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The Arrow of Time

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THE ARROW OF TIME

for Flute and ensemble

MARCEL CASTRO-LIMA
2020

Marcel Castro-Lima

The Arrow of Time

(A Seta do Tempo)

I. Time

II. Space

III. Entropy

Flute

(Concert, Piccolo, Bass)

Percussion

(Glockenspiel, Crotales, Temple Blocks, 2 Cow Bells, Triangle)

Violin 1

Oboe

Piccolo Trumpet

Violin2

Duration: 19'00"



Program Notes

This is a piece in three movements for Piccolo and ensembles of varied sizes. All three movements can be performed as independent solo pieces. If using the ensembles, all three movements should be included in performance. It can be played with the flute and only the first ensemble (plus two instruments), two ensembles (plus 5 instruments), three (plus 10 instruments), four (plus 18 instruments), or five ensembles (plus 31 instruments).

The arrow of time is a concept that describes time's directionality: its asymmetry. While most physical laws are not time-sensitive — they remain true if time is reversed — the second law of thermodynamics states that entropy always increases over time. Entropy, the tendency to disorder within a system, describes how particles tend to move through space and through time until they reach the maximum state of disorganization, or uniformity. In other words, it takes an input of energy to keep a system in an organized state. If there's no source of energy, the system always moves toward disorder as it loses energy. In that sense, entropy becomes an evidence that time passes. Robert Smithson gives the perfect example in *The Monuments of the Passaic, New Jersey*:

I should now like to prove the irreversibility of eternity by using a jejune experiment for proving entropy. Picture in your mind's eye the sand box divided in half with black sand on one side and white sand on the other. We take a child and have him run hundreds of times clockwise in the box until the sand gets mixed and begins to turn grey; after that we have him run anti-clockwise, but the result will not be a restoration of the original division but a greater degree of greyness and an increase of entropy.

The main idea of *The Arrow of Time* is that the ensembles are expanding the flute part in different ways in the different movements: Time, Space, and Entropy. In the first movement, *Time*, the gestures performed by the flute are expanded to the other instruments over time, in an imitative manner. In the second movement, *Space*, the gestures performed by the piccolo are expanded in space; an analogy to the spectral expansion of the sound. The third movement, entropy, acts like a conclusion combining both dimensions. The music goes from highly organized—i.e., dependable of the flute part—to complete chaos and independency.

Instrumentation

There are several ways of presenting this piece. The flute part is mandatory. Any of the three movements can be performed as a solo piece. The ensembles can be added to the performance in order, from 1 to 5. No ensemble can be skipped: Ensemble 3 can only be used along with Ensembles 1 and 2. If any ensemble is used in the performance, all three movements should be presented. **This is the score for Flute + Ensemble 1 + Ensemble 2.**

- Flute (Piccolo, Concert, Bass)
- Ensemble 1: Violin, Percussion (Glockenspiel, Crotalles, Temple Blocks, 2 Cow Bells, Triangle).
- Ensemble 2: Oboe, Piccolo Trumpet, Violin

Stage Set-up

It is important that each ensemble is placed together in the stage. The instruments that are part of an ensemble have a common role in the music, so it's important that the unity of the ensemble is noticeable visually and spatially.

Performance Notes

The musical score examples illustrate various performance techniques:

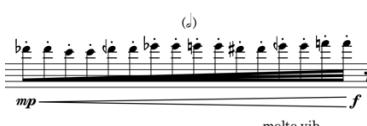
- Winds: Flutter-Tongue**: A woodwind instrument (Flute) plays a series of rapid, short notes. Dynamics: *pp* to *f*. Articulation: *sfz*.
- Others: Tremolo**: A woodwind instrument (Flute) plays a sustained note with a tremolo effect. Dynamics: *pp* to *mfz*.
- any multiphonic**: A woodwind instrument (Flute) plays a multiphonic note. Dynamics: *pp* to *mfz*.
- Any multiphonic involving the indicated pitch**: A woodwind instrument (Flute) plays a multiphonic note on a specific pitch. Dynamics: *pp* to *mfz*.
- Bisbigliando**: A woodwind instrument (Flute) plays a series of short, staccato notes. Dynamics: *mfz* to *p*, then *mf* to *p*. Articulation: *bisb.*
- Harmonics. Fundamentals indicated with diamond note-head**: A woodwind instrument (Flute) plays harmonics. Diamond-shaped note heads indicate fundamental frequencies. Dynamics: *p* to *mp*, then *p* to *mfz*.
- Flute *pizzicati*: accent-shaped note-head**: A woodwind instrument (Flute) plays *pizzicati* (plucked) notes. The note heads are shaped like small triangles. Dynamics: *mf* to *f*.
- Triple-Tongue**: A woodwind instrument (Flute) plays a series of notes using triple-tonguing. Articulation: *3:2:1* (indicated by a bracket below the notes).


Double-Tongue
f

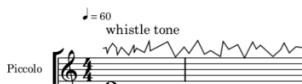

Airy Sound
mp


Any extremely high note
sffz

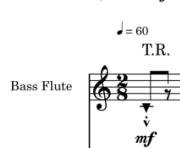

Play indicated notes as fast as possible in the relative metric position
as fast as possible
mf *f* *ff*

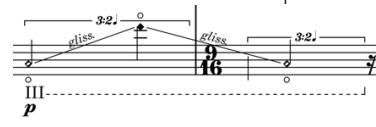

Accelerando. Duration indicated in parentheses
(.)
mp *f*
molto vib.
mp


Very wide *vibrato*
mp

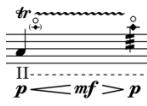

Whistle tone
j=60
whistle tone


Jet Whistle
sfz *mf*


Tongue-Ram
T.R.
Bass Flute
mf


Harmonic Glissando
p
gliss.
III-----I


Let the bow bounce (measured)
jeté
mp *p*
3:2


Trill to harmonic
p *mf* *p*
II-----I


Flautando (flute-like tone on by playing nearer the fingerboard)
flautando
molto sul tasto
arco
mf
mp


