

Through a Window

for 4-6 distributed performers and electronics

3 nodes

Naithan Bosse

(2017)

Through A Window

4-6 distributed instruments and electronics
3 locations
Year: 2017
Duration: ~23 minutes

Movements

I. Stained Glass and Copper Wire	4 minutes
II. In Strange Lines and Distances	12 minutes
III. A Twisted Pair	7 minutes

Instrumentation

Sustaining soprano instrument 1
Ideal range: C4-C7.
Minimum required range: C4-G6.

Sustaining soprano instrument 2
Ideal range: F3-G6
Minimum required range: G3-G6.

Sustaining soprano instrument 3 (**optional**)
Range: C4-G6

Sustaining tenor instrument (**optional**)
Ideal range: C2-Bb5
Minimum required range: E2-C#5.

Percussion
- Mallet instrument
Range: F3-F5
- Unpitched percussion instrument(s)

Keyboard (acoustic or electronic)

- Additionally, each performer must have 1 party balloon and 1 mobile phone.
- When possible, soprano 1, percussion, and keyboard should be distributed to different locations.
- Several versions of each part have been created to accommodate a variety of instrumental ranges and transpositions. Choose the version that most closely matches your instrument.
- If the optional instruments are not present, several sections should be performed by other instruments. See the cue list below.

Performance Instructions

Latency

The amount of time needed to send sound from one location to another over a network can be significant enough that synchronizing with remote musicians becomes impossible. With such a delay, performing in perfect alignment in your own location will sound terribly behind the beat in the remote locations. Typically everyone will unintentionally slow down to compensate for the delay. I have included the following directions in the score to help navigate performance over long distances and to help mitigate the effects of the delay.

Anchor:



The musician acting as anchor is responsible for maintaining the tempo. The remote musicians align to the anchor musician's performance in their respective locations. As a result, the anchor musician will perceive the remote musicians as lagging behind the written score. It is the responsibility of the anchor musician to maintain the performance tempo without regard for the lagging remote musicians. If you find yourself decelerating while performing as anchor, you can compensate by performing with a slight and continuous accelerando. It is the responsibility of the non-anchor musicians to adapt to the acceleration in their own locations. Anchor sections are notated as cues in all parts.

Cue:

Since audio is transmitted more quickly than video over the network, visual conducting is ineffective. Several cues are embedded in the score (and parts) to help provide aural landmarks for all remote musicians. Cues should always be performed incisively and rigidly.

Clock-time

Several extended sections use stopwatches to measure time. A custom stopwatch mobile app allows computer 1 to remotely start, stop, and reset the stopwatch settings for all performers. The clock app should be open for the full performance. The clock rate can be increased or decreased to allow for slower rehearsal or faster performance while still displaying the correct clock-times.

Notation Legend

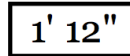
In clock-time sections: *A la note.*
 Accidentals modify only a single note plus any immediately following notes of the same pitch. (The figure is performed C#, B, C in clock-time sections)

In metered sections: Standard notation.
 Modified pitches remain modified for the duration of the bar. (The figure is performed C#, B, C# in metered sections).



Start timer: Computer 1 starts the stopwatch app.

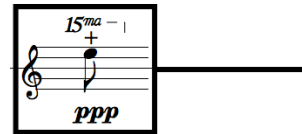
Time-code: Describes the running stopwatch time at the end of the current system and the start of the following system.



Duration bar: Hold note for length of the bar



Mobile: Repeatedly (or continuously) perform the boxed music segment for the length of time indicated by the duration bar.



Jitter cue: Perform the contents of the 'jitter' mobile anytime the jitter button flashes in the phone app.

Recite: Recite the indicated text in a near-whisper. Stand close to the mic.

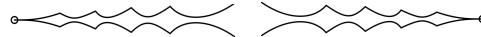
White noise: This can be interpreted in a variety of ways depending on your instrument. For example, a bowed string instrument may choose to interpret the direction by performing an extreme sul. pont. or by bowing the body of the instrument. A wind instrument may interpret the direction by performing a breath tone.



Dash arrow: Gradually modulate from one playing style to another.

Staccato -----> Legato

Pulsed crescendo/diminuendo: Perform several small crescendi/diminuendi embedded inside a larger-scale crescendo/diminuendo.



Slowly deflate balloon: Use the air stream to create a sound like ocean waves. Avoid directing the air stream directly into the microphone as this will create an overly bassy sound. Instead, direct the air-stream into the mic at an oblique angle.



Unpitched: Percussive. This can be interpreted in several ways depending on your instrument. A wind instrument may use key clicks while a bowed string instrument may pluck a muted string.



Muted: If performing on an acoustic piano, reach inside the body of the instrument and mute the string with your palm. Avoid exciting ringing harmonics.



Pitched: ●

Partially pitched: ◐

Unpitched: ○

Similar to the 'white noise' note-head, the pitched/partially-pitched/unpitched directions can be interpreted creatively based on what is appropriate for your instrument.

Accelerate



Feathered beams:

Decelerate

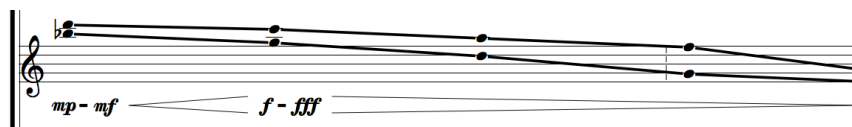


Highest possible pitch on your instrument:



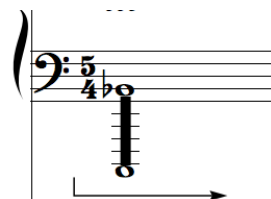
Pitch boundaries:

Improvise within the indicated pitch ranges.



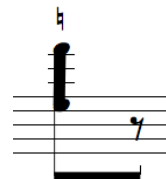
Chromatic Cluster:

Perform all pitches between the outer pitches (inclusive). (C1-Bb2 in the figure)



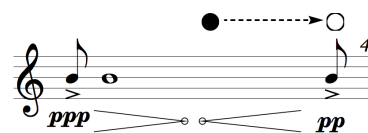
White-note cluster:

Signified by the natural sign above the cluster, perform all white-notes between the outer pitches (inclusive). (Treble clef E5-F6 in the figure)



Movement 1, pp. 3-9 and movement 3, pp. 61-66.

Each time you are instructed to perform a cell, select and perform one fragment from the available pool of cells notated above the staff as a numbered "generation." The cells are notated proportionally with the duration specified in seconds at the end of each cell. (The figure shows a 4 second long cell from generation 3).



Electronics

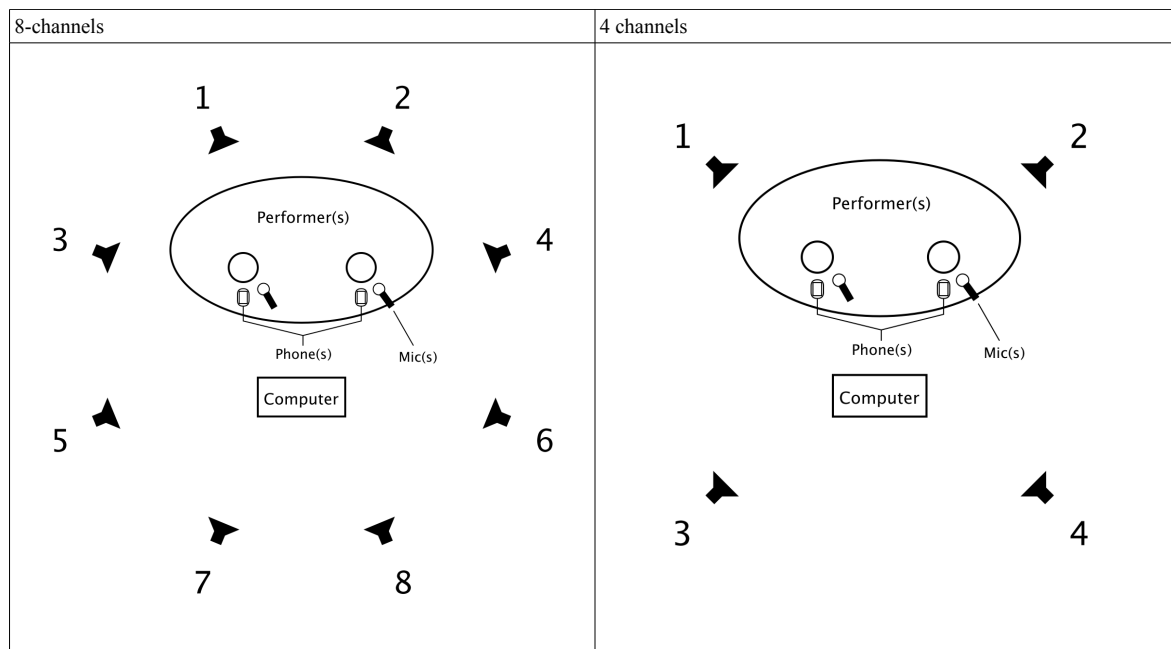
Hardware requirements

- 1 microphone per performer. (DPA mics are preferred)
- 1 phone per performer (including computer performers)
- At each location:
 - 1 computer
 - 8-channel audio system (4 channels is also possible)
 - High-speed wired internet connection (fiber-optic).

