

Rhizaria (Barely_part-4)

Instructions

Rhizaria (Barely_part4) is a duet for cello and computer using four very close microphones and real-time sound processing.

The current version of *Rhizaria* requires a separate person to perform the computer part and interact with the cellist. (A future version may be designed for the cellist to steer the computer via a control interface). A technician is required at the main mixer to control the sound projection for the audience.

Technical requirements

- Three high quality miniature microphones (e.g. DPA-4060)
- One high quality contact microphone
- Dual-processor 2 GHz speed Intel Mac
- Audio interface for four inputs and four outputs
- Concert loudspeaker system (eight-channel, four-channel and stereo versions are available, along with a version for sound diffusion over alternative loudspeaker configurations)

Location of the microphones:

INSERT PICTURE HERE

Mixer configuration:

INSERT PICTURE HERE

Notation

Upper area of system = bow location and bowing style

Lower area of system = computer activity

Over the bridge (note the line above the bridge symbol)

T = *sul tasto*; P = *sul pont.* Line from T → P = continuous motion from one to the other.

w = with the wood. 'w' without a cross over the note = *tratto*.
'w' with cross over the note = *battuto*.

h = with the hair of the bow, but without the hair gripping the string. The result should be a very thin 'silvery' type of sound and clearly different from normal bowing at a *piano* dynamic. A moderately fast bow movement will help lead to this 'h' sound.

No note head = where the fingered pitch is not important (either because the note specifies a duration under a glissandi or because the bow is 'on' or 'behind' the bridge).

Depress note half way. Normally combined with 'h' or 'w' and a semi-pitched sound results. A moderately fast bow movement will help lead to this sound. Take care to see these note heads compared to normal notes.

Bow such that the wood is in front of the bridge and the hair is behind. Arrow indicates to move to bowing only behind the bridge. To do this, rotate the bow on the horizontal axis.

To play rapid changes of 'h' and 'w' try rotating the bow on the horizontal axis without lifting it from the strings.

Left hand hammer-on (here also with gliss)

Any very high note - (here also half pressed with the line through the note, and with gliss).

fb = particularly fast bow to emphasise gesture.

cross = cross strings to get from the lower to the upper note of the gliss.

Quarter-tone wobble while in glissando.

ppp *pp*

↑ LH-damp

Behind the bridge on string-I, *col legno battuto*, dampen note with left hand.

h

On the bridge on, specified strings.

(dampen open strings at head)

Heavily dampened (here also with tremolo)

nat. nat.

Motion of bow up and down string such that the bow 'sweeping' the string is more audible than note proper (in tempo of written note).

P

Sudden change of bow location by lifting bow off string.

'crushed' - play within the current dynamic (i.e. some 'crushed' notes will be of low volume)

Circular sweeping bow motion

Jeté!

Fast bow with rapid motion towards the bridge to create a *jeté* gesture.

SB

'Saw bow' - high-pressure motion along the string with clear start and stop.

mf

nat.

High texture ornament moving towards the bridge.

mp

(gliss-*Jeté!*)

W

Fast bow with rapid motion towards the bridge to create a *jeté* gesture and gliss with left hand.

nat.

On dampened notes, dampen all strings in any convenient position

Rapid random texture

• Also see extra performance / articulation text in the score



Rhizaria (Barely_part-4 - cello and computer). Version 3f

Natasha Barrett (2007/2008)

Cello

T molto
w

♩ = 54

pp

nat.

(tip bow to get the 'w-x')

IV III II II I II I

h w h w h w h

7:4

9/16

4/8

3

2/4

4+1/8

Computer

EA: -1 (State -1: record)

3/4

2/4

9/16

4/8

2/4

4+1/8

Cello

P

w → h

T

6

w

I

h

III (cross)

fb

fb (cross)

ppp

pp

Live EA solo, approx. 20 seconds

Live EA solo, approx. 20 seconds

5

3

3

4

2/4

computer

EA: 0 (State 0: record, autostop)

EA: 1 (State 1: transformation and play of states -1 and 0, plus pre-prep1)

EA: 2 (State 2: transformation and play of states -1 and 0)

4+1/8

7/8

4/4

2/4

Cello

P

nat

Start as soon as live EA ends

w

III

I LH-damp

nat

(dampen open strings at head)

10

ppp

p

pp

5:4

3

pp

3

3

3

3

3

3

4

computer

EA: 3 (State 3: auto record five segments)

record

2/4

3+2/8

3+3/8

4/4

Cello

36

LH pizz h

3

3

3

3

nat.

T

P

T

T

(into tremolo)

I T

II

keep distance same between fingers through gliss

computer

5/4

4/4

5/4

EA: 13 (State: 13, gesture pitch shift and filter, pre-prep 4)

record

Cello

40

h

3

3

nat.

IV

nat.

w

T

h

tr

ppp

mf

ppp

computer

5/4

EA: 14 (State: 14, gesture pitch shift and filter, pre-prep 5)

record

Cello

43

nat.

mp

mf

mf

Jeté!

