

FRISKOTO

for

Fixed media and Live electronics (4 ch)

2014

Haruka Hirayama

A Special thanks to Sumie Kent for her collaboration on Koto recording.

First performance on the 12th July, 2014
電子音楽なう!concert, CAP CLUB Q2, Kobe, Japan.

Programme note

In Spring 2014, I was offered the opportunity to record the sounds of the Koto in the studios of Novars together with my colleagues. The professional Koto player was Ms. Sumie Kent, who introduced us to various performance techniques and provided many different types of Koto-sound materials for our recording.

While considering the form of a new composition with these sampled sounds, I was given an opportunity to present a live-electronic piece in Kobe, Japan. This led me to the idea of creating a live performative work which could be easily accessible by various people as performers. I therefore decided to create an interactive music without any live sound input to computer. (In fact, I couldn't attend the concert in Kobe, so musical 'portability' - particularly without a specific performer was also important issue.) The title of *FRISKOTO* is a coined word with *frisk* in English and *Koto* in Japanese, because I wanted to create a 'bouncing' and 'springy' spatial expression with these sound materials of Koto, whilst also considering the four-channel speaker setup at the concert site.

All sound sources for the live electronics in this piece are comprised of only three sets of material, which were composed in advance for 4 channels, with each having a duration of more or less 40 seconds. Another source is one long Koto tone which is used for circling between four the speakers. The challenge I faced was how to transform the limited source materials and how to recycle them. Those questions are also linked to the question of how to fill the gaps between the previous three playback materials with improvisation. In addition, I have introduced a sensor into my composition for the first time, and wrote a score based on 'movements'. It was very interesting to explore the controlling of timbres through physical gesture and subsequently notate them.

After completing the composition, I can say that the whole creative process for this piece was great fun. (This is not common for me.) As a result, I feel I made one sound tool/system/instrument rather than a musical composition, and it will be a pleasure to see various people play the tool.

今年の春頃、NOVARSのスタジオにて、たまたま友人と共に琴のレコーディングの機会を得ることができた。琴の演奏をしてくださったのはイギリス在住の琴演奏家のケント澄穂さんで、様々な奏法と共に色々な音を弾いてくださり、我々の録音に大変協力して頂いた。

録音した音を用いてどのような作品を創作しようか色々検討していた折、ちょうどその夏に神戸で新曲を発表する事となった。そこで、ライブパフォーマンスの作品でありながらも、誰でもパフォーマーとしてアクセスできるようなインタラクティブな曲作ろうと決めた。(実際、神戸の演奏会には立ち会うことができず、演奏者を限定しないライブ作品というのが重要視された。)神戸でのスピーカーのセットアップなども考慮し、4チャンネルのための、跳ねる様な、弾ける様な琴の音とその空間表現をつくりたいと思い、英語のfriskという言葉と楽器のkotoを組み合わせた造語からタイトルを付けた。

この曲のソースとなる音は、全て、あらかじめ作曲された4チャンネルの為のサウンドマテリアル3つ(それぞれが40秒ほどの短いもの)と、琴のロングトーンを4チャンネルを巡回する場面で使っている。数少ないソースとなる音をエレクトロニクスによってをどう変化させ、再利用しながら14分程の曲を創作するかというのはやりがいのある試みであった。また、初めて自身の作品にセンサーを取り入れ、「動き」を基にした楽譜を書いたが、それまたとても興味深い作業であった。

作曲を終えて、この曲の創作作業と過程はとても楽しかったと言える。(これは私にとってよくあることではない。)結果的には、音楽というより一つの音具を作った気分で、将来、様々な人に演奏してもらえる機会があれば嬉しいだろう。

