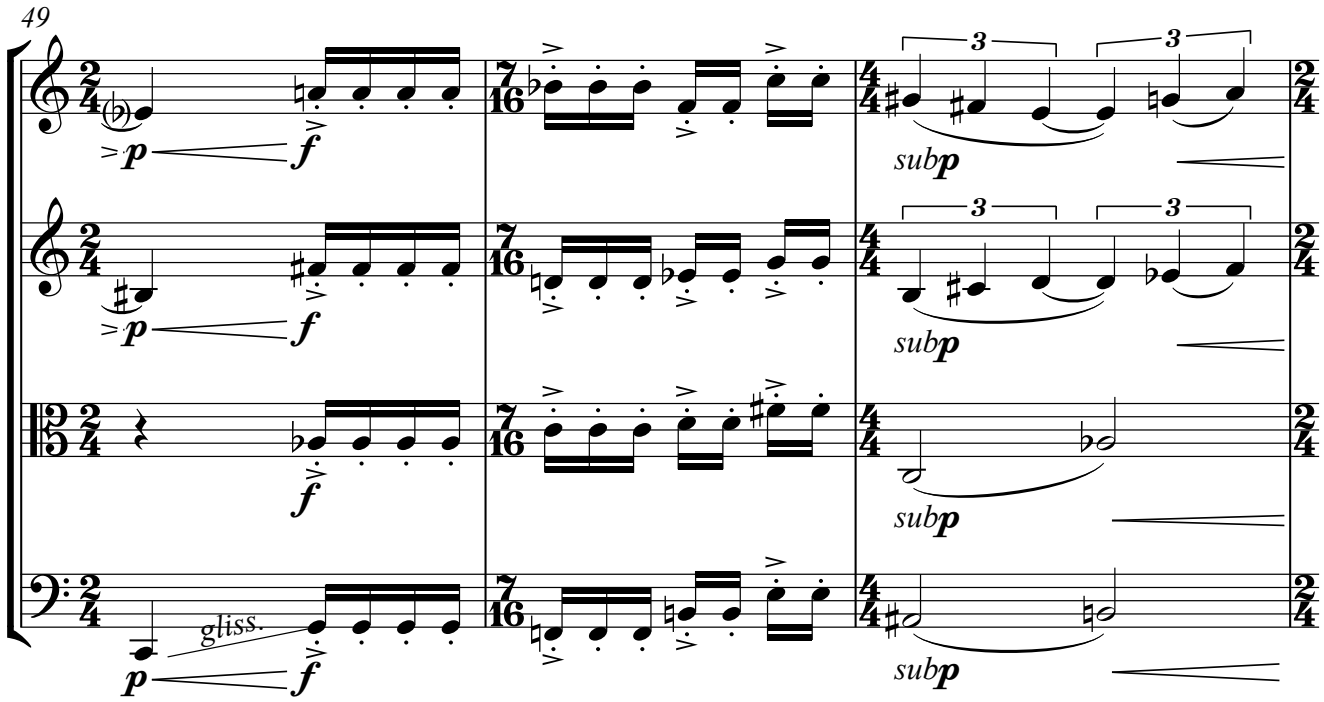
Vln. 1
Vln. 2
Vla.
Vc.