Artificial Harmonics
pp *mp*

Natural Harmonics (notes indicate fingering)

Let the bow bounce (unmeasured)

Sustain note and open close mute as indicated

Regular-sized notes are played in time, as grace notes are played freely like in proportional notation

The Arrow of Time

Score in C

Marcel Castro-Lima

1. Time

1. $\text{♩} = 60$

Flute *sfz < ff* *mp* *pp < f* *sfz* *ff* *tr ~~~~* *tr tr ~~~~* *p* *ppp*

Triangle *pp* *mf* *l.v.* *Glockenspiel* *Temple Blocks* *Triangle* *l.v.*

Violin *f* *jeté* *3:2* *mf* *pp* *f* *ppp < mp > ppp*

Oboe *mf*

Picc. Trumpet *mf*

Violin *jeté* *3:2* *f*

Fl. *pp* *mp* *pp* *pp* *mp* *p* *mf*

Temple Blocks *pp* *mp* *pp* *p*

Cowbell *jeté*

Glockenspiel *pp* *mp*

Tb. *pp* *mp* *pp*

Vln. *pizz.* *pp*

Ob. *pp*

Picc. Tpt. *mute* *5:4* *pp*

Vln. *mp*

6 (2) Time

Fl. *pp* <*mfz*> <*mfz*> <*mfz*> <*mfz*> <*mfz*> <*mfz*> <*mfz*> <*mfz*> *bisb.* <*mfz*> <*mfz*>

Tr. Triangle *pp*

Vln sul pont. *pp* *p* III. *gloss* *ord.* *pp*

Ob. *p* *tr* *pp*

Picc. Tpt *pp*

Vln *pp* IV. *pp*

Fl. *f* (3) *p* *mf* *p* *mf* *p* *pp* <*mfz*>

Gl. *f* *p* *mp* *pp*

Vln pizz. *f* 3:2:1 arco *pp* *mp* *p* *pp* *jeté* *p* 3:2:1 *pp*

Ob. *f* *tr* *p* *mp* *p*

Picc. Tpt *f* mute off *pp* 3:2:1 *mf* *p*

Vln *f* *mp* arco *tr* *pp* *mf* *p*

Fl. (d) 14 *p* < *mf* > *p* < *mfz* > *f* ④ *any multiphonic* *pp* < *mfz* > <

Tr. Triangle *p* Cowbell *mp* *mf* *f*

Vln jeté *mp* 6:4:1 *pizz.* *f* arco *pp*

Ob. *p* *mf* < *p* >

Picc. Tpt *p* *mp* < *f* >

Vln *p* *f* *mf* *p* *pizz.*

Fl. bisb. (d) *mfz* > *p* < *mf* > *p* *mp cre* 3:2:1 3:2:1 scen 3:2:1 do ff

Tr. Triangle *pp* Cowbell *p* Triangle I.V. Temple Blocks *p* 3

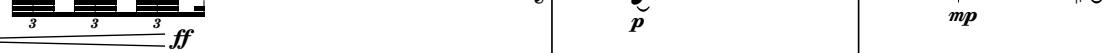
Vln *p* II. *p* < *mf* > *p* *pp* *f* jeté 6:4:1 *mf* *gliss.*

Ob. bisb. (d) *mp*

Picc. Tpt *p* mute 3:2:1 *mf* *p*

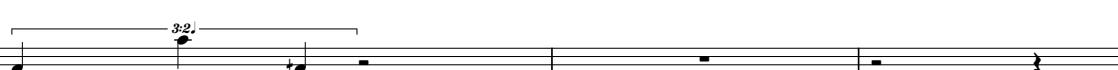
Vln *pp* *mf* *arco* 3:2:1 *f* jeté 6:4:1

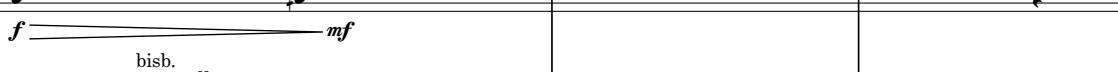
19 (5) Fl. 

Glockenspiel
Tb. 

Vln. 

Ob. 

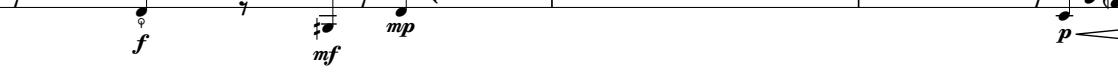
Picc. Tpt. 

Vln. 

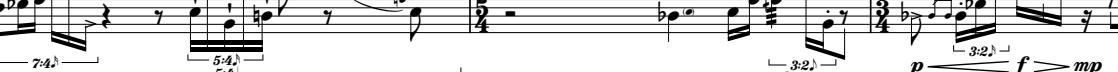
22 (6) Fl. 

Triangle Cowbell
Tr. 

Vln. 

Ob. 

Picc. Tpt. 

Vln. 