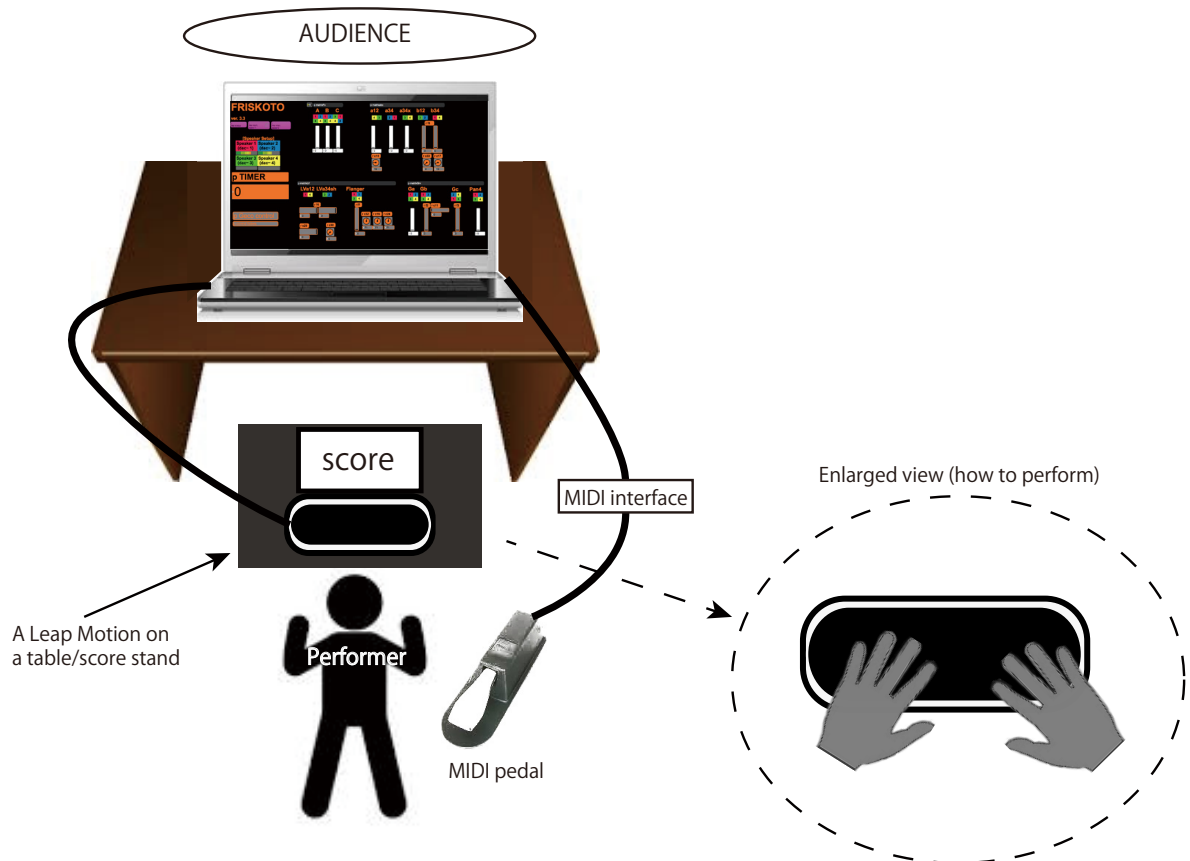
Autumn, 2014

[Required equipments]

- 4 channel speaker system with 16bit/44.1k sound card.
- Max/MSP application
- Geco MIDI application (for Leap Motion Controller)
- Leap Motion Controller* and a MIDI pedal or a MIDI controller (faders and knobs)
- Macintosh computer

* Sensor device that supports hand and finger motions.
<https://www.leapmotion.com/>

[Proposed set up for performance in score]



In this setup, a foot pedal is used to change cue-numbers, and Leap Motion Controller is to control values that are assigned to several elements for transforming sounds. Leap Motion Controller detects positions of left and right hands. (The X/Y/Z-axes)

It is also possible to use any MIDI controller instead of Leap Motion Controller for performance. (Geco MIDI is not required for this case.) Space key is used as a replacement for MIDI pedal. Enter key + Space key is for reset the cue-number.

[Sound Modules (Voices)]

SOUND MATERIALS

- [A]** Material A: a fixed material to be played back. (4ch)
- [B]** Material B: a fixed material to be played back. (4ch)
- [C]** Material C: a fixed material to be played back. (4ch)

TIME STRETCH

- [a12]** Live time stretching, based on the sound of Material A, ch1-2. (2ch)
- [a34]** Live time stretching, based on the sound of Material A, ch3-4. (2ch)
- [a34x]** Live time stretching, based on the sound of Material A, ch3-4. (2ch)
- [b12]** Live time stretching, based on the sound of Material B, ch1-2. (2ch)
- [b34]** Live time stretching, based on the sound of Material B, ch3-4. (2ch)

LIVE SOUND TRANS- FORMATION

- [LVa12]** Frequency-domain pitch shifter implemented by Gizmo, based on the sound of Material A, ch1-2. (2ch)
- [LVa34sh]** Frequency-domain pitch shifter implemented by Gizmo, based on the sound of time-stretched Material A, ch3-4. (2ch)
- [Flanger]** Flanger sound processing.
Several different materials are employed for its sound source.
<Ga><a12,a34><Pan4> on score indicates the present sound source.
Ch1-2 for flanger1, ch3-4 for flanger2.

LOOPING PLAYBACK

- [Ga]** Variable-rate looping playback, based on the sound of Material A (4ch)
- [Gb]** Variable-rate looping playback, based on the sound of Material B (4ch)
- [Gc]** Variable-rate looping playback, based on the sound of Material C (4ch)

4CH PANNING

- [Pan4]** Live 4ch sound diffusion with the pan4 object of Max/MSP.
2ch sampled Koto sounds are assigned.