SB

IV

3

3

p

(immediate!)

computer

5/4

3/4

6/8

record

5

Cello

46 I w (bounce) nat. T P

pp LH pizz (dampen in fifth position)

II III IV

mp nat. h P P

cross cross

3

mf

computer

EA: 15 (State: 15, gesture pitch shift and filter)

record

acell tremollo

Cello

51 Live EA solo, approx. 30 seconds

h T P

III IV

II III nat. T

pp mp

SA

3

p mf (immediate!)

molto

computer

EA: 16 EA: 17 EA: 18 EA: 19

(States: 16-19, layering and transformation of previously recorded segments. Pre-prep 6)

EA: 20

(State: 20, remove centroid, filter)

EA: 21

(State: 21, clear)

Cello

56 nat. w

mf (Go for speed, sacrifice tuning accuracy if necessary!)

pp

computer

Cello

57

w (clear and exact) nat.

mp

EA: 22 (State: 22, gesture pitch shift)

7:4

5+5+5 16

7:4

3

p

5:4

arco LH-pizz

EA: 23

computer

10 8

16 4

(State: 23, gesture pitch shift)

Cello

59

dampen high up, pizz

3:2

I II III IV

Live EA solo, approx. 25 seconds

(nat.)

w h w h

nat.

ppp

pp

EA: 24 (peak-trigger comb filter and volume, pre-prep 7)

computer

4 4

8 4 4

GRAN-TIGGER on noisey part

Cello

63

h nat

h nat

III IV

LH-pizz arco

I III

pp mp pp p

pp

w x

p

computer

4 4

nat. \nearrow P

nat. nat.

66 nat. *molto vibrato* 3

pp \wedge p \wedge pp

pp \wedge p \wedge pp

mp

w

LH-pizz arco h

III

nat LH-pizz arco p

Cello

computer

LH-pizz behind arco

I H

w

nat.

h nat h nat

pp

3 ppp

pp \wedge LH-pizz arco

nat. \nearrow P

h T T

70

Cello

computer

nat.

nat. C 3 C

pp

ppp

Jeté!

Jeté!

II III II II

(gliss-Jeté!)

w x

3

74

Cello

computer

P

nat.

APPROX

w

LH

88

II

mp

mf

3

3

3

3

3+3+8+1
4 16 16 16

w

w

nat.

3

w x nat.

mf

p

mf

EA: 27 (State: 26, transformation of previous recorded segments)

record

random and rapid bow position changes

P

h

nat.

fb

mf

p

mf

mp

3

3

3

3

Live EA solo, approx. 23 seconds

EA: 28

EA: 29

EA: 30

(States: 28-30, transformation of previous recorded segments)

P

nat.

T molto

w

I

96

pp

IV

III

II

II

I

II

I

h

w

h

w

h

w

h

w

h

7:4

I

I

3

EA: 31 (State: -1)

record

Cello

computer

EA: 32

EA: 33

EA: 34

EA: 35

nat

T

P

h

w

III

cross

fb

pp

mp

3

III

III

p

mf

8+1

pp

3

3

3

IV

5

7

3/4

8+1

5/4

Cello

computer

EA: 34

EA: 35

nat.

T

P

h

w

III

pp

mf

3

3

3

5

5/4

4/4

8/8

Cello

computer

EA: 35

nat.

T

P

h

w

III

pp

mp

3

3

3

III

mf

8

8

Cello

122

(pp)

c

3

c

II

p

pp

III

computer

Cello

126

ppp

c

IV

p

ppp

3

I

(ppp)

3

IV

III

computer

Cello

130

P

T

w

III

pp

h

nat.

h

nat.

I

II

p

LH-pizz arco

IV

ppp

III

3

mp

P

T

h

III

w

3

3

3

III

x

computer

Cello

computer

143

w nat

h nat

Jeté!

T h

T

P

p mp mp p mf p ppp mp

3:2

3

16

4/4 4/4 4/4 3/16 5/4

Cello

computer

147

T h

nat. Crushed

T

P

f (subito)

p (subito)

EA: 40

6:4 7:8 3 3 3 3 3 3

I II III

5/4 10/8 5/4 8/8

Cello

computer

150

nat.

II III

SA

SA

3 III IV

hammer-on with trem arco on I

LH- trem pizz dampended

h

5:4

LH-pizz

pp f (subito) pp PPP

EA: 41 EA: 42 EA: 43

5 3 3

5/8 3/4 4/4 3/4

154

Cello

computer

nat.

arco and fast LH-pizz dampened with thumb

col legno and fast LH-pizz dampened with thumb

SA SA

w nat

III II I

3 3 3

EA: 44

159

Cello

computer

↑ on IV on all unspecified notes

LH-pizz arco on I

f subito

C

EA: 45

EA: 46

w *col legno* and LH-pizz texture dampened with thumb

P T T T T

p

163

Cello

computer

nat.

pp (where possible)

IV

I II cross

T P

Cello

166

computer

IV

ppp

EA: 47

P

T