Fl. 25 aeolian *tr* *ord.*
96:8 *f* *mp* *5:4:8* *f* *mp*

Glockenspiel
mf *p* *f*

Vln pizz. flautando
molto sul tasto arco
f *mp* *mfz* *mp* *mf*

Ob. *f* *mf* *mf* *f*

Picc. Tpt *mf* *3:2:8* *mp* *3:2:8* *p* *3:2:8*

Vln pizz. arco pizz. *pp* *mf* *as fast as possible*

Fl. 27 (7) *f* *ff cresc.* *6:4:8* *sffz* *mf*

Gl. *p* *mf* *f* *ff* Temple Blocks *3:2:8*

Vln *mf* *6:4:8* *mf* *f* *ff* *arco* *8va* *f* *sffz*

Ob. *mp* *f* *5:4:8* *ff* *6:4:8*

Picc. Tpt *mp* *mf* *f* *ff* *arco* *8va*

Vln *p* *tr* *5:4:8* *pizz.* *ff*

Time

Fl. *ff* *mf* *p* bisb. (♩) *ff* *f* *mf* *p*

Glockenspiel *mf* *pp* *mp* *mf*

Vln *ff* *mf* *p* arco *sfz* *mf*

Ob. *mf* bisb. (♩) *pp* *pp*

Picc. Tpt *mf* *p* mute *mf* *p*

Vln *mf* *p* pizz. *p*

Fl. *mp* *f* *mf* *p* bisb. (♩) *pp*

Cowbell

Gl. *p* *mp* *mp*

Vln *sfz* *p* *sfz* *p* *pp* *ppp*

Ob. *p* *mp* *p* bisb. (♩) *pp*

Picc. Tpt *p* *mf*

Vln *mp* *sfz* *p* pizz. *mp*

Fl. bisb. (♩) *pp* bisb. (♩) *p* *mf* *p* aeolian *pp* *mp* *p* *mf*

Cb. Cowbell *pp* *pp* 3:2.

Vln flautando *pp* *pp*

Ob. *pp*

Picc. Tpt *pp*

Vln arco jeté *pp* flautando *pp*

as fast as possible

Fl. *mf* *f* *ff* *ppp* *p* bisb. (♩) *pp* *p* *tr* *pp* *pp*

Glockenspiel *mp* Cowbell *pp* Triangle *pp*

Vln *pp* *mp* *pp* *f* *pp* *pp* *pp*

Ob. *mp* *mp*

Picc. Tpt mute off *mf* *pp*

Vln *mp*

41

Fl. (♩) *ppp* bisb. (♩) *mp <mf* *mfz > pp* *5:4* *mp > p* *pp* *<mf > mp* *mf*

Glockenspiel *Gl.* *ppp* *p* *pp*

Vln *ppp* *p* *ppp* *pp*

Ob.

Picc. Tpt

Vln

44

Fl. *tr ~~~~* *ppp* *pp* *mp* *p* *pp* *mp* *tr ~~~~* *mf* *p* *3:2* *mfz* *mp* *pp* *p*

Cowbell Triangle Glockenspiel *Gl.* *ppp* *pp* *pp* *gliss.* *jeté* *pp* *tr ~~~~* *mp* *5:4*

Vln *ppp* *pp* *mp* *pp* *3:2* *pp* *mp* *pp*

Ob.

Picc. Tpt

Vln *jeté* *3:2* *pp* *mute* *pp* *p* *mp* *pp*

(.)

Fl. *bisb.* (.)

Gl. Triangle

Vln arco 3:2 gliss. 3:2

Ob. pizz. 3:2

Picc. Tpt 3:2

Vln pizz. 3:2

Fl. 3:2 5:4 f mp mf f mp pp <mp> pp mp mp mf p <mf> p

Tb. Temple Blocks Glockenspiel

Vln 3:2 pizz. arco pizz. arco 3:2

Ob. 3:2 mf pp p <mf> p

Picc. Tpt 3:2 mf >p pp 3:2

Vln 3:2 mf pp p <mf> p

Fl. (51) *(J)*
sfp *ppp* *p* *ppp* *mf* *f* *mp* *pp* *bisb.* *(J)* *mf* *pp*

Gl. Triangle Cowbell
p *pp* *mp*

Vln pizz. arco
p *mf* *f* *mf*

Ob. *tr* *mp* *pp*

Picc. Tpt *mp*

Vln arco
p *pp* *mp*

Fl. (54) *tr* *tr* *tr* *tr* *p* *ppp* *p* *ppp* *f* *3:4* *sffz* *3:2* *pp* *mp* *3:2* *p*

Gl. Glockenspiel Temple Blocks Triangle
pp *ppp* *pp* *mf* *arco jeté* *f* *pp* *mf*

Vln *tr* *p* *ppp* *mf* *arco jeté* *f* *pp* *mf*

Ob. *tr* *mp*

Picc. Tpt *tr* *mp* *mute* *tr* *mp*

Vln *tr* *mp*

Fl. *mf* — *mp* — *f*

Glockenspiel *mf* — *p*

Vln pizz. *mf* — *f*

Ob.

Picc. Tpt *pp*

Vln pizz. *3:2:8* — *pp*

Fl. *p* — *mf* — *ff*

(8) *pp* — *mfz* — *ppp* — *p* — *pp* — *mp*

Temple Blocks

Triangle

Crotales

Triangle

Temple Blocks

Gl.

Vln pizz. *arco* — *f*

II *ppp* — *mp* — *ppp*

sul pont.

Ob. *p* — *mf*

mute off

Picc. Tpt *mp*

Vln pizz. *3:2:8* — *3:2:8*

Fl. *sfz* *mf* *p* *f*

Tb. Triangle Cowbell Temple Blocks Triangle Crotales

Vln pizz. *mf* *mp > p* *pp* *mp* *p*

Ob.

Picc. Tpt *pp* *mp*

Vln arco *pp* *mp* *mf*

Fl. *mf* *mp* *f* *mf* *f* *p* *mfz* *mf* *mp*

Crot. Triangle Crotales

Vln pizz. *mf* *mp* *f* *mf* *pp* *mf* *p* *pp*

Ob. *mp* *pp* *mf* *p*

Picc. Tpt *mf* *p*

Vln pizz. *mf* *p* *pp* *mp* *p*

Fl. *mfp* — *ff* bisb. (♩) *f* — *mp* bisb. (♩) *f* — *mf*

Tr. Triangle Cowbell Triangle Temple Blocks

Vln *f* (♩) pizz. arco *p*

Ob. *p* *pp* 32: — *mp*

Picc. Tpt *mp* *pp* 32: — *mp*

Vln *mp* *pp* 32: — *pp* *mfz* — *pp*

Fl. *mf* 32: — 32: — *fff* (11) *mf* *p* *mf* 5:4: — 5:4: — 6:4: — *f*

Cb. Cowbell Triangle Temple Blocks

Vln *p* 32: — *mp* pizz. arco 5:4: — *mf* — *f*

Ob. *mp* — *mf* *f* *pp* *mf*

Picc. Tpt *mp* — *mf* 32: — *f* *p* *mp*

Vln *mf* 32: — 32: — *pp* pizz. arco *p* *p* — *p*

78

Fl. *mf* *f* cresc. poco a poco ...