[Instructions for the score]

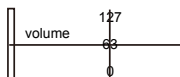
This score suggest that this piece should be played with a foot and both hands. The foot controls a MIDI pedal, and hands control Leap Motion Controller. A timer is provided on Max/MSP so that the performer can count timings for performance.

0 1 2

Cue numbers: these should be triggered by a MIDI pedal. Music and the timer start at cue 2.

All musical information which should be triggered by the pedal is notated with black lines.

The pedal should be pressed at the suggested time in the score. **1:25** **1:40** means you can press the pedal or start improvisation any time between 1:25 and 1:44. Time signatures in brackets mean the relevant events should happen roughly at the written time.



The clef corresponds to the control data of MIDI: the middle line is approximately 63 and the value changes in the range between 0 and 127.

Black lines normally do not follow the concept unless any specific values are written.

The note at the furthest left side means which parameter/what kind of element is controlled:

volume: 0—quieter, 127—louder.

pitch/speed: 0—higher/faster, 127—lower/slower.

texture: 0—static, 127—active

0—faster, 127—slower

0—coarse, 127—fine

0—slow, 127—fast



Movement for the left hand



Movement for the right hand



Improvisation with an indicated hand. Line suggests general information for performance; however, performers are recommended developing their own performing techniques/styles freely.



This line means the value of control data is fixed with the value which you reached just before pressing the pedal. around
120-127 The info in a box is the value that should reach before pressing the pedal.



the arrow: directions for hand movement.

0: faster : corresponded maximum and minimum values to each direction and how sound changes.

c11 : and unique 'address' which receives the control data on Max/MSP. (See next section.)



Left and right position. Hands should move left and right directions.



Up and down position. Hands should move up and down directions.



Back and forth position. Hands should move back and forth directions.
To be captured the data properly, put the hand horizontally to the sensor.



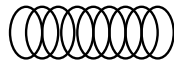
Volume up automatically. (crescendo)



Volume down automatically. (decrescendo)



4ch sound clips for playback. (Only for [A], [B], [C])



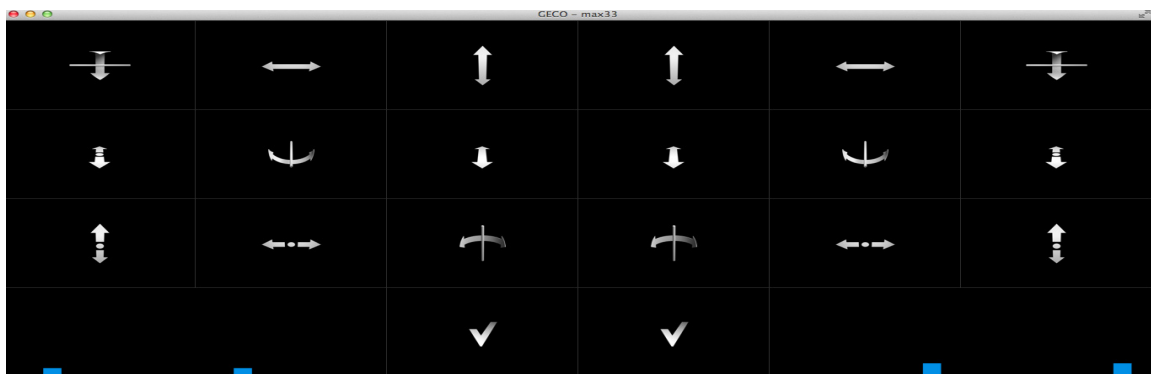
Turning 4ch sounds. (Only for [Pan4])

[Instructions for electronics]