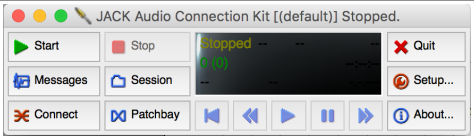
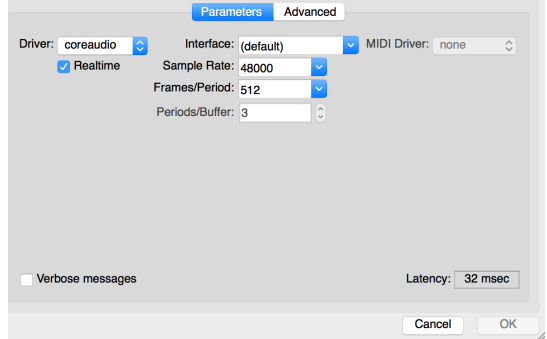
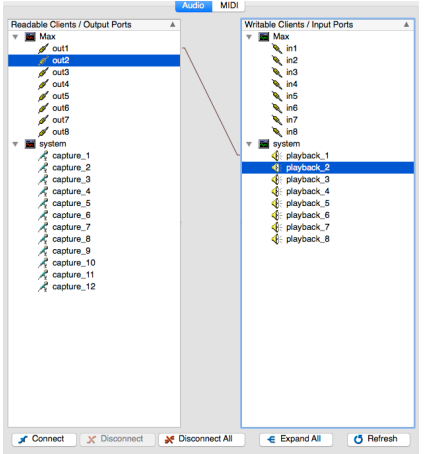
Software requirements

- Max performance patches (available at www.naithanbosse.com/ThroughAWindow)
 - TAW_node1.maxpat
 - TAW_node2.maxpat
 - TAW_node3.maxpat
 - nb.toolbox.zip
- MaxComm/Mira (available on the Apple App Store)
 - TAW.maxcomm
- Skype
- Jack Audio Connection Kit (with Qjackctl)
- Select one of the following and follow the corresponding setup instructions (below).
 - Jacktrip
 - ArtsMesh

Speaker configuration (stereo pairs)



Audio Setup – Jacktrip Version

<p>1. Make sure that Max is closed and you are connected to the correct network.</p>		
<p>2. Open QJackCtrl 3. Click “Setup”</p>		
<p>4. All nodes agree upon a Sample Rate and Frames/Period size. (Sample Rate: _____ Frames: _____) 5. Set “Driver” to coreaudio and click OK</p>		
<p>6. In the main window, click Start to activate the Jack server.</p>		
<p>7. Open Max and follow the setup instructions.</p>		
<p>8. Start a Skype call with the remote locations. 9. In QJackCtrl, open the Connect window. 10. When connecting to a remote node, Jacktrip will automatically cross connect your system input/output with the remote location. Make sure your audio levels are set low or even muted to avoid feedback.</p>		
<p>11. <u>Node 1:</u> In terminal, type “jacktrip -s -n2 -b24 -r3 --clientname node2” Wait until node 2 is ready and hit enter. Click “Disconnect all” in the QJackCtrl connect window.</p>	<p>11. <u>Node 2:</u> In terminal, type “jacktrip -c [enter node1 ip here] -n2 -b24 -r3 --clientname node1” Wait until node 1 is ready and hit enter. Click “Disconnect all” in the QJackCtrl connect window.</p>	
<p>12. <u>Node 1:</u> Open a new terminal window and type “jacktrip -s -n2 -b24 -r3 --clientname node3 -o10” Wait until node 3 is ready and hit enter. Click “Disconnect all” in the QJackCtrl connect window.</p>	<p>12. <u>Node 3:</u> In terminal, type “jacktrip -c [node1 ip here] -n2 -b24 -r3 --clientname node1 -o10” Wait until node 1 is ready and hit enter. Click “Disconnect all” in the QJackCtrl connect window.</p>	
<p>13. <u>Node 2:</u> Open a new terminal window and type “jacktrip -s -n2 -b24 -r3 --clientname node3 -o20” Wait until node 3 is ready and hit enter. Click “Disconnect all” in the QJackCtrl connect window.</p>	<p>13. <u>Node 3:</u> In terminal, type “jacktrip -c [node1 ip here] -n2 -b24 -r3 --clientname node2 -o20” Wait until node 2 is ready and hit enter. Click “Disconnect all” in the QJackCtrl connect window.</p>	
<p>14. Create the following audio connections in the Connect window in QjackCtrl by highlighting the desired inputs and outputs and clicking the connect button.</p>		
Node 1:	Node 2:	Node 3:
System receive 1-n => Max send 1-n	System receive 1-n => Max send 1-n	System receive 1-n => Max send 1-n
Max receive 1-8 => System send 1-8	Max receive 1-8 => System send 1-8	Max receive 1-8 => System send 1-8
Max receive 9-10 => Node 2 send 1-2	Max receive 9-10 => Node 1 send 1-2	Max receive 9-10 => Node 1 send 1-2
Max receive 11-12 => Node 3 send 1-2	Max receive 11-12 => Node 3 send 1-2	Max receive 11-12 => Node 2 send 1-2
Node 2 receive 1-2 => Max send 5-6	Node 1 receive 1-2 => Max send 5-6	Node 1 receive 1-2 => Max send 5-6
Node 3 receive 1-2 => Max send 7-8	Node 3 receive 1-2 => Max send 7-8	Node 2 receive 1-2 => Max send 7-8
<p>15. Follow the instructions in Max to perform sound-check.</p>		
<p>16. Mute Skype during performance.</p>		

Cue list

If either or both of the optional instrumental parts are missing, then the following excerpts should be covered by other instruments according to the list below. These cues are also notated and labelled in the appropriate parts.

A Copper Wire

Missing Instrument...	...at excerpt...	...is covered by
Soprano 3	0:00-0:24	Keyboard
Tenor	1:12-1:36	Computer 1

In Strange Lines and Distances

Missing Instrument...	...at excerpt...	...is covered by
Soprano 3	mm. 5-12	Computer 1
Tenor	mm. 6-13	Soprano 2
Tenor	mm. 22-33	Soprano 2
Soprano 3	m. 139	Percussion
Tenor	mm. 140-148	Percussion (transposed)
Soprano 3	m. 150	Keyboard
Soprano 3/Tenor	mm. 157-169	Computer 1 (change processing)
Tenor	m. 203	Keyboard
Soprano 3	m. 204	Percussion
Tenor	m. 206	Percussion/Soprano 2/Keyboard
Soprano 3	mm. 207-209	Percussion
Tenor	mm. 211-213	Computer 1
Tenor	mm. 215-219	Keyboard
Soprano 3	mm. 215-219	Soprano 2
Soprano 3	mm. 221-222	Soprano 1
Soprano 3	mm. 223-224	Soprano 2
Soprano 3	m. 233	Percussion
Soprano 3	mm. 238-268	Computer 2
Tenor	mm. 231-258	Computer 1
Tenor	m. 260	Keyboard
Tenor	mm. 264-269	Soprano 2 (transposed)
Tenor	mm. 273-274	Percussion (transposed)
Tenor	mm. 277-279	Soprano 1 (transposed)