Glockenspiel *p*

Vln *mp* *mf* *p*

Ob. *mp* *p*

Picc. Tpt

Vln *mp* *mf* arco

Fl. *5:4:1* *3:2:1* *5:4:1* *7:4:1* *ff* *fff*

Gl. *f*

Vln *mf* *f* *mf* *f*

Ob. *mf* *f*

Picc. Tpt *mf* *f*

Vln pizz. *mf* arco *f*

as fast as possible

Fl. 80 *fff* 5:4 *fff*

Gl. 5:4 *ff* arco

Vln. *ff* *sforzando semper* 3:2 5:4 3:2 5:4

Ob. *ff*

Picc. Tpt. 3:2 5:4 *ff* *mf* *ff*

Vln. pizz. *ff* *ffff*

Fl. 82 (12) *pp* *mf* *p* *pp* *mf*

Tb. Temple Blocks *mp* Glockenspiel *pp*

Vln. pizz. *mp* *mf* *p* *mp* *pp*

Ob. *>mp* *mp* *pp* *p*

Picc. Tpt. *mp* *mp* *p*

Vln. *mp* *mp* *mp* *mp* *mp*

Fl. *tr* ~~~ 13
mp — *pp* — *mf* — *p* — *f*
mf — *p* — *p* — *pp*

Gl. 3:2 3:2 3:2 3:2
p — *ppp* — *mp* — *p*
pp — *mp* — *p*
pp — *ppp* — *pp* — *pp*
pp — *ppp* — *pp* — *ppp*

Vln pizz. arco 3:2 3:2 3:2 3:2
p — *ppp* — *mp* — *pp* — *mf* — *pp*
pp — *pizz.* arco *tr* ~~~ *tr* ~~~
ppp — *pp* — *ppp*

Ob. *pp*

Picc. Tpt *pp*

Vln pizz. arco 3:2 3:2 3:2 3:2
pp — *pizz.* arco *tr* ~~~ *ppp*

Fl. *tr* ~~~ (.) 5:4 3:2
ppp — *pp* — *mp* — *p* — *pp*
ppp — *mp* — *pp* — *pp*

Tr. Cowbell Triangle Crotales
pp — *pp* — *pp* — *pp*
pp — *pizz.* — *pp* — *pp*
pp — *pp* — *pp* — *pp*

Vln sul pont. 3:2 3:2 3:2 3:2
ppp — *pp* — *pp* — *pp*
pp — *pizz.* — *pp* — *pp*
pp — *pp* — *pp* — *pp*

Ob.

Picc. Tpt

Vln

Fl. *p* *mf* *tr* *3:2* *9:4* *mp*

(14) *p* *pp* *3:2* *tr* *3:2* *3*

Crot. Temple Blocks *p* Triangle *ppp* *3*

Vln *p* *mp* *p* *ppp* *3*

Ob. *pp* *tr* *3:2* *3*

Picc. Tpt mute *pp* *tr* *3:2* *3*

Vln *p* *mp* *p* *ppp* *tr* *3*

Fl. *pp* *mp* *7:4* *pp* *pp* *mfz* *p* *p* *pp*

Glockenspiel Gl. *p* *pp* *Triangle* *arco* *tr* *3*

Vln *p* *ppp* pizz. *ppp* *3*

Ob. *ppp* *3*

Picc. Tpt *ppp* *3*

Vln *p* *ppp* *pizz.* *3*

Fl. 95 *as fast as possible*

Glockenspiel
Temple Blocks
Glockenspiel

Tr. Vln. Ob. Picc. Tpt. Vln.

Fl. 98 bisb. (d) 3:2: 3:2: 3:2: 3:2:

Gl. Vln. Ob. Picc. Tpt. Vln.

Fl. 100 5:4 (.) bisb. (.) 3:2 f mf ff f mf

Glockenspiel Temple Blocks Crotales

Gl. pp mp mf

Vln pp mf p mp arco mf f mf

Ob. bisb. (.) (.) tr mp mf p

Picc. Tpt mp p 3:2 pp mf

Vln mp pp mf p mp sul pont. 3:2 gliss. mf f

Fl. 102 (16) bisb. (.) 3:2 5:4 6:4 mp mfz > mf f mp p < mf

Cowbell Crotales Triangle Glockenspiel

Cb. pp p mp mf p p

Vln pizz. mp mp mf mp mf

Ob. tr mp pp p

Picc. Tpt mp fp sub. mp

Vln pizz. 3:2 p ppp mf

105

Fl. *p* *pp* *mp* *pp* *mp* *p* *tr* *tr*

Gl. *p* *pp* *mp* *pp*

Vln pizz. *arco* *pizz.* *arco* III-----

Ob. *mf* *pp* *tr* *tr*

Picc. Tpt *pp* *tr* *tr*

Vln *arco* *pizz.* *arco* *pizz.* *tr* *molto vib.*

108

Fl. *ppp* *mp* *p* bisb. (♪) *pp*

Tr. Triangle Cowbell Triangle Cowbell Triangle

Vln (III)----- *p* *ppp* *pizz.*

Ob.

Picc. Tpt *tr*

Vln pizz.

2. Space

Musical score page 8, measures 1-8. The score includes parts for Piccolo, Crotales, Violin, Oboe, Picc. Trumpet, Violin, Picc. (measures 1-8), Glockenspiel, Vln, Ob., Picc. Tpt, and Vln.