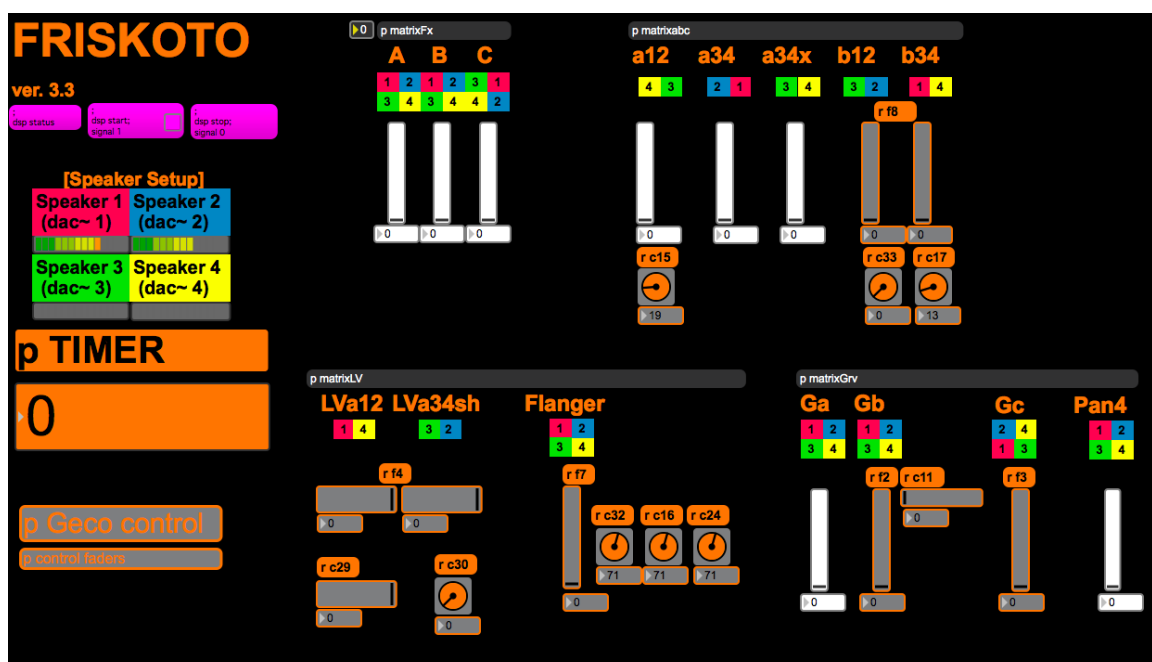
1: Plug in MIDI foot controller.

2: Plug in Leap Motion.

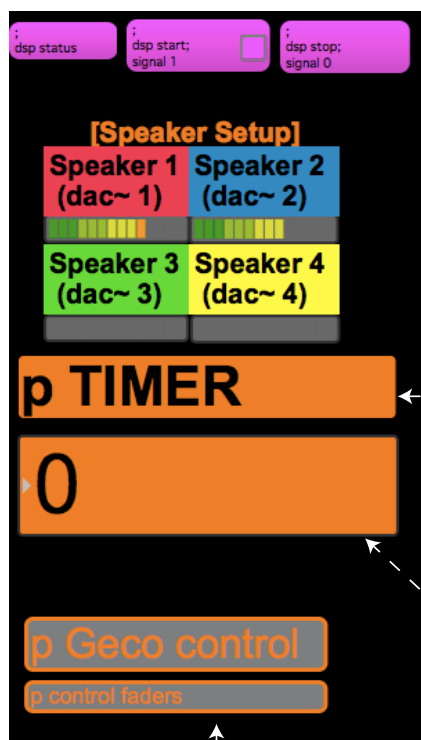
3: Launch GecoMIDI and open the corresponded file. (max33.geco), then you can close the window. (Not quit!)



4: Launch Max/MSP and open the corresponded file. (Friskoto_Ver3_3.maxpat)



Essential information for performance in order.

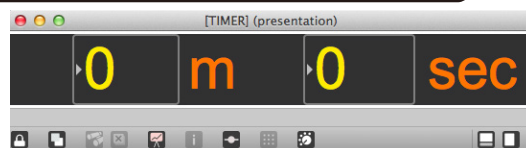


Set up an audio card (4ch), and check the audio output routing.
 dsp status button: open DSP status window
 dsp start button: start DSP
 dsp stop button: stop DSP

dsp start button must be pressed first. (①)

Assignment for speakers and DSP out.

Timer. Double click to show it. It starts automatically when cue-number 2 is triggered. (②)



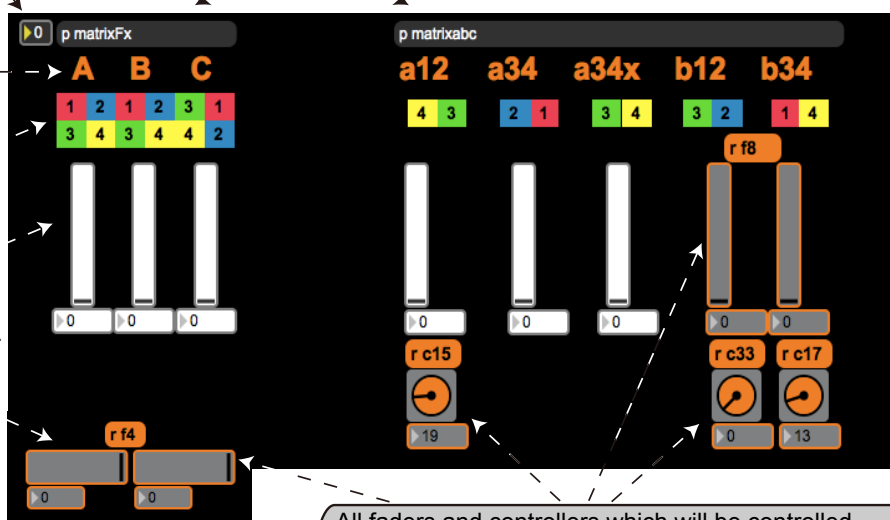
Current cue number. (for MIDI pedal)
 When 0, you can check the connectivity between Max/MSP and GecoMIDI. (fader f2: Left hand up/down)
 The number moves forward each time when you press the pedal. (③)

Assigned values for MIDI controllers.
 Double click to look at the details.