A Twisted Pair

Missing Instrument...	...at excerpt...	...is covered by
Soprano 3	m. 2	Soprano 2
Soprano 3	m. 6	Percussion
Soprano 3	mm. 7-10	Keyboard
Tenor	mm. 16-19	Percussion
Soprano 3	mm. 40-71	Computer 1
Tenor	mm. 40-71	Computer 2
Soprano 3/Tenor	mm. 75-103	Soprano 2/Computer 1
Tenor	m. 129	Percussion
Tenor	mm. 133-134	Keyboard
Tenor	mm. 137-140	Keyboard
Tenor	mm. 141-146	Soprano 2
Tenor	mm. 149-152	Soprano 1

I. Stained Glass

Naithan Bosse

Time: -2'00" -1'00" 0'00"

Soprano 1

Soprano 2

Soprano 3

Tenor

Percussion 1

Keyboard

Computers 1-3

Soundfile playback: (node specific)

Balloon soundfiles:

A

Start timer

Time: Measure = 8 seconds 8" 16" 24"

Sop. 1

White noise

PPP

Sop. 2

Recite: The steps of a fly... ..give the sensation of a horse's tread... ..and even a fly's scream... ..audible... ..at the moment of death... ..rustling.

PPP

Sop. 3

Recite: The ticking of a watch... ..the receiver... ..vibratory movements... ..transmitted sounds... ..heard close... ..placed in communication

PPP

Ten.

White noise

PPP

Perc.

Recite: A copper wire... ..heard in the distance... ..a rumbling... ..transformed... ..crackling noise... ..ticking

PPP

Found object

Play once per "Jitter" cue (on screen)

PPP

Kbd.

15^{me} - 1

Play once per "Jitter" cue (on screen)

PPP

Preset 1

Computers 1-3

Balloons (continued)

Soundfile playback: Networked jitter

B

Time 32" 40" 48"

Sop. 1 Slowly inflate and deflate balloon. Direct airstream near microphone to create a sound like ocean waves.

Sop. 2 Slowly inflate and deflate balloon. Direct airstream near microphone to create a sound like ocean waves.

Sop. 3 Slowly inflate and deflate balloon. Direct airstream near microphone to create a sound like ocean waves.

Ten.

Perc.

Kbd.

Cptr. 1-3

Balloons (continued)

Soundfile playback (continued): Networked jitter

Time 56" 1' 04" 1' 12"

Sop. 1 Drop many small unpitched objects into a bowl (such as thumb tacks, marbles, rice, or sand)

Sop. 2 Unpitched Play once per "Jitter" cue (on screen) *p*

Sop. 3 Unpitched Play once per "Jitter" cue (on screen) *ppp* < *p* >

Ten. White noise Play once per "Jitter" cue (on screen) *ppp* < *p* >

Perc. Metal object Play once per "Jitter" cue (on screen) *p*

Kbd. *15^{me} - 1* Play once per "Jitter" cue (on screen) *p*

Cptr. 1-3

Preset 2

Balloons (continued)

Soundfile playback (continued): Networked jitter

Generation 1

Musical score for Generation 1, consisting of three staves. The top two staves are in treble clef and contain notes with a duration of 6". The bottom staff is in treble clef and contains notes with durations of 4" and 8". All notes are marked with *ppp* (pianissimo).

C

Time 1' 20" 1' 28" 1' 36"

Performance timeline for various instruments:

- Sop. 1:** Perform cell (1' 00" - 1' 08") and Perform cell (1' 28" - 1' 36").
- Sop. 2:** Perform cell (1' 08" - 1' 16"), Perform cell (1' 16" - 1' 24"), and Perform cell (1' 32" - 1' 36").
- Sop. 3:** Perform cell (1' 12" - 1' 20") and Perform cell (1' 28" - 1' 36").
- Ten.:** Musical notation with dynamics *pp* and *p*, and the instruction "Breathe when needed".
- Perc.:** Perform cell (1' 12" - 1' 20"), Perform cell (1' 24" - 1' 28"), and Perform cell (1' 32" - 1' 36").
- Kbd.:** Musical notation with dynamics *mf*.
- Cptr. 1-3:**
 - Preset 3
 - Delay bank with convolution feedback
 - Timestretch Factor: 8

Generation 2

Musical score for Generation 2, consisting of 16 staves. The notation includes various musical symbols such as notes, rests, and dynamic markings. The dynamic markings used are *ppp*, *sf*, and *mp*. Some staves include time signatures or durations in seconds (e.g., 4", 2", 6", 3").

Performance timeline and control panel. The timeline shows 'Time' from 0 to 2' 00" with markers at 1' 44" and 1' 52". The instruments listed are Sop. 1, Sop. 2, Sop. 3, Ten., Perc., Kbd., and Cptr. 1-3. 'Perform cell' boxes are placed on the instrument lines. The Kbd. line has a piano line from *p* to *mf*. The Cptr. 1-3 section lists 'Preset 4', 'Delay bank with spectral blurring', and 'Comb filter bank'.

Generation 3

A grid of 16 musical staves, arranged in 4 rows and 4 columns. Each staff contains a musical cell with various dynamic markings and durations. The dynamic markings include *ppp*, *pp*, *p*, *mf*, and *mp*. The durations are indicated by numbers followed by double quotes: 3'', 4'', and 6''. Some staves also feature a dot with a dashed arrow pointing to a circle, indicating a specific performance instruction.

Time

Measure = 5 seconds

2' 05"

2' 10"

2' 15"

A score layout for Soprano 1, Soprano 2, Soprano 3, Tenor, Percussion, Keyboard, and Ctr. 1-3. The layout includes 'Perform cell' boxes for Soprano 1, Soprano 2, Soprano 3, Percussion, and Keyboard. A 'Preset 5' box is located at the bottom left, containing the following settings:

- Harmonizer bank
- (Node 1: -700 500)
- Node 2: 100 900
- Node 3: 0 0)

Generation 4

Generation 4 musical notation includes four staves. The first staff has a triplet of eighth notes (3") with dynamics *p* and *pp*. The second staff has a quarter note (4") with dynamics *pp* and *p*. The third staff has a quarter note (4") with dynamics *pp* and *pp*. The fourth staff has a quarter note (3") with dynamics *pp* and a quarter note (4") with dynamics *pp*. Other staves show various rhythmic patterns and dynamics like *ppp* and *mp*.

D

Timeline diagram for Generation 4. The time axis is marked at 2' 20", 2' 25", and 2' 30". Node 1 has a "Perform cell" box from the start to 2' 20". Node 2 has a "Perform cell" box from 2' 20" to 2' 25". Node 3 has a "Perform cell" box from 2' 25" to 2' 30". Cptr. 1-3 is empty.

Generation 5

Generation 5 musical notation includes four staves. The first staff has a quarter note (3") with dynamics *p* and *pp*. The second staff has a quarter note (4") with dynamics *pp* and *p*. The third staff has a quarter note (4") with dynamics *pp* and *p*. The fourth staff has a quarter note (3") with dynamics *pp* and *p*. Other staves show various rhythmic patterns and dynamics like *p* and *pp*. A "gliss" mark is present on the second staff.

Timeline diagram for Generation 5. The time axis is marked at 2' 35" and 2' 40". Node 1 has a "Perform cell" box from the start to 2' 35". Node 2 has a "Perform cell" box from 2' 35" to 2' 40". Node 3 has a "Perform cell" box from 2' 40" to the end. Cptr. 1-3 has a "Preset 6" box with the following text: "Harmonizer bank (Node 1: -500 700 Node 2: 100 900 Node 3: 0 0)".

Generation 6

Musical score for Generation 6, consisting of 12 staves in a 4x3 grid. The notation includes various rhythmic patterns, dynamics (p, pp, mp), and articulation marks. Some notes are marked with a 'v' and a dotted line leading to a circle, indicating vibrato or a specific performance technique. The staves are numbered with time markers: 4", 1", 5", 4", 3", 4", 3", 4", 3", 3", 3", 3".