Measure 1:

- Piccolo: whistle tone, molto vib., any multiphonic
- Crotales: sul pont.
- Violin: III ppp, pp, ppp, ord.
- Oboe: straight mute, pp, mp, pp
- Picc. Trumpet: straight mute, ppp, pp, ppp, pp, mp, pp
- Violin: III ppp, pp, ppp, pp, mp, pp

Measure 2 (Picc. part):

- pp cresc.
- Glockenspiel: ppp cresc.
- Vln: mf

Measure 3 (Ob. part):

- ppp, p, pp, mp, p

Measure 4 (Picc. Tpt part):

- ppp, p, pp, mp, 3:2, pp, mp, 3:2

Measure 5 (Vln part):

- sul pont., ord.

Space

22 (3)

Picc. *pp cresc. poco a poco*

Gl.

Vln *ord.*
III *ppp*

Ob. *pp* *tr* *pp* *pp* *mf* *pp*

Picc. Tpt *pp* *pp* *3:2* *ord.* *arco*

Vln *sul pont.* *pp* *3:2* *pp* *mf* *pp*

Picc. *5:4* *6:4* *5:4* *3:2* *5:4* *3:2*

Gl.

Vln *mf* *pizz.* *p*

Ob. *p* *mf* *p* *p*

Picc. Tpt *pp* *3:2* *mf* *p* *3:2*

Vln *sul pont.* *pp* *3:2* *mf* *pp* *mf* *ord.*

Space

28

Picc. *aeolian* *Jet Whistle* *aeolian*

Gl. *Triangle* *Crotales*

Vln *mf* *mp*

Ob. *mf* *p* *pp*

(J) *harmon mute*

Picc. Tpt *mp* *mf* *mp* *p* *mp* *p*

Vln *sfpz* *p* *mf*

Picc. *ord.* *aeolian* *ord.* *tr* *ord.* *f* *mp*

Crot. *Glockenspiel* *pp* *mp* *p*

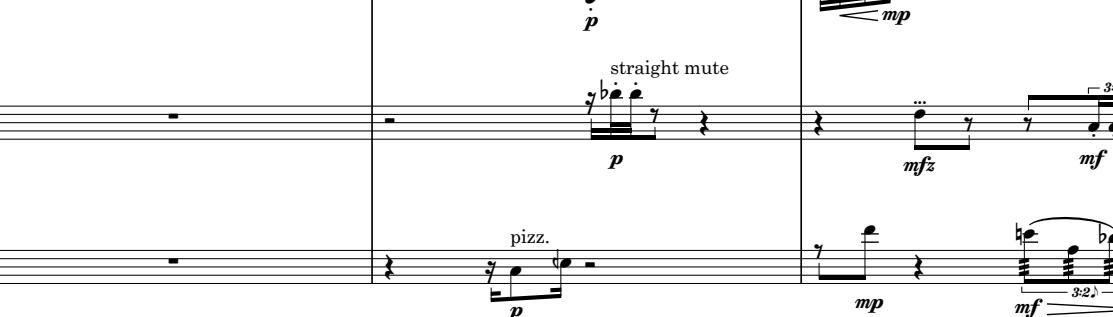
Vln *sul pont.* *p* *mp* *p* *pp* *mp*

Ob.

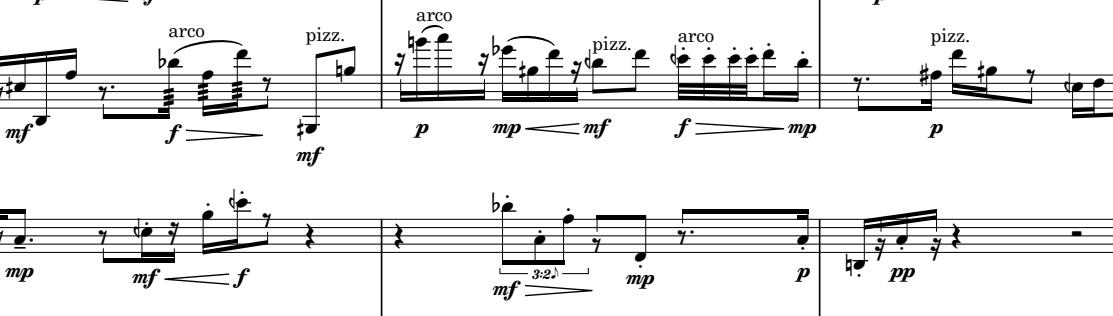
Picc. Tpt

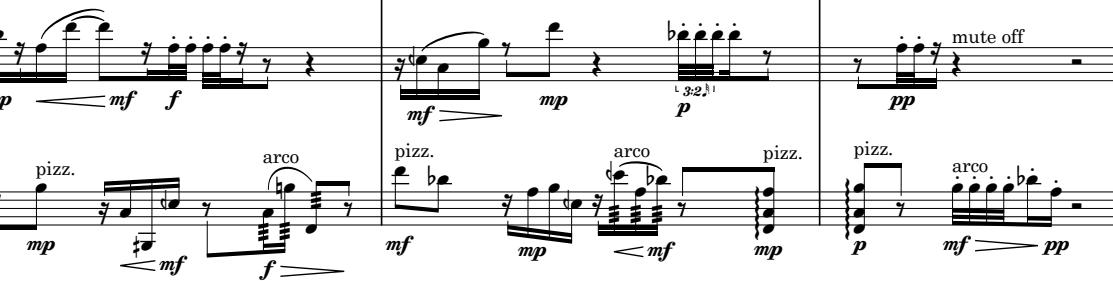
Vln

Picc. 

Gl. 

Vln. 

Ob. 

Picc. Tpt. 

Vln. 

Space

42 (6)

Picc. *mf*

Gl. *p*

Vln. *p* arco

Vln. *mf* pizz.

Vln. *p* arco

Vln. *mf* pizz.