0: Preset routing for 4ch.
 1: Preset routing for 2ch.
 (Default is 0.)
 When you want to listen in stereo,
 choose 1 (for all matrices.).

Each matrix object contains the routing information about sound output.
 (Double click.)
 Channels are assigned as described (See next page.)
 It is also possible to change each routing.

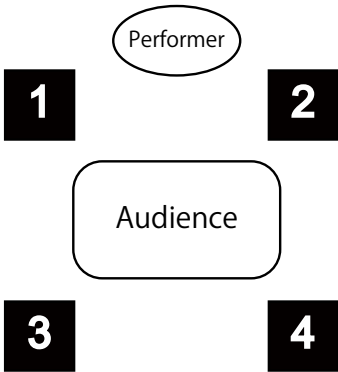
Names of sound modules (voices.)
 Channel numbers and positions.
 All vertical and f4 (horizontal) faders are gains.



All faders and controllers which will be controlled by a performer are highlighted. Each of them has the unique address (f8, c15, c33 etc.), which corresponds to on the score. (See 'Instructions for the score' .)
 (④)

[Speaker set up]

Speakers should ideally be arranged like this:



Therefore, each `dac~` object (DSP output) on Max/MSP should be connected as:

- `dac 1~` to speaker 1
- `dac 2~` to speaker 2
- `dac 3~` to speaker 3
- `dac 4~` to speaker 4

[Matrix for output of each sound module (Max/MSP)]

Names of patcher (Max/MSP)		p matrixFx												p matrixabc											
Sound modules		A				B				C				a12		a34		a34x		b12		b34			
Output channels		1	2	3	4	1	2	3	4	1	2	3	4	1	2	1	2	1	2	1	2	1	2		
Speaker Out	1																								
	2																								
	3																								
	4																								