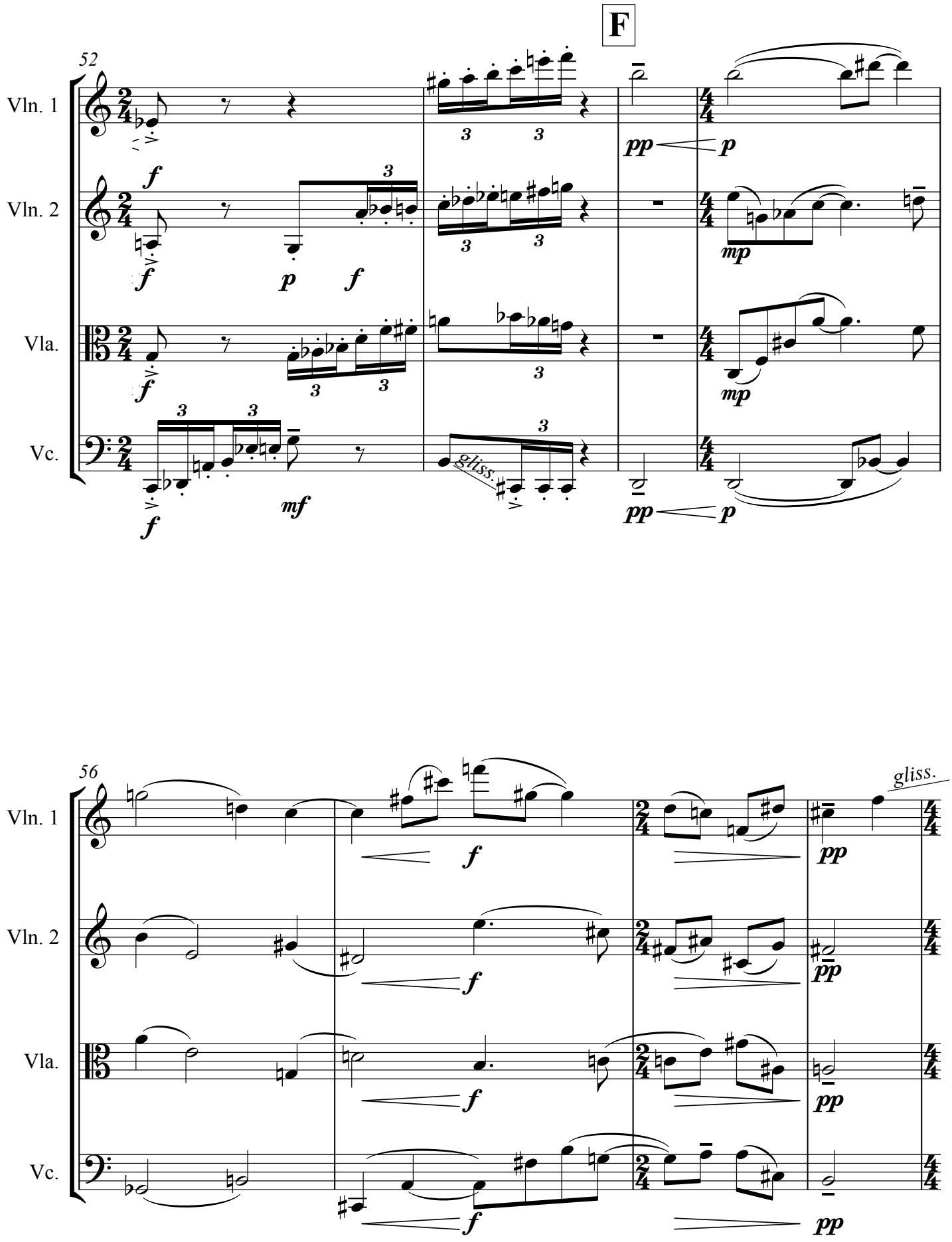
mf ff
p ff
p ff
ff

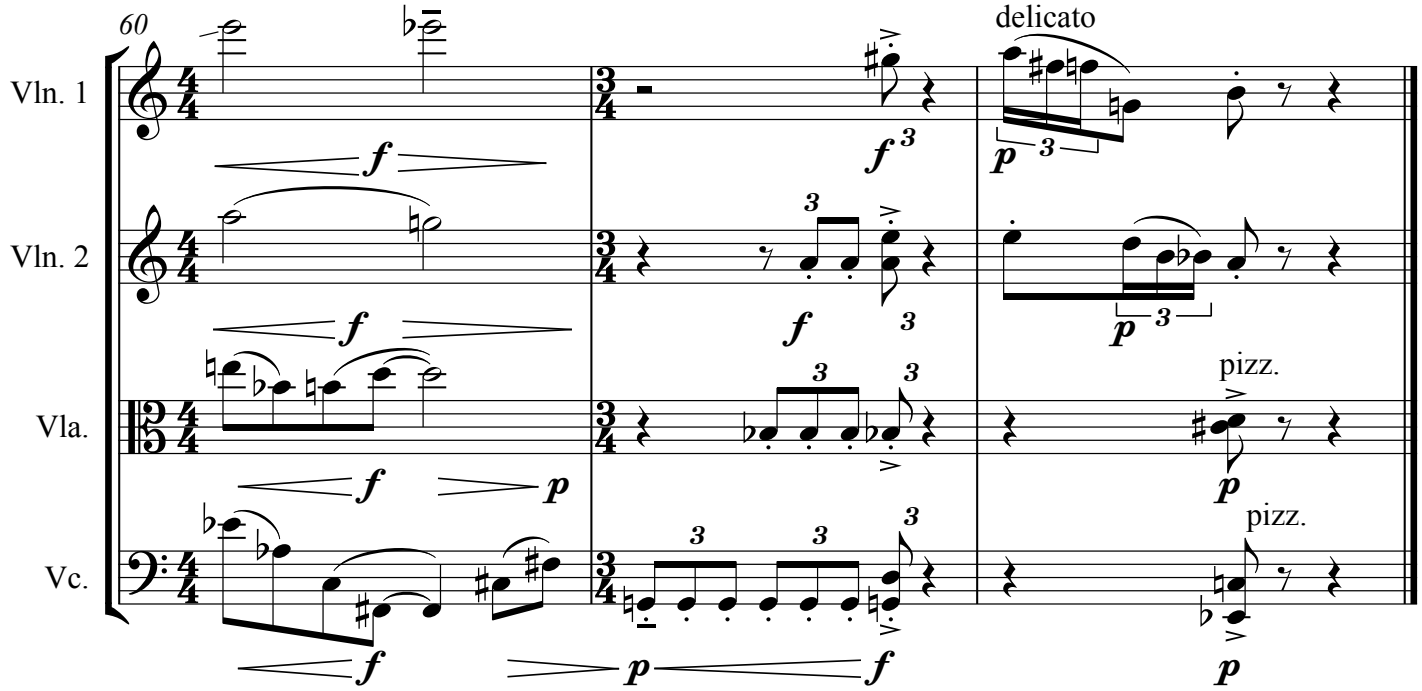

38
Vln. 1
Vln. 2
Vla.
Vc.
f
mp
p
ff
subf


41
Vln. 1
Vln. 2
Vla.
Vc.
ord.
senza sord.
pp
p
f


44
E
(ord.)
Vln. 1
Vln. 2
Vla.
Vc.
ord.
mp
f
p
subp
subf
sfzp
ff


49
Vln. 1
Vln. 2
Vla.
Vc.
p
f
subp
gliss.


F
52
Vln. 1
Vln. 2
Vla.
Vc.
56
gliss.


60
Vln. 1
Vln. 2
Vla.
Vc.
delicato
pizz.
pizz.

APPENDIX I

Set A [C, C#, D, Eb]
Set B [C, C#, G, A]

A U A						A U B					
A_0	***C***	***C#***	***D***	***Eb***	IV	B_0	***C***	***C#***	G	A	II
A_1	***C#***	***D***	***Eb***	E	III	B_1	***C#***	***D***	G#	Bb	II
A_2	***D***	***Eb***	E	F	II	B_2	***D***	***Eb***	A	B	II
A_3	***Eb***	E	F	F#	I	B_3	***Eb***	E	Bb	***C***	II
A_4	E	F	F#	G	0	B_4	E	F	B	***C#***	I
A_5	F	F#	G	G#	0	B_5	F	F#	***C***	***D***	II
A_6	F#	G	G#	A	0	B_6	F#	G	***C#***	***Eb***	II
A_7	G	G#	A	Bb	0	B_7	G	G#	***D***	E	I
A_8	G#	A	Bb	B	0	B_8	G#	A	***Eb***	F	I
A_9	A	Bb	B	***C***	I	B_9	A	Bb	E	F#	0
A_{10}	Bb	B	***C***	***C#***	II	B_{10}	Bb	B	F	G	0
A_{11}	B	***C***	***C#***	***D***	III	B_{11}	B	**C**	F#	G#	I

Set combinations with zero notes in common

$A_0 + A_4$ $A_0 + A_8$

$A_0 + A_5$ $A_0 + B_9$

$A_0 + A_6$ $A_0 + B_{10}$

$A_0 + A_7$

APPENDIX II

Set Z [C, A, B, G#, F#]