Ob. -

Picc. Tpt -

Vln. -

43

Picc. *mf*

Gl. *mf*

Vln. *mp* arco

Vln. *mf* pizz.

Vln. *mf* arco

Vln. *6:4:1*

Ob. -

Picc. Tpt -

Vln. *p* 6:4:1

44

Picc. 

Gl. 

Vln. 

Ob. 

Picc. Tpt. 

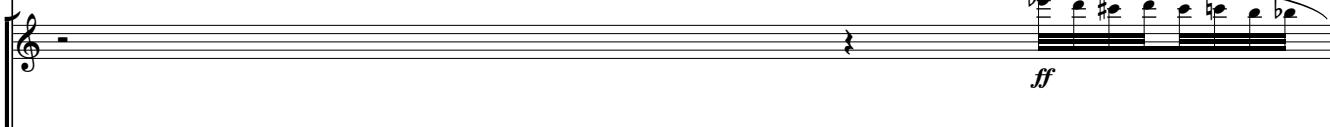
Vln. 

45

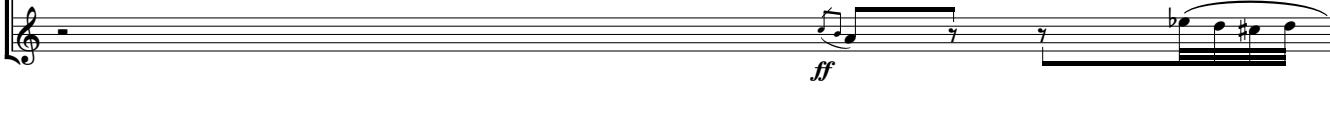
Picc. 

Gl. 

Vln. 

Ob. 

Picc. Tpt. 

Vln. 

Space

46

Picc.

Gl.

Vln.

Ob.

Picc. Tpt

Vln.

47

f dim. poco a poco

mf dim. poco a poco

mf dim. poco a poco

mp dim. poco a poco

mf dim. poco a poco

f dim. poco a poco

f sempre

f sempre

f sempre

50

Picc. 

Gl. 

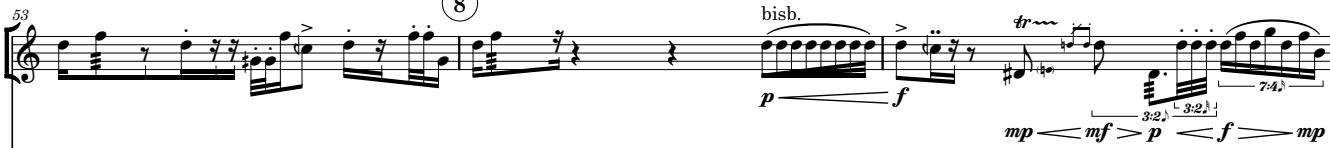
Vln. 

Ob. 

Picc. Tpt. 

Vln. 

(8)

Picc. 

Gl. 

Vln. 

Ob. 

Picc. Tpt. 

Vln. 

Space

Space

11

Picc. *ppp mp*

Crot.

Vln *ppp*

Ob. *ppp*

Picc. Tpt *ppp*

Vln *ppp*

Picc. 78 *3:2↓ aeolian pppp pppp*

Crot.

Vln *3:2↓ sul pont. ppp*

Ob. *tr pp*

Picc. Tpt *(harmon mute) pp mp pp*

Vln *gliss. gliss.*

12

whistle tone

molto vib.

3. Entropy

Bass Flute: *mf* (measures 1-6), *fp*, *mp*, *mf*, *mf*, *mp*
 Temple Blocks: *pp*, *mp > p*, *p*, *mp > p*, *mp*, *p*
 Violin: *pizz.*, *arco*, *pizz.*, *arc*, *pizz.*
 Oboe: *pp*, *mp > p*, *pp*, *mp > p*, *mp pp*, *p*
 Picc. Trumpet: *pp*, *mp > p*, *pp*, *mp > p*, *mp pp*, *p*
 Violin: *pizz.*, *arco*, *pizz.*, *arc*, *pizz.*
 B. Fl.: *fp*, *mf*, *mf*, *f*, *mf*
 Tb.: *mf*, *mp*, *p > pp*, *pp*, *pp mp*, *mp > p*, *mf*
 Vln.: *mf*, *mp*, *p > pp*, *pp*, *pp < mp*, *mp > p*, *mf*
 Ob.: *mf*, *mp*, *p > pp*, *pp*, *pp < mp*, *mp > p*, *mf*
 Picc. Tpt.: *mf*, *mp*, *p > pp*, *pp*, *pp < mp*, *mp > p*, *mf*
 Vln.: *mf*, *mp*, *p > pp*, *pp*, *pp < mp*, *mp > p*, *mf*