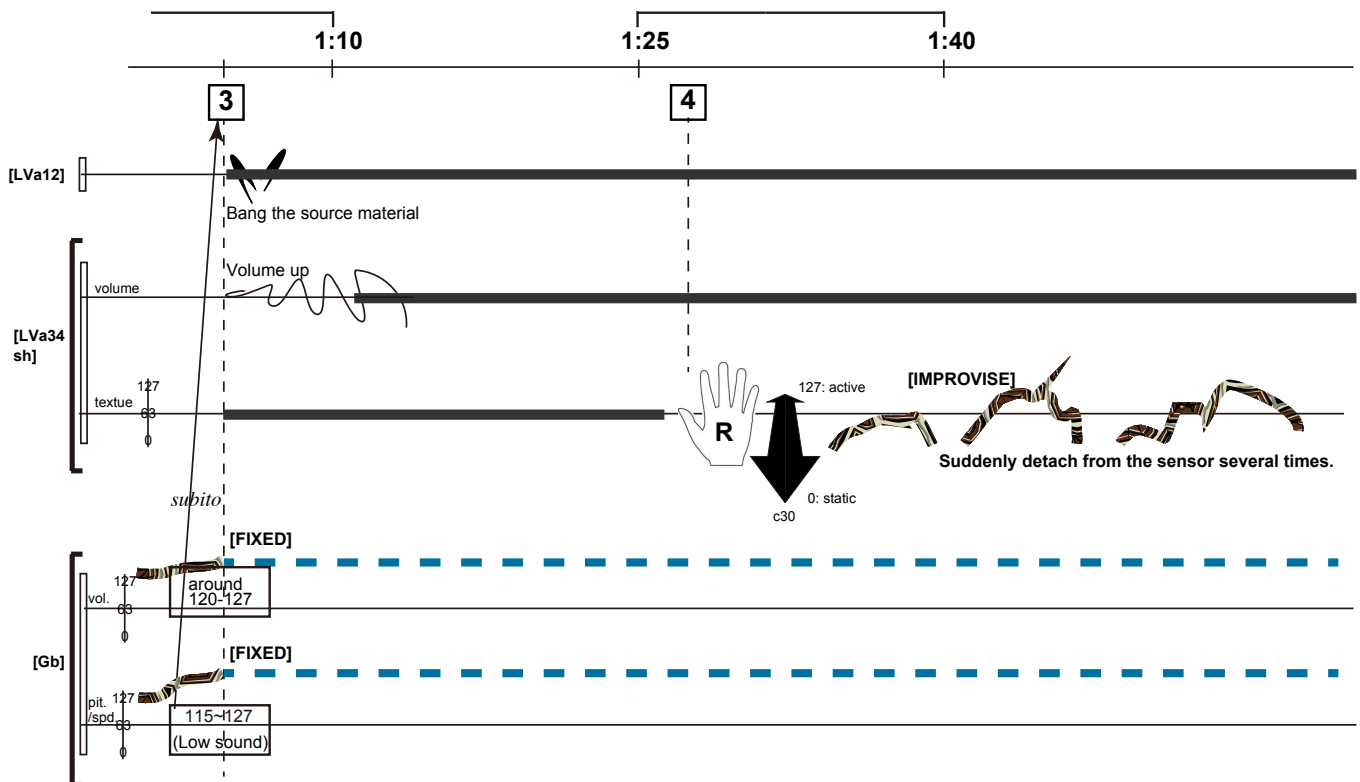
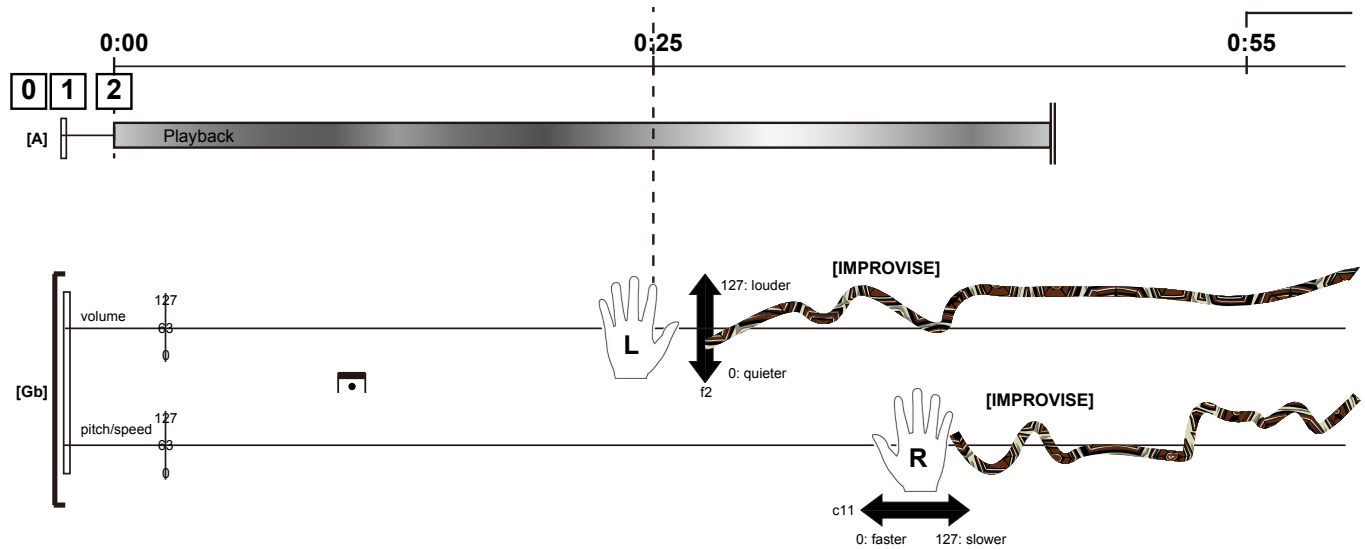
Names of patcher (Max/MSP)		p matrixLV								p matrixGrv															
Sound modules		LVa12		LVa34sh		Flanger				Ga				Gb				Gc				Pan4			
Output channels		1	2	1	2	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Speaker Out	1																								