Time 2' 45"

Node 1 Perform cell

Node 2 Perform cell

Node 3 Perform cell

Cptr. 1-3

A timeline diagram for Generation 6. The vertical axis is labeled 'Time' and has a duration of 2' 45". The horizontal axis is divided into three nodes: Node 1, Node 2, and Node 3. Node 1 contains a box labeled 'Perform cell' starting at the beginning. Node 2 contains a box labeled 'Perform cell' starting at approximately 1' 15". Node 3 contains a box labeled 'Perform cell' starting at approximately 1' 45". Below the nodes is a section labeled 'Cptr. 1-3' which is currently empty.

Generation 7

Musical score for Generation 7, consisting of 12 staves in a 4x3 grid. The notation includes various rhythmic patterns, dynamics (p, mp), and articulation marks. Some notes are marked with a 'v' and a dotted line leading to a circle. The staves are numbered with time markers: 4", 4", 3", 4", 4", 4", 3", 4", 4", 4", 3", 4".

Time 2' 50"

Node 1 Perform cell

Node 2 Perform cell

Node 3 Perform cell

Cptr. 1-3

Preset 7

Harmonizer bank
 (Node 1: -700 700
 Node 2: -800 800
 Node 3: 0 0)

A timeline diagram for Generation 7. The vertical axis is labeled 'Time' and has a duration of 2' 50". The horizontal axis is divided into three nodes: Node 1, Node 2, and Node 3. Node 1 contains a box labeled 'Perform cell' starting at the beginning. Node 2 contains a box labeled 'Perform cell' starting at approximately 1' 15". Node 3 contains a box labeled 'Perform cell' starting at approximately 1' 45". Below the nodes is a section labeled 'Cptr. 1-3' which contains a box for 'Preset 7' with a harmonizer bank configuration: Node 1: -700 700, Node 2: -800 800, Node 3: 0 0.

Generation 8

Musical score for Generation 8, consisting of 12 staves of music. The notation includes various dynamics such as *p* (piano), *mp* (mezzo-piano), and *mp* (mezzo-piano). Articulations like accents (>) and breath marks (v) are present. Rhythmic markings include 3", 4", and 5".

Time 2' 55"

Node 1 Perform cell

Node 2 Perform cell

Node 3 Perform cell

Cptr. 1-3

Timeline diagram for Generation 8. It shows three nodes: Node 1, Node 2, and Node 3. Each node has a box labeled "Perform cell" indicating the duration of the performance. The total time is 2' 55".

Generation 9

Musical score for Generation 9, consisting of 12 staves of music. The notation includes various dynamics such as *p* (piano), *mp* (mezzo-piano), and *mp* (mezzo-piano). Articulations like accents (>) and breath marks (v) are present. Rhythmic markings include 2", 3", and 4".

Time 3' 00"

Node 1 Perform cell

Node 2 Perform cell

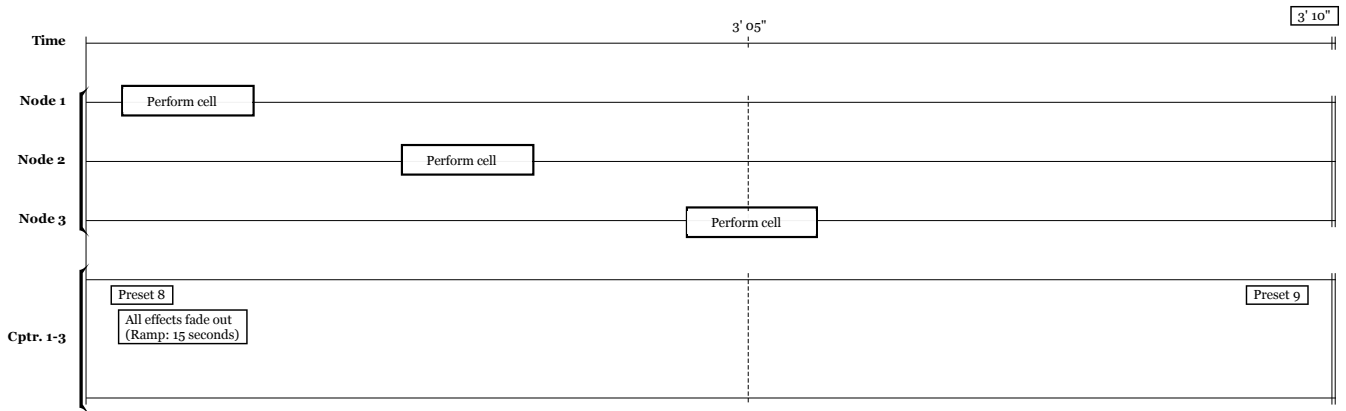
Node 3 Perform cell

Cptr. 1-3

Timeline diagram for Generation 9. It shows three nodes: Node 1, Node 2, and Node 3. Each node has a box labeled "Perform cell" indicating the duration of the performance. The total time is 3' 00".


Generation 10

The musical notation for Generation 10 is organized into a 4x3 grid. Each cell contains a musical staff with notes, rests, and dynamic markings (p, mp). Some cells include time markers like 4'', 2'', 3'', and 3'''.




II. In Strange Lines and Distances

$\text{♩} = 72$

Time $\frac{4}{4}$  Anchor: Sop. 1

swaying, as if you are floating amidst gentle waves
cantabile

Soprano 1  Solo, anchor
mp *poco* *mp* *mf* *mp* *p* *port.*

Soprano 2 *pp*

Soprano 3

Tenor

Percussion *Soft mallets*

Keyboard

Computer 1-3

$\frac{4}{4}$	Preset 10		
$\frac{4}{4}$	Inter-nodal delay: 1/16th note		
$\frac{4}{4}$	Delay: Perc: 6 beats	SF: S1 pitches cue sustained tones (F#, G#, A, C, D), Speedim: 500ms	
$\frac{4}{4}$	Harmonizer: S2 - +700 cents -> Convolution delay: 7 beats		Harmonizer: S3 - -700 cents -> Convolution delay: 6 beats
$\frac{4}{4}$	SF: Ambience continues		
$\frac{4}{4}$	Spatialization: S1: 1, 2, S2, 3, 5, S3, 7, 8, Tenor 2, 3, Perc. 6, 8, Kbd. 5, 7		

Time 5

Sop. 1 *p* *mf* *p* *mp* *mf* *p* *mf* *p*

Sop. 2 *pp*

Sop. 3 *pp*

Ten. *cantabile*
mp *mf* *pp* *mf* *p* *pp* *mf* *p*

Perc. *pp*

Kbd. *5*

Cptr. 1-3

$\frac{4}{4}$	Preset 11		
$\frac{4}{4}$	Delay: Kbd. 1 beat		

9

Time $\frac{3}{4}$ End anchor $\frac{4}{4}$

Sop. 1 *piu mosso* p mf fz $< f^3$ mp *subito* p End solo, end anchor $\frac{4}{4}$

Sop. 2 p $\frac{3}{4}$ $\frac{4}{4}$

Sop. 3 p $\frac{3}{4}$ $\frac{4}{4}$

Ten. p mp mf p mp p $\frac{3}{4}$ $\frac{4}{4}$

Perc. p $\frac{3}{4}$ $\frac{4}{4}$

Kbd. pp $\frac{3}{4}$ $\frac{4}{4}$

Cptr. 1-3 Preset 12 Harmonizer: Perc - +10 cents $\frac{3}{4}$ $\frac{3}{4}$ $\frac{4}{4}$ $\frac{4}{4}$

14

Time $\frac{4}{4}$ Anchor: Kbd. $\frac{3}{4}$ $\frac{4}{4}$

Sop. 1 $\frac{4}{4}$ $\frac{3}{4}$ $\frac{4}{4}$

Sop. 2 $\frac{4}{4}$ $\frac{3}{4}$ $\frac{4}{4}$

Sop. 3 $\frac{4}{4}$ $\frac{3}{4}$ $\frac{4}{4}$

Ten. $\frac{4}{4}$ $\frac{3}{4}$ $\frac{4}{4}$

Perc. $\frac{4}{4}$ $\frac{3}{4}$ $\frac{4}{4}$

Kbd. Solo, anchor like windchimes swaying in the wind p mp p mf p mf mf Use pedal liberally ad. lib. $\frac{4}{4}$ $\frac{3}{4}$ $\frac{4}{4}$

Cptr. 1-3 Preset 13 Delay with spectral blurring: Kbd. Timestretch: Kbd. $\frac{4}{4}$ $\frac{3}{4}$ $\frac{4}{4}$ $\frac{4}{4}$

18 End anchor $\frac{3}{4}$

Time $\frac{4}{4}$

Sop. 1 *p*

Sop. 2

Sop. 3 *p*

Ten.