[Bb, C] ∩ Z

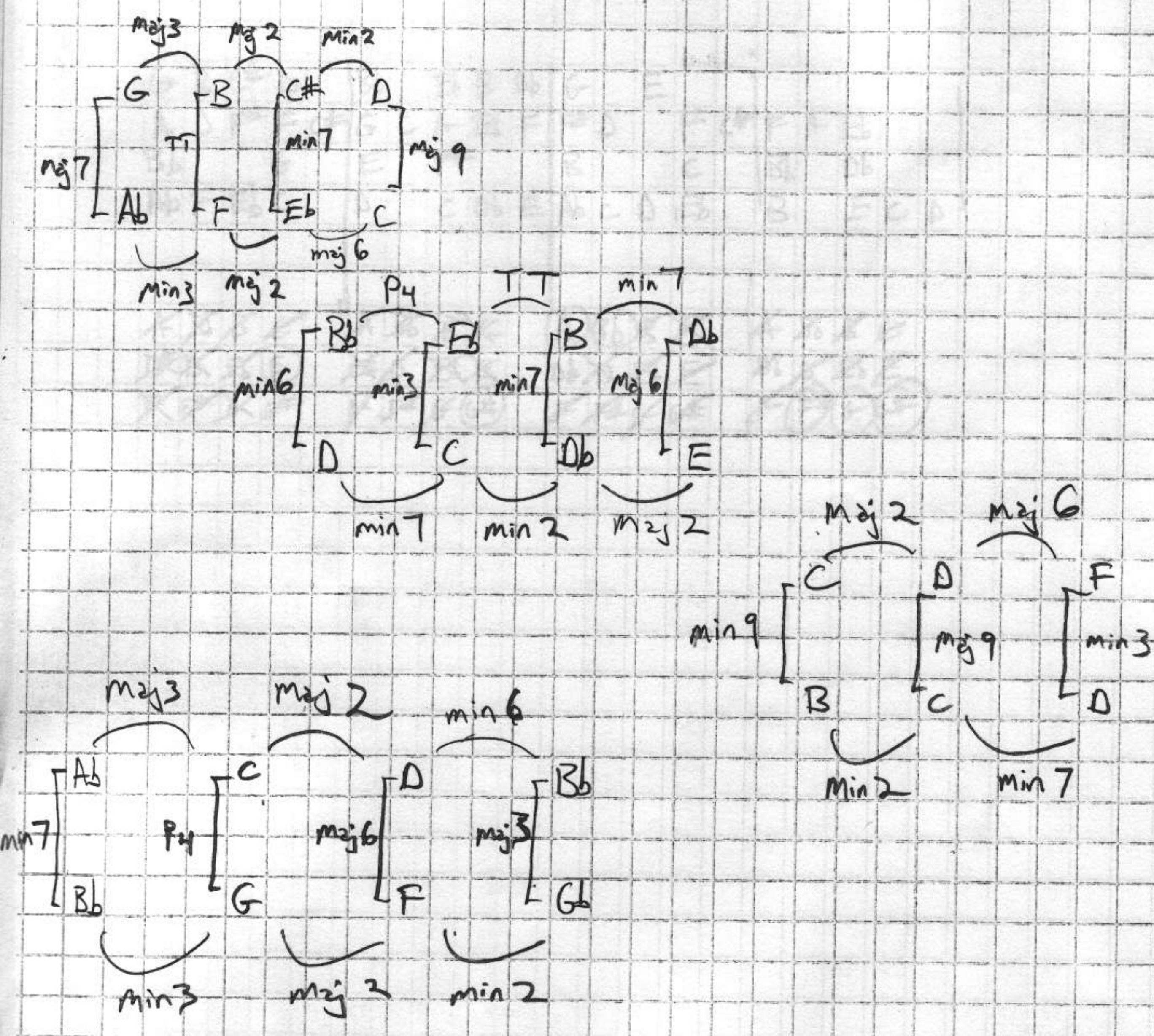
Z_0	C	A	B	G#	F#	
Z_1	C#	***Bb***	***C***	A	G	
Z_2	D	B	C#	Bb	G#	
Z_3	Eb	C	D	B	A	
Z_4	E	C#	Eb	***C***	***Bb***	
Z_5	F	D	E	C#	B	
Z_6	F#	Eb	F	D	***C***	*
Z_7	G	E	F#	Eb	C#	
Z_8	G#	F	G	E	D	
Z_9	A	F#	G#	F	Eb	*
Z_{10}	Bb	G	A	F#	E	
Z_{11}	B	G#	Bb	G	F	

Sets Z_2 and Z_4 contain the notes Bb and C.

II

B

Appendix III

Vln1 G B C# D — | Bb — Eb B Db | G — E —— | C — D F | Ab C D Bb A — | F# — C |

Vcl Ab F Eb C — | D — C Db E | Ab C D Eb — | B — E C D | Bb G F Gb —— |