	2																								
	3																								
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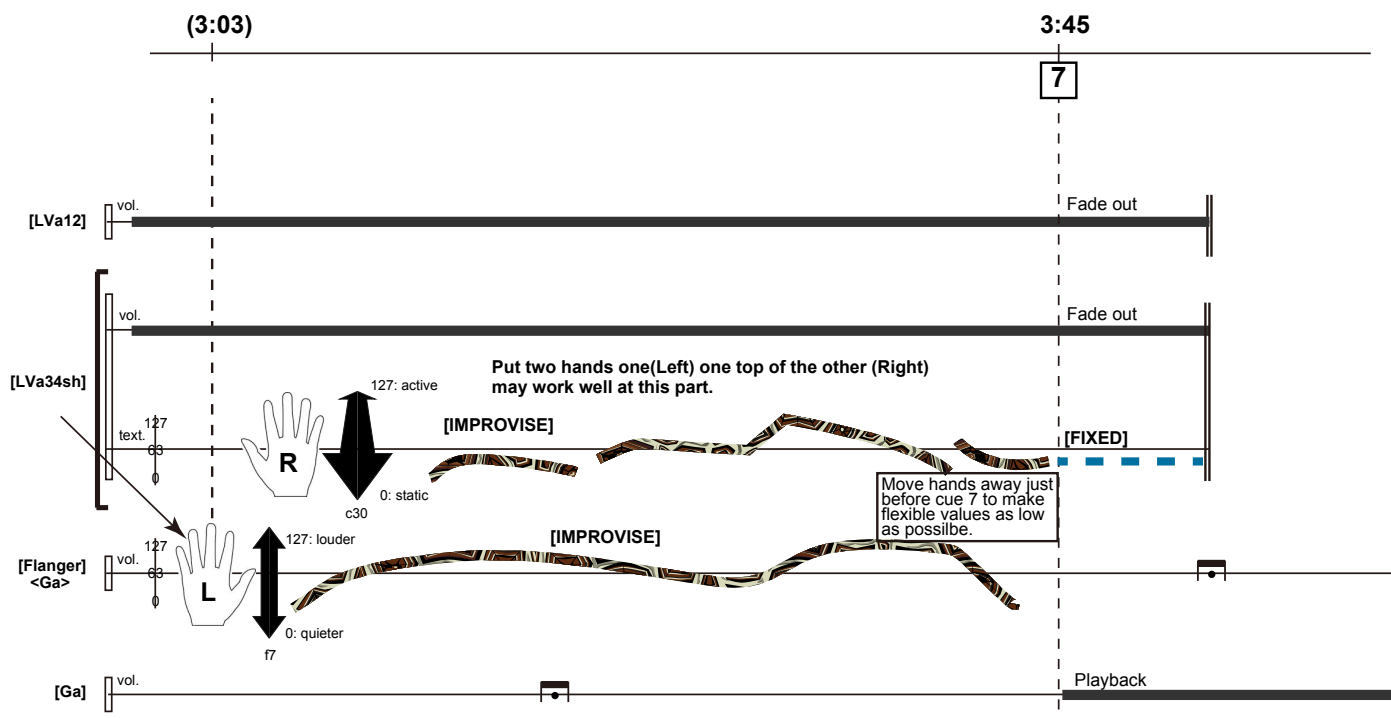
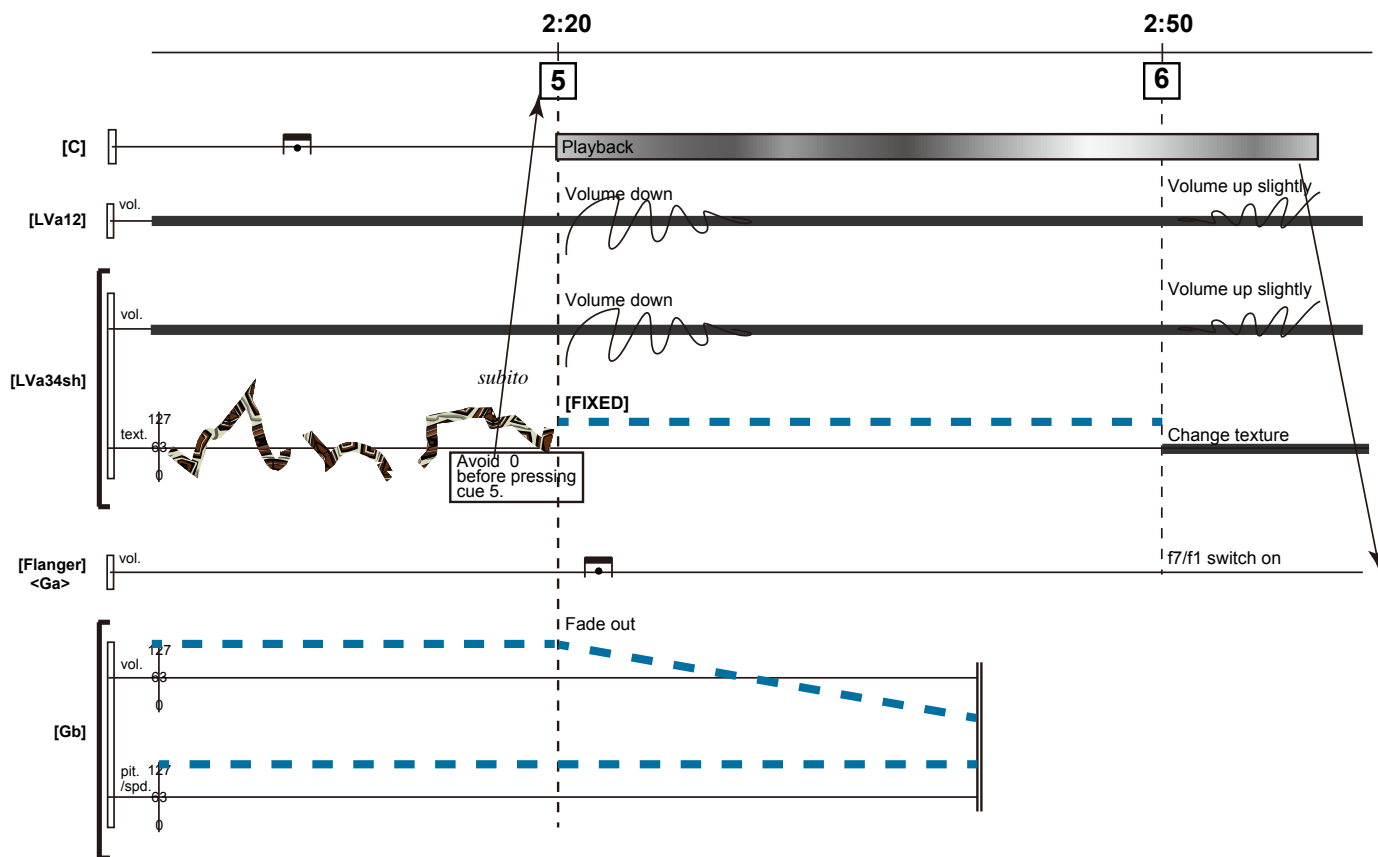
The output information will be loaded automatically, but it is customizable.