11

B. Fl. *f* *mf* *fp sub.* *mf*

Glockenspiel

Gl. *mp pp* *mf* *mp* *p > pp* *p < mp* *mf*

Vln *mp pp* *mf* *mp* *p > pp ppp* *p < mp* *pizz.* *mf*

Ob. *mp pp* *mf* *mp* *p > pp ppp* *p < mp* *mf*

Picc. Tpt *mp pp* *mf* *mp* *p > pp ppp* *p < mp* *mf*

Vln *mp pp* *mf* *mp* *p > pp ppp* *p < mp* *pizz.* *mf*

B. Fl. *p* *mf > mp* *mf* *mf > p* *f* *f = mf* *mp* *< mf*

16

Triangle

Glockenspiel

Cowbell

Gl. *p* *mf* *mp* *pp* *mf* *pp <* *p* *mf p*

arco *pizz.* *mp* *mf* *p* *pizz.* *mp > pp < mf* *pizz.* *mf p*

Vln *p* *mf > mp* *mf* *mp* *mf* *p* *mf > pp < mf* *mf p*

Ob. *p* *mf* *mp* *pp* *mf* *p* *mf* *p*

Picc. Tpt *p* *mf > mp* *mf* *mp* *mf* *p* *mf > pp < mf* *mf p*

Vln *arco* *pizz.* *arco* *pizz.* *mf* *p* *mf* *p*

20

B. Fl. *mp* *mf* *f* *mf* > *mp* *mp* < *f* *mf* *f* *mf*

Glockenspiel Temple Blocks Glockenspiel Triangle Cowbell Temple Blocks

Gl. *pp* *mf* *p* *p* *mf* *pp* *pp* *pp* *mp* *p* *p*

Vln arco *pizz.* arco *pizz.* arco *pizz.*

Ob. *p* < *mf* *mf* *p* *p* *mf* *pp* *pp* *mp* *p*

Picc. Tpt *mp* *mf* *p* *mp* *mp* *p* < *mf* *p*

Vln arco, *pizz.* arco *pizz.* arco *pizz.*

24

B. Fl. *mf* > *mp* *f* > *mp* *p* *mf* *mp* *f* *sfz* *f* > *mf* *mf*

Glockenspiel

Tb. *mp* *mf* *mp* *pp* *mf* *pp* *mp* *mp* *p* *mf*

Vln arco *pizz.* arco *pizz.* arco *pizz.* arco *pizz.*

Ob. *mp* *mp* > *pp* *mp* *pp* *mp* *mp* *p*

Picc. Tpt *mp* *mp* > *pp* *mp* *pp* *mp* *mp* *p*

Vln arco *pizz.* arco *pizz.* arco *pizz.* arco *pizz.*

Entropy

B. Fl.

27

Cowbell Glockenspiel

Cb. Vln. Ob. Picc. Tpt. Vln.

Pizz.

B. Fl.

32

Temple Blocks Triangle Glockenspiel

Gl. Vln. Ob. Picc. Tpt. Vln.

pizz. arco pizz. arco

arco pizz. arco pizz. arco

pizz. arco pizz. arco

pp

35

B. Fl. *f* *mp* <*mf* *f* >*mf* *mp* *mf* *mp* *p* *f* *mp* *f* *mf* >

Gl. Temple Blocks Triangle Cowbell

Vln pizz. *mp* >*pp* *mf* >*mp* *p* *mp* *p* *mf* *mp* *pp* *pp* 3:2)

Ob. *mp* >*pp* *mp* *mf* >*mp* *mp* *p* *pp* *mf* *mp* *pp* 3:2)

Picc. Tpt *mp* >*pp* *mp* *mf* >*mp* *p* *mp* *p* *mf* *mp* *pp* 3:2)

Vln pizz. *mp* >*pp* *mf* >*mp* *mp* *p* *mf* *p* *mp* *pp* *pp* 3:2)

B. Fl. *mf* *f* >*mp* *mf* *mp* *p* *pp* <*mf* *f* >*mf* *pp*

Glockspiel Cowbell Glockspiel Temple Blocks Triangle

Cb. *p* *pp* *p* *mf* *p* 3:2) *mf* > *p* *pp* *mf* > *pp* 3:2)

Vln pizz. *mp* >*p* *pp* *p* *mf* *p* *mf* *pp* 3:2) *mf* > *pp* 3:2)

Ob. *mp* >*p* *pp* *p* *mf* *p* >*pp* *p* 3:2) *mf* *pp* 3:2)

Picc. Tpt *mp* >*p* *pp* *p* *mf* *p* 3:2) *mf* > *p* *pp* *mf* *pp* 3:2)

Vln pizz. *mp* >*p* *pp* *p* *mf* *p* *p* *mf* > *pp* 3:2) *pizz.* *arco* *pp* 3:2)

Entropy

49

B. Fl. *bisb.* *tr.*
mp *p* *mp* *f* *mp* *f* *p* *mf* *p* *3:2* *f* *f*

Gl. Temple Blocks Glockenspiel
mp *p* *pp* *p* *pp* *mp* *p* *3:2* *f*

Vln pizz. arco
mp *pp* *f* *p* *pp* *p* *mp* *mf* *p* *f*

Ob. *mp* *p* *p* *pp* *mp* *p* *pp* *mp* *p* *3:2* *f* *p*

Picc. Tpt *mp* *p* *pp* *mf* *p* *pp* *mp* *p* *3:2* *f*

Vln pizz. arco pizz. arco
mp *p* *pp* *p* *pp* *p* *mp* *p* *pp* *f*

52

B. Fl. *p* *f* *mp* *mf* *f* *mp* *f* *mf* *mp* *f* *mp*

Gl. Cowbell Crotales
pp *mf* *mp* *mp* *mp* *mf* *p* *p* *mp*

Vln pizz. arco
pp *mf* *mp* *mf* *mp* *mf* *pp* *mf* *pp* *mf* *pp* *mf*

Ob. *pp* *mf* *mp* *pp* *f* *mf* *p* *sfz* *pp* *mf* *pp* *mf* *pp* *mf*

Picc. Tpt *pp* *mf* *mp* *mp* *mf* *p* *pp* *mf* *pp* *mf* *pp* *mf*

Vln pizz. arco
pp *mf* *mp* *sfz* *p* *mf* *p* *p* *pp* *mf* *pp* *mf*

Entropy

(4)

B. Fl. *f* *mp* *f* *mp* *ff* *f* *mf* *ff*

Crot. *Glockenspiel* *p* *f* *mf* *mf* *mp*

Vln. *pp* *mf* *pp* *mf* *pp* *mf* *ff* *f* *mf* *mp*

Ob. *pp* *mf* *pp* *mf* *pp* *mf* *p* *ff* *f* *mf* *mp*

Picc. Tpt. *pp* *mf* *pp* *mf* *pp* *mf* *p* *ff* *f* *mf* *mp*

Vln. *pp* *mf* *pp* *mf* *p* *ff* *f* *mf* *mp*

B. Fl. *f sempre*

Gl. *mp* *p* *pp* *mf* *mf* *mp* *p* *mf* *p*

Vln. *fp* *arco* *pizz.* *arco* *3:2* *pizz.* *3:2* *p*

Ob. *mp* *pp* *f* *mf* *pp* *mf* *p* *mf* *p*

Picc. Tpt. *mp* *pp* *mf* *mf* *pp* *mf* *p* *mf* *p*

Vln. *mp* *p* *f* *pp* *mf* *pp* *mf* *p* *mf* *p*

65

B. Fl. (Measures 65-70)

Gl. (Measures 65-70)