Perc.

Kbd. *mp* *p* *pp* End solo, end anchor

Cptr. 1-3 $\frac{4}{4}$ $\frac{4}{4}$ $\frac{4}{4}$ G#5 triggers sample -> speedlim 200oms $\frac{3}{4}$ $\frac{3}{4}$ $\frac{3}{4}$

F ♩ = 96

22 Anchor: Ten.

Time $\frac{3}{4}$ $\frac{4}{4}$ $\frac{3}{4}$

Sop. 1 *pppp* *mp* *mf* *mp* *mf* *mp* *mf* *Soli*

Sop. 2

Sop. 3

Ten. *p* *mf* *p* *mf* *p* *Soli, anchor gently swaying, as if floating amidst waves*

Perc. Medium hard mallets *mp*

Kbd. *p*

Cptr. 1-3 $\frac{3}{4}$ $\frac{3}{4}$ $\frac{3}{4}$ Preset 14 Fade out processing (Ramp: 20 seconds) $\frac{4}{4}$ $\frac{4}{4}$ $\frac{4}{4}$

27

Time $\frac{2}{4}$ $\frac{3}{4}$ $\frac{2}{4}$ $\frac{3}{4}$

Sop. 1 *mf* *mp* *mf* *mp* *port.* *mf*

Sop. 2

Sop. 3

Ten. *pp* *mf* *mf* *mf*

Perc. *mp*

Kbd.

Cptr. 1-3 $\frac{2}{4}$ $\frac{3}{4}$ $\frac{2}{4}$ $\frac{3}{4}$

32

Time $\frac{3}{4}$ $\frac{3}{4}$ $\frac{3}{4}$ $\frac{3}{4}$

Sop. 1 *mf* *mp* *mf* *mp*

Sop. 2 *mf* *f* *mf* *f*

Sop. 3

Ten. *f* *mf* *f* *mf*

Perc. *mp*

Kbd.

Cptr. 1-3 $\frac{3}{4}$ $\frac{3}{4}$ $\frac{3}{4}$ $\frac{3}{4}$

End anchor

Anchor: Sop. 2

Soli, anchor

End solo, end anchor

15

Preset 15

Spatialization: S1 - 1,3,5, S2 - 2,4,6

45 G Delicate

Time Anchor: Kbd.

Sop. 1

Sop. 2 End solo, end anchor

Sop. 3

Ten.

Perc.

Kbd. Solo, anchor

Cptr. 1-3 Preset 17
Timestretch: Kbd.

49 H Forceful ♩ = 72

Time rall. End anchor

Sop. 1 Solo

Sop. 2 Solo

Sop. 3 Solo

Ten. Solo

Perc. Solo Hard mallets

Kbd. End anchor Cue

Cptr. 1-3 Preset 18
Inter-nodal audio: mute
Spatialization: All: All channels
Timestretch: Off
Harmonizer:
(Node 1: 400, -500, 700, 1200
Node 2: -1600, -900, -500, -1200
Node 3: -700, 500, 900, 1200)

54

Time $\frac{5}{4}$ $\frac{4}{4}$ $\frac{7}{8}$ $\frac{4}{4}$ $\frac{3}{4}$

Sop. 1 *fp* *mf* *f* *mf* *f*

Sop. 2 *fp* *mf* *f* *mf* *f*

Sop. 3 *fp* *mf* *f* *mf* *f*

Ten. *fp* *mf* *f* *mf* *f*

Perc. *fp* *mf* *f* *mf* *f*

Kbd. *mf* *f* *mf* *f*

Cptr. 1-3 $\frac{5}{4}$ $\frac{4}{4}$ $\frac{7}{8}$ $\frac{4}{4}$ $\frac{3}{4}$

I ♩ = 126

58

Time $\frac{3}{4}$ $\frac{4}{4}$ $\frac{3}{4}$ $\frac{7}{8}$ $\frac{6}{8}$

Sop. 1 *fp* *mf* *mp* *mf* *p* End solo

Sop. 2 *fp* *mf* *mp* *mf* *p* End solo

Sop. 3 *fp* *mf* *mp* *mf* *p* End solo

Ten. *fp* *mf* *mp* *mf* *p* End solo

Perc. *fp* *mf* *mp* *mf* *f* End solo Cue

Kbd. *mp* *mf* *p* End solo

Cptr. 1-3 $\frac{3}{4}$ $\frac{4}{4}$ $\frac{3}{4}$ $\frac{7}{8}$ $\frac{6}{8}$

Preset 19
 Inter-nodal audio: neutral
 Harmonization: Ramp off 6000;
 Spatialization: node-neutral

63 Anchor: Perc.

Time 6/8 | 2/4 | 6/8 | 2/4 | 6/8

Sop. 1 *Soli*
p *ppp* *p* *mp* *ppp* *p*

Sop. 2

Sop. 3

Ten.

Perc. *Lightly*
Soli, anchor
p *mp* *p*

Kbd.

Cptr. 1-3
Preset 19
Soundfile bank (node-specific)

68

Time 6/8 | 2/4 | 6/8 | 2/4 | 3/4

Sop. 1 *mf* *p* *pp* *mf* *f* *pp* *mp*

Sop. 2

Sop. 3

Ten.

Perc. *mp* *p* *mp* *p*

Kbd.

Cptr. 1-3

73

Time $\frac{3}{4}$ $\frac{5}{8}$ $\frac{6}{8}$ $\frac{2}{4}$ $\frac{6}{8}$

Sop. 1 *p* *mf* *fp* *mf* *p*

Sop. 2 *mp*

Sop. 3 *mp*

Ten. *mp*

Perc. *mf* *p* *mf* *p*

Kbd. *mp*

Cptr. 1-3 $\frac{3}{4}$ $\frac{5}{8}$ $\frac{6}{8}$ $\frac{2}{4}$ $\frac{6}{8}$

79

Time $\frac{6}{8}$ $\frac{5}{8}$ $\frac{7}{8}$ $\frac{5}{16}$ $\frac{2}{4}$ $\frac{3}{4}$

Sop. 1 *p* *mf* *p* *f* *mf* *mp*

Sop. 2

Sop. 3

Ten.

Perc. *p* *mf* *p* *mf* *mp*

Kbd.

Cptr. 1-3 $\frac{6}{8}$ $\frac{5}{8}$ $\frac{7}{8}$ $\frac{5}{16}$ $\frac{2}{4}$ $\frac{3}{4}$

85

Time 3/4 | 5/8 | 7/8 | 2/4 | 5/8

Sop. 1 *p f p mf pp*

Sop. 2 *pp*

Sop. 3

Ten.

Perc. *p mp f p*

Kbd.

Cptr. 1-3 3/4 | 5/8 | 7/8 | 2/4 | 5/8

90

Time 5/8 | 7/8 | 5/16 | 2/4 | 9/16

Sop. 1 *mf fp*

Sop. 2 *mp p mf*

Sop. 3

Ten.

Perc. *mf f p*

Kbd.

Cptr. 1-3 5/8 | 7/8 | 5/16 | 2/4 | 9/16

J

95

Time $\frac{9}{16}$ $\frac{6}{8}$ $\frac{7}{8}$ $\frac{6}{8}$ $\frac{3}{4}$

Sop. 1 *f* *mp* *mf*

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3 $\frac{9}{16}$ $\frac{6}{8}$ $\frac{7}{8}$ $\frac{6}{8}$ $\frac{3}{4}$

100

Time $\frac{3}{4}$ $\frac{5}{8}$ $\frac{6}{8}$ $\frac{7}{8}$ $\frac{2}{4}$

Sop. 1 *mp* *p* *mp* *fp* *f*

Sop. 2

Sop. 3

Ten.