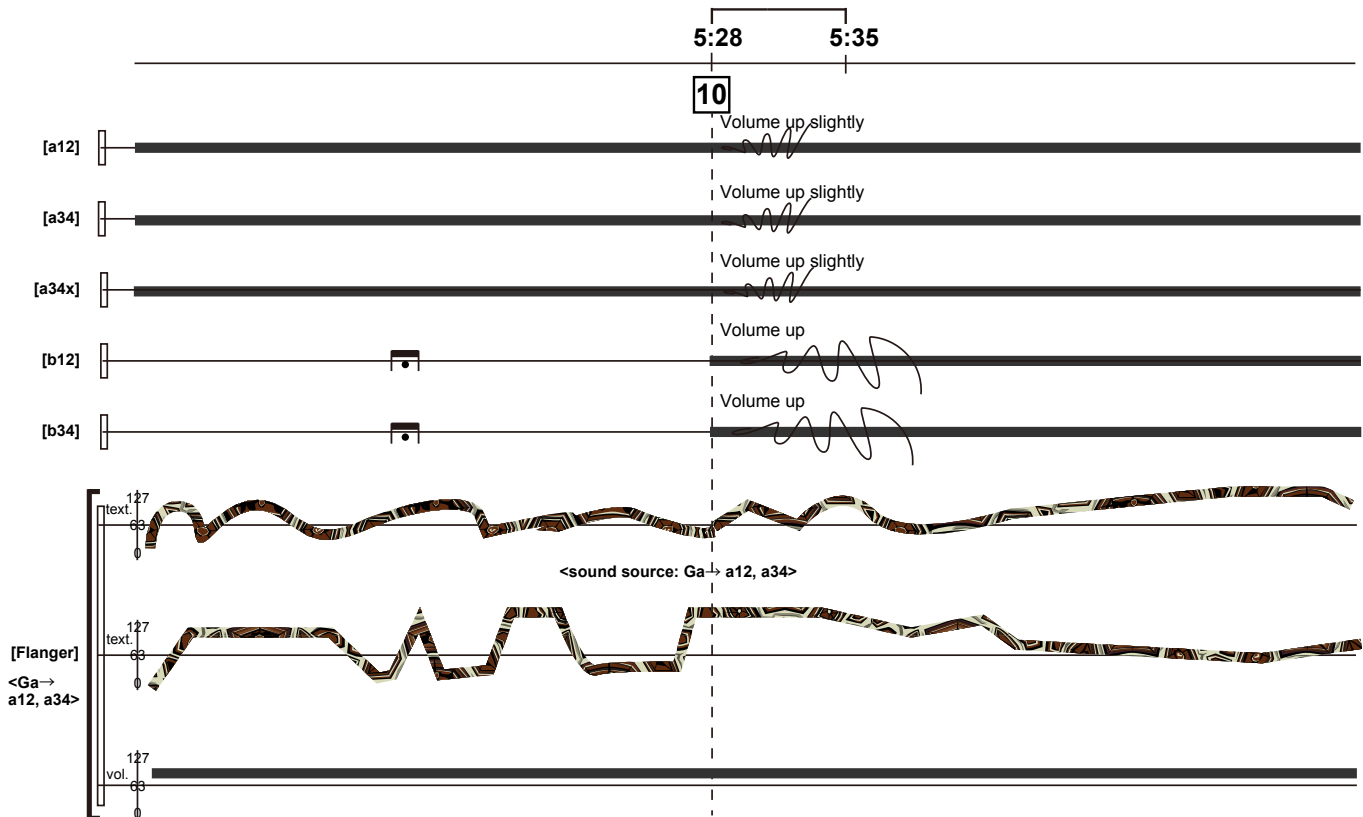