Vln. (Measures 65-70)

Ob. (Measures 65-70)

Picc. Tpt. (Measures 65-70)

Vln. (Measures 65-70)

Entropy

68

B. Fl. *f* *mf* *ff* *f* *pp* *3:2:1* *f* *ff*

Gl. *pp* *p*

Vln pizz. *mp* *p* *arco* *mf* *pp* *f* *pp* *3:2:1* *f* *pizz.*

Ob. *mf* *tr* *mf* *pp* *3:2:1* *f* *f*

Picc. Tpt *mf* *p* *pp* *f* *pp* *3:2:1* *f* *f*

Vln pizz. *mp* *pp* *arco* *pp* *3:2:1* *f* *pizz.*

B. Fl. *f* *sempre* *f* *mf*

Gl. *arco* *ppp cresc. poco a poco*

Vln *arco* *ppp cresc. poco a poco*

Ob. *ppp cresc. poco a poco*

Picc. Tpt *mute off* *ppp cresc. poco a poco*

Vln *arco* *ppp cresc. poco a poco*

78

B. Fl. *ord.*
pp cresc. poco a poco *p* *mp* *mf*

Gl. *p* *mp* *mf*

Vln *p* *mp* *mf*

Ob. *p* *mp* *mf*

Picc. Tpt *p* *mp* *mf*

Vln *p* *mp* *mf*

(.) (6)

82 (8)

B. Fl. *sffz* *sffz*

Gl. *f* *ff* *sffz* *sffz*

Vln *f* *ff* *sffz* *sffz*

Ob. *sffz* *sffz*

Picc. Tpt *f* *ff* *sffz* *sffz*

Vln *f* *ff* *sffz* *sffz*

Entropy

87

B. Fl. *sffz* *f* *mf* *f* *mp* *p* *mf*

Glockenspiel

Temple Blocks

Gl. *sffz* *f* *mp* *p* *pizz.* *mp* *mf* *arco* *pizz.* *mf* *arco* *p*

Vln *sffz* *mf* *p* *mf* *f* *p* *mf*

Ob. *sffz* *mf* *mp* *p* *mp* *mf*

Picc. Tpt *sffz* *mf* *mp* *p* *pp* *f*

Vln *sffz* *mf* *mp* *p* *mf* *gliss.* *p*

90

B. Fl. *p* *mf* *mp* *f* *mp* *p* *mf* *p*

Gl. *pp* *mp* *mf* *arco* *mp* *f* *pizz.* *p*

Vln *p* *pizz.* *mf* *pp* *f* *p* *mf*

Ob. *f* *pp* *f* *p* *mf* *mp* *f* *p*

Picc. Tpt *mp* *pp* *f* *mp* *arco* *mf* *pp* *f* *p* *pizz.*

Vln *pizz.* *mp* *f* *mf* *p* *mf* *gliss.* *p*

92

B. Fl. The B. Flute part consists of two staves. The first staff starts with a dynamic of *p*, followed by a series of eighth-note patterns with dynamics *mf*, *mp*, *f*, *mf*, *p*, and *mf*. The second staff begins with a dynamic of *pp*, followed by *f*, *p*, *f*, *p*, and *f*.

Gl. The first violin (Gl.) part features arco strokes with dynamics *p* and *mf*. It also includes pizzicato strokes labeled "pizz." and arco strokes labeled "arco".

Vln. The second violin (Vln.) part includes dynamics *pp*, *f*, *mp*, and *f*. It also features pizzicato strokes labeled "pizz." and arco strokes labeled "arco".

Ob. The oboe (Ob.) part includes dynamics *mf*, *mp*, *mf*, and *f*.

Picc. Tpt. The piccolo trumpet (Picc. Tpt.) part includes dynamics *mf*, *mp*, *f*, *mp*, *p*, and *fp*.

Vln. The second violin (Vln.) part includes dynamics *mf*, *f*, *mp*, and *p*. It also features pizzicato strokes labeled "pizz." and arco strokes labeled "arco".

94

B. Fl. The B. Flute part continues with dynamics *f*, *mp*, *p*, *p*, *mf*, *mp*, and *f*.

Gl. The first violin (Gl.) part includes dynamics *mf*, *pp*, *mp*, *p*, and *mp*.

Vln. The second violin (Vln.) part includes dynamics *f*, *mp*, *pp*, *mf*, *mp*, *p*, *gloss.*, *mp*, and *p*.

Ob. The oboe (Ob.) part includes dynamics *f*, *mf*, *p*, *pp*, *p*, and *mp*.

Picc. Tpt. The piccolo trumpet (Picc. Tpt.) part includes dynamics *f*, *p*, *mf*, *pp*, *mp*, and *mf*.

Vln. The second violin (Vln.) part includes dynamics *f*, *mp*, *pizz.*, *mf*, *p*, *pp*, and *mp*.

Entropy

96

B. Fl. *mf* *p* *p* *mp*

Gl. *p* *mf* *p* *pp*

Vln *arco* *mp* *p* *pp* *pizz.*

Ob. *p* *mp* *mf* *p* *pp* *mf*

Picc. Tpt *mute* *mp* *p* *mf* *p* *pp*

Vln *p* *mf* *mp* *pizz.* *pp* *arco*

mp

98

B. Fl. *p* *pp*

Gl. *ppp* *pp*

Vln *arco* *pp*

Ob. *pp*

Picc. Tpt *pp*

Vln *pp*