Perc. *mp* *p* *mp* *f* *p* *piu mosso*

Kbd.

Cptr. 1-3 $\frac{3}{4}$ $\frac{5}{8}$ $\frac{6}{8}$ $\frac{7}{8}$ $\frac{2}{4}$

105

Time 2/4 3/4 2/4 4/4 6/8

Sop. 1 *p* *mp* *fp* Ω

Sop. 2 *pp*

Sop. 3 *pp*

Ten. *pp*

Perc. *mp* 5 *mf* l.v.

Kbd. *pp* 5

Cptr. 1-3 2/4 3/4 2/4 4/4 6/8

110

Time 6/8 3/4 5/8 7/8

Sop. 1 *mp* *mf* *mp* *fp* *mf* *mp*

Sop. 2

Sop. 3

Ten.

Perc. *p* *f* *p* *mp* 5

Kbd.

Cptr. 1-3 6/8 3/4 5/8 7/8

piu mosso

116

Time $\frac{7}{8}$ $\frac{3}{8}$ $\frac{6}{8}$ $\frac{5}{8}$ $\frac{2}{4}$ $\frac{6}{8}$

Sop. 1 *mf* *p*

Sop. 2 *pp* *p*

Sop. 3

Ten. *pp*

Perc. *mf* *mp* *p* *f*

Kbd.

Cptr. 1-3 $\frac{7}{8}$ $\frac{3}{8}$ $\frac{6}{8}$ $\frac{5}{8}$ $\frac{2}{4}$ $\frac{6}{8}$

121

Time $\frac{6}{8}$ $\frac{3}{4}$ $\frac{3}{4}$ $\frac{3}{4}$

Sop. 1 *f* *mp* *Anchor*

Sop. 2 *f* *mp*

Sop. 3 *p* *f*

Ten. *f* *p* *p* *f*

Perc. *f* *ff* *End soli, end anchor*

Kbd. *f*

Cptr. 1-3 $\frac{6}{8}$ $\frac{3}{4}$ $\frac{3}{4}$ $\frac{3}{4}$

[K] $\text{♩} = 126$

Anchor: Sop. 1

End soli

Anchor

Cue.....

125

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

130

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

135

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

140

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

145

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cprtr. 1-3

150

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cprtr. 1-3

L

Time 155

End anchor $\frac{2}{4}$ $\frac{3}{4}$ Anchor: Kbd.

Sop. 1 *ff* *f* *sim.*

Sop. 2 *ff* *f* *sim.*

Sop. 3 *f* *sim.*

Ten. *f* *sim.*

Perc.

Kbd. Cue *f* Soli, anchor

Cptr. 1-3

$\frac{2}{4}$	$\frac{3}{4}$	Preset 20 Delay: Sop 1, Sop 2, Sop 3, Ten Gain: 10% Time: 143ms
$\frac{2}{4}$	$\frac{3}{4}$	
$\frac{2}{4}$	$\frac{3}{4}$	

Time 160

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc. *ff* Soli

Kbd.

Cptr. 1-3

165

End anchor

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

Reverb: Fade to large hall?

M ♩ = 104

170 Anchor: Sop. 1

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

Anchor

Medium mallets

pp

p

Preset 21

Delay->Harmonizer: Perc., Kbd.

Delay time: 3396

Delay feedback: 0.1

Cents: 1200

176

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

181

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

186

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

Dynamics: *p*, *mp*, *pp*

Annotations: *Su*, *5*, *3*

190

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

Dynamics: *mp*, *p*, *pp*

Annotations: *3*, *5*

194

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

Preset 22
Delays: 0
Gain: 0
Ramp: 10'

199

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

End anchor

N Start timer

203 Measure = 2.5 seconds

7.5"

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Cue.....

Kbd.

Cptr. 1-3

Preset 23
Spectral delay: All
Gain: Follow ramp

206

15"

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

209

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

212

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

O

215

375"

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

Spatialization: S2 - Left, Kbd. - Right, S3 - Back

218

45"

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

221

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

224

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

1'07.5"

227

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

Time stretch: Record

Time stretch: All Play, playrate = 0.7

P

1'15"

230

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

Time stretch playrate: 0.8

Q

1' 45"

239 System = 15 seconds
Measure = 3.75 seconds

1' 37.5"

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc. Medium mallets

Kbd.

Cptr. 1-3

Preset 24
Spatialization: Medium swarm
Soundfile: Crotales

2' 00"

243

1' 52.5"

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

Spatialization: Percussion: Front

247 System = 7.5 seconds

Measure = 2.5 seconds

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

fpp *p* *pp*

fpp *p* *fpp*

fpp *mp* *pp*

p

mf *mp*

250

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

fpp *mp* *fp* *mp*

mp *pp* *mp* *fp* *mf* *fp*

fp *mp* *fp* *mp* *mf*

p

2' 30"

253 System = 15 seconds

Measure = 3.75 seconds

Sop. 1 *mp* *ppp* *mp*

Sop. 2 *mp < mf*

Sop. 3 *mp* *ppp*

Ten. *mp* *ppp*

Perc. *fp* *mf* *pp* *mp*

Kbd.

Cptr. 1-3

2' 45"

257

Sop. 1

Sop. 2 *mp*

Sop. 3

Ten.

Perc. *pp* *mf* Hard mallets

Kbd. *mf*

Cptr. 1-3

Preset 25

Harmonizer: Kbd.

Glide to pitch: 12 seconds

Cents: 50, 700, 1200, 1800

261 System = 7.5 seconds

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

264

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

3' 7.5"

267

Time

legato → staccato

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

3' 15"

270

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

282

Time

modulate beat position

sim.

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

287

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

292

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

297

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

Soundfiles: processed crotales

mf

sim.

T

302

Time

Sop. 1
ppp *p*

Sop. 2
p *ppp*

Sop. 3
p *ppp*

Ten.

Perc.
mf 5

Kbd.

Cptr. 1-3

307

Time

Sop. 1
ppp *mp* 3 3 3 3 3

Sop. 2

Sop. 3
ppp

Ten.
Cue *mf* *p* 3

Perc.
p *mf*

Kbd.

Cptr. 1-3

312

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

Soundfile: fluctuating bell tones

sim. ad. lib.

mp *mf* *p* *ppp*

317

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

mf *p* *mf* *f*

322

Time

Sop. 1

Sop. 2 *mp*

Sop. 3

Ten. *mf*

Perc. *mp*

Kbd. *ppp*

Cptr. 1-3

327

Time

Sop. 1

Sop. 2

Sop. 3

Ten. *End anchor*

Perc. *End anchor*

Kbd. *End anchor*

Cptr. 1-3

U **Evanescent**

Start timer

9"

332 Measure = 3 seconds

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

Medium mallets

mf

ppp

Soundfile: pulsating pitch drone

all notes, independent slow wide vibrato/bend

18"

335

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

mp

mf

p

mp

6

338

27"

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

341

36"

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

344

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

mf

mp

f

p

mf

p

347

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

mf

mf

ppp

mp

mf

III. A Twisted Pair

$\text{♩} = 144$

Time 5"

Start timer
Measure = 5 seconds

Soprano 1
mf *f* *mf* *f* *mf*

Soprano 2

Soprano 3
ff

Tenor
ff

Percussion
ff

Keyboard
ff Cue.....;

Computer 1-3

Preset 27
Delay: Sop. 1, Sop. 2
Gain: 5
Time: 52, 104
HPF: Sop 3, Ten., Perc.
Mix: 0.9
Freq: 300
Q: 0.73

Time 10"

3

Sop. 1
f *mf* *f* *mf* *f*

Sop. 2
mf *f* *mf* *f*

Sop. 3
f

Ten.
f

Perc.
p *f*

Kbd.
f

Cptr. 1-3

15"

20"

4

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

V

25"

6

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

7 30"

Time

Sop. 1 *p* *poco a poco cresc.*

Sop. 2

Sop. 3 *f*

Ten.

Perc.

Kbd.

Cptr. 1-3

8 35"

Time

Sop. 1 *mf*

Sop. 2 *mp*

Sop. 3 *ff*

Ten. *ff*

Perc. Cue..... *ff*

Kbd.

Cptr. 1-3

9

Time

Sop. 1

poco a poco cresc.

Sop. 2

poco a poco cresc. *mf*

Sop. 3

f

Ten.

Perc.

f

Kbd.

Cptr. 1-3

10

Time

Sop. 1

ff

Sop. 2

ff *mf*

Sop. 3

Ten.

pp *ff*

Perc.

pp *ff*

Kbd.

Cptr. 1-3

W 12 50"

Time

Sop. 1 *mp*

Sop. 2 *f*

Sop. 3

Ten. *mp* *f* *mp*

Perc. *f*

Kbd.

Cptr. 1-3

13 55"

Time

Sop. 1 *poco a poco cresc.*

Sop. 2 *mp* *poco a poco cresc.*

Sop. 3 *f*

Ten.

Perc. *mf* *f*

Kbd. *mf* *f* *mf* *f* *mf*

Cptr. 1-3

1'00"

14

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

ff *f* *ff* *f* *f* *mf* *f* *mf* *f*

Cue

1'05"

16

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

ff *pp* *ff* *pp* *ff* *mf* *f* *mf* *f* *mf*

Any unpitched *f*

17 1' 10"

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

18 1' 15"

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

19 1' 20"

Time

Sop. 1 *fff* *mf* *fff*

Sop. 2 *fff*

Sop. 3 *fff*

Ten. *fff*

Perc. *fff* Cue

Kbd. *fff*

Cptr. 1-3

X Swarm; Unrelenting 1' 24" 1' 28"

20 Measure = 4 seconds

Time

Sop. 1 Rapidly improvise chromatic pitches within the specified range. *mp* *f* *mp*

Sop. 2 Rapidly improvise chromatic pitches within the specified range. *mp* *f* *mp*

Sop. 3 Rapidly improvise chromatic pitches within the specified range. *mp* *f* *mp*

Ten. Rapidly improvise chromatic pitches within the specified range.

Perc. Rapidly improvise chromatic pitches within the specified range. *mp* *f* *mp* *f* Cue

Kbd. Rapidly improvise chromatic pitches within the specified range. *mp* *f* *mp*

Cptr. 1-3

Preset: 27	Granulator: All	Harmonizer: All
Probability gate: 42	Transposition: 20-300hz	Glide: 10 seconds
Grain duration: 64ms-66ms	Cents: 200, -200, 300, -300	
Spatialization: Randomized wipes between channels		

Tempo giusto ♩ = 144
As aligned as practically possible

Anchor: Sop. 1

Time 22

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

Preset: 28

Harmonizer: All
Glide: 100ms
Cents: 2 3 4 5

Delay bank: All
Gain: 20
Time: 26 52

Granulator: Off

Spatialization: Node neutral

Time 26

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

30

Time $\frac{5}{16}$ $\frac{9}{16}$

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

34

Time $\frac{2}{4}$ End anchor

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

Z Swarm

Start timer

All instruments

- Improvise. Distribute pitches evenly within indicated range.> Gravitate towards the outer edges of the indicated range
- Rapid and unrelenting; Like a river of notes.> *poco a poco rit.*> Sparse
- Legato (legato)> staccato> Change articulation every note.
- Smooth dynamic fluctuations.> accent random notes infrequently> Change dynamic every note.

38

30"

Time

Measure = 10 seconds

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

Preset: 29 Granulator: All Prob: 26 Grain size: 100-700 Trasposition: 48-72 Timestretch: All Record: On Playrate: 10-0.5 over 30'	Preset: 30 Harmonizer: All Glide: 10' Cents: -10,-20,-30,-40 Granulator: All Prob: 15 Grain size: 100-700 Trasposition: 48-72
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Seed

Generation 1

AA Playful, sparse

Restart timer

Measure = 6 seconds

0' 18"

Time

All

In your own time

Perform 'seed' once at any point within the timeframe.

Select and perform 2-6 cells at any point within the timeframe.
Establish a dialogue-like texture with the remote nodes.

Cptr. 1-3

Preset: 31

Computer sf improvisation:
Any pitch played by a performer in the local node will influence a local computer improvisation.
The computer will mimic the performer's input, remapping the input pitches to a soundfile bank.
The incoming pitches are fed into a feedback line and repeatedly remapped to soundfiles.

Effects: off with 20' ramp

Generation 2

p *mp* *p* *p < mp*

p *p* *p < mp* *p*

p *p* *p* *p*

Time 44 0' 30"

All Select and perform 4-8 cells. sim.

Cptr. 1-3

Generation 3

p *mp* *p < mp* *p < mp*

p *p* *p < mp* *p*

p < mp *p* *p* *p mp*

Time 46 System = 10 seconds 0' 40"

All 1-3 cells. sim.

Kbd. *sfz*

Cptr. 1-3

Generation 4

Generation 4 musical notation consists of three staves. The first staff has four measures with notes and rests, dynamic markings *p*, *p*, *mp*, and *mp*. The second staff has four measures with notes and rests, dynamic markings *p*, *p*, *p*, and *mp*. The third staff has four measures with notes and rests, dynamic markings *p*, *p*, *p*, and *mp*. There are also some *mp* markings in the second and third measures of the first staff.

Time

Time axis for Generation 4, starting at 47 and ending at 0'50".

All

All axis for Generation 4, labeled "1-2 cells".

Cptr. 1-3

Cptr. 1-3 axis for Generation 4, currently empty.

Generation 5

Generation 5 musical notation consists of three staves. The first staff has four measures with notes and rests, dynamic markings *p*, *p*, *p*, and *p*. The second staff has four measures with notes and rests, dynamic markings *p*, *p*, *p*, and *mp*. The third staff has four measures with notes and rests, dynamic markings *p*, *p*, *p*, and *mp*. There are also some *mp* markings in the second and third measures of the first staff.

Time

Time axis for Generation 5, starting at 48 and ending at 1'00".

All

All axis for Generation 5, labeled "1 cell".

Kbd.

Kbd. axis for Generation 5, showing piano accompaniment with notes and rests.

Cptr. 1-3

Cptr. 1-3 axis for Generation 5, currently empty.

Generation 6

Generation 6 musical notation consists of three staves. The first staff contains four measures with dynamics *p*, *p* \rightarrow *mp*, *p* \rightarrow *mp*, and *mp*. The second staff is marked "S.T." and contains four measures with dynamics *p*, *p*, *p*, and *p*. The third staff contains four measures with dynamics *p*, *p*, *p*, and *mp*.

Time

Time axis for Generation 6, starting at 49 and ending at 1' 10".

All

Musical notation for "All" section, marked "1 cell".

Cptr. 1-3

Empty musical notation area for Cptr. 1-3.

Generation 7

Generation 7 musical notation consists of three staves. The first staff contains four measures with dynamics *p*, *p* \rightarrow *mp*, *p*, and *p*. The second staff contains four measures with dynamics *p*, *p* \rightarrow *mp*, *mp* \rightarrow *p*, and *mp* \rightarrow *p*. The third staff contains four measures with dynamics *mp*, *p* \rightarrow *mp*, *mp*, and *p*.

Time

Time axis for Generation 7, starting at 50 and ending at 1' 20".

All

Musical notation for "All" section, marked "1 cell".

Cptr. 1-3

Empty musical notation area for Cptr. 1-3.

Generation 8

Generation 8 musical notation, consisting of three rows of four staves each. The notation includes various musical symbols such as notes, rests, and dynamic markings like *mp*, *p*, *mf*, and *mp*.

Time 1' 30"

All 1 cell

Kbd. *f*

Cptr. 1-3

Performance instructions for Generation 8, including a time signature of 1' 30", an 'All' section with '1 cell', a keyboard part marked *f*, and a section for 'Cptr. 1-3'.

Generation 9

Generation 9 musical notation, consisting of three rows of four staves each. The notation includes various musical symbols such as notes, rests, and dynamic markings like *mp*, *p*, *mf*, and *mp*.

Time 1' 40"

All 1 cell

Cptr. 1-3

Performance instructions for Generation 9, including a time signature of 1' 40", an 'All' section with '1 cell', and a section for 'Cptr. 1-3'.

Generation 10

Musical score for Generation 10, consisting of 11 staves of music. The notation includes various rhythmic patterns, slurs, and dynamic markings. The dynamics used are *p* (piano), *mp* (mezzo-piano), and *mf* (mezzo-forte). The score is arranged in a grid-like fashion with four rows of music. The first row contains four staves, the second row contains three staves, the third row contains three staves, and the fourth row contains two staves. The music features a mix of eighth and sixteenth notes, often grouped with slurs and accents.

Time 53

1' 50"

All 1 cell

Cptr. 1-3

Empty musical staves for the sections Time, All, and Cptr. 1-3. The Time staff is a single line with a clef and a time signature of 5/8. The All staff is a single line with a treble clef and a key signature of one sharp (F#). The Cptr. 1-3 staff is a single line with a treble clef and a key signature of one sharp (F#). The Time staff has a box containing the text "1' 50\"

BB Chainfall $\text{♩} = 168$

Time 54

Anchor: Sop. 1

Anchor

Anchor: Perc.

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

Preset: 31
Computer improvisation: Off

Time 59

Anchor: Sop. 2

Anchor: Sop. 1

Anchor: Kbd.

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

64

Time 9/8 | 4/4 | 3/4 | 5/8 | 2/4

Anchor: Sop. 1 | Anchor: Perc.

Anchor

End anchor

Sop. 1 *p* *mp*

Sop. 2 *p* *mp* *p*

Sop. 3 *p* *mp* *p*

Ten. *p*

Perc. *mp* *p* *p* *mp*

Anchor

End anchor

Kbd.

Cptr. 1-3 9/8 | 4/4 | 3/4 | 5/8 | 2/4

68

Time 2/4 | 3/8 | 9/8 | 6/8 | 7/8

Anchor: Sop. 2 | Anchor: Sop. 1

Anchor

End anchor

Sop. 1 *p* *mp*

Sop. 2 *p* *mp* *p*

Sop. 3 *p* *mp* *p*

Ten. *mp* *p* *p* *mp* *p*

Perc. *mp* *p* *p*

End anchor

Kbd.

Cptr. 1-3 2/4 | 3/8 | 9/8 | 6/8 | 7/8

72

Time 7/8 | 2/4 | 3/8 Anchor: Perc. | 5/8 | 7/8 | 5/8

Sop. 1 *End anchor*

Sop. 2 *p mp*

Sop. 3

Ten. *p mp p*

Perc. *mp p p mp* Anchor

Kbd. *p mp p*

Cptr. 1-3

77

Time 5/8 | Anchor: Sop. 1 | Anchor | 6/8 | 2/4

Sop. 1 *p mp* 3:5

Sop. 2 *p*

Sop. 3 *p mp p*

Ten. *p mp p*

Perc. *End anchor*

Kbd. *p mp* 3:5

Cptr. 1-3

93 *poco a poco accel.*

Time $\frac{3}{4}$ $\frac{2}{4}$ $\frac{7}{8}$ $\frac{3}{8}$ $\frac{5}{8}$

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

98

Time $\frac{5}{8}$ $\frac{3}{4}$ $\frac{5}{8}$

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

102

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

107

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

111

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

116

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

ff

mf

rall.

♩ = ~126

DD

121 *End anchor* $\text{♩} = 160$ *Anchor: Sop. 1*

Time $\frac{4}{4}$ $\frac{3}{4}$

Sop. 1 *Anchor*
mp

Sop. 2 *mp*

Sop. 3 *p*

Ten. *p*

Perc. *Cue*.....
mp *sim.*

Kbd. *mp* *sim.*

Cptr. 1-3 $\frac{4}{4}$ $\frac{3}{4}$

127

Time

Sop. 1

Sop. 2

Sop. 3 *ppp* *p*

Ten.

Perc.

Kbd.

Cptr. 1-3

132

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

137

Time

EE

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

142

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

Musical score for measures 142-146. The score includes staves for Soprano 1, Soprano 2, Soprano 3, Tenor, Percussion, Keyboard, and Ctr. 1-3. The Tenor part features a 'Solo' section starting at measure 143, marked with a forte (*f*) dynamic and a 9-measure slur. The Percussion and Keyboard parts are marked with 'sim' (sustained). The Ctr. 1-3 part is empty.

147

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

Musical score for measures 147-151. The score includes staves for Soprano 1, Soprano 2, Soprano 3, Tenor, Percussion, Keyboard, and Ctr. 1-3. The Percussion part is marked with a fortissimo (*ff*) dynamic. The Tenor part features a 3-measure slur starting at measure 150. The Ctr. 1-3 part is empty.

162 End anchor

Time 1/4

End anchor

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

FF Swarm

167

Anchor: Kbd.

Continue within indicated pitch range
rhythms sim. ad. lib.

Cue; *ff* *p*

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

2 contrasting unpitched instruments (or instrument groups)

mf

Anchor

ff

Cptr. 1-3

Preset: 32

Harmonizer: Sop. 1, Sop. 2, Sop. 3, Ten.
Glide: 100ms
Cents: 9

Granulator: Sop. 1, Sop. 2, Sop. 3, Ten.
Prob: 33
Duration: 20-500ms

173

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

178

Time

Sop. 1

Sop. 2

Sop. 3

Ten.

Perc.

Kbd.

Cptr. 1-3

GG

182

Time $\frac{5}{4}$

Sop. 1 $\frac{5}{4}$ *p* *fff* *p*

Sop. 2 $\frac{5}{4}$ *p* *fff* *p*

Sop. 3 $\frac{5}{4}$

Ten. $\frac{5}{4}$ *p* *fff* *p*

Perc. $\frac{5}{4}$ *p* *fff* *p*

Kbd. $\frac{5}{4}$ *fff*

Cptr. 1-3 $\frac{5}{4}$ Preset: 33 Granulator: Off Spectral delay

184

Time $\frac{6}{4}$ $\frac{5}{4}$

Sop. 1 $\frac{6}{4}$ $\frac{5}{4}$ *p* *fff* *p*

Sop. 2 $\frac{6}{4}$ $\frac{5}{4}$ *p* *fff* *p*

Sop. 3 $\frac{6}{4}$ $\frac{5}{4}$

Ten. $\frac{6}{4}$ $\frac{5}{4}$ *p* *fff* *p*

Perc. $\frac{6}{4}$ $\frac{5}{4}$ *p* *fff* *p*

Kbd. $\frac{6}{4}$ $\frac{5}{4}$ *fff*

Cptr. 1-3 $\frac{6}{4}$ $\frac{5}{4}$ $\frac{6}{4}$ $\frac{5}{4}$ Spectral delay

186

Time $\frac{5}{4}$ $\frac{7}{4}$ $\frac{5}{4}$

Sop. 1 p fff p

Sop. 2 p fff p

Sop. 3

Ten. p fff p

Perc. p fff p

Kbd. fff

Cptr. 1-3 Spectral delay

188

Time $\frac{5}{4}$ $\frac{4}{4}$ $\frac{4}{4}$ End anchor

Sop. 1 p fff p c. 3"

Sop. 2 p fff p c. 3"

Sop. 3

Ten. p fff p c. 3"

Perc. p fff p c. 3"

Kbd. fff End anchor

Cptr. 1-3 Spectral delay

HH

191

Start timer

45"

1' 30"

Time

Sop. 1

In your own time 4-6" *poco a poco rall.*

mp

Sop. 2

In your own time 4-6" *poco a poco rall.*

mp

Sop. 3

In your own time 4-6" *poco a poco rall.*

mp

Ten.

In your own time 4-6" *poco a poco rall.*

mp

Perc.

Gentle waves of unpitched noise ad. lib. *pp* *poco a poco rall.*

Kbd.

In your own time 4-6" *ppp*

Cptr. 1-3

Preset: 34 Timestretch: Sop. 1, Sop. 2, Sop. 3 Ten. Perc. Delay with spectral blurring: Sop. 1, Sop. 2, Sop. 3 Ten. Perc.	Preset: 35 Comb filter bank: Sop. 1, Sop. 2, Sop. 3 Ten. Perc.	Preset: 36 Soundfiles (balloons)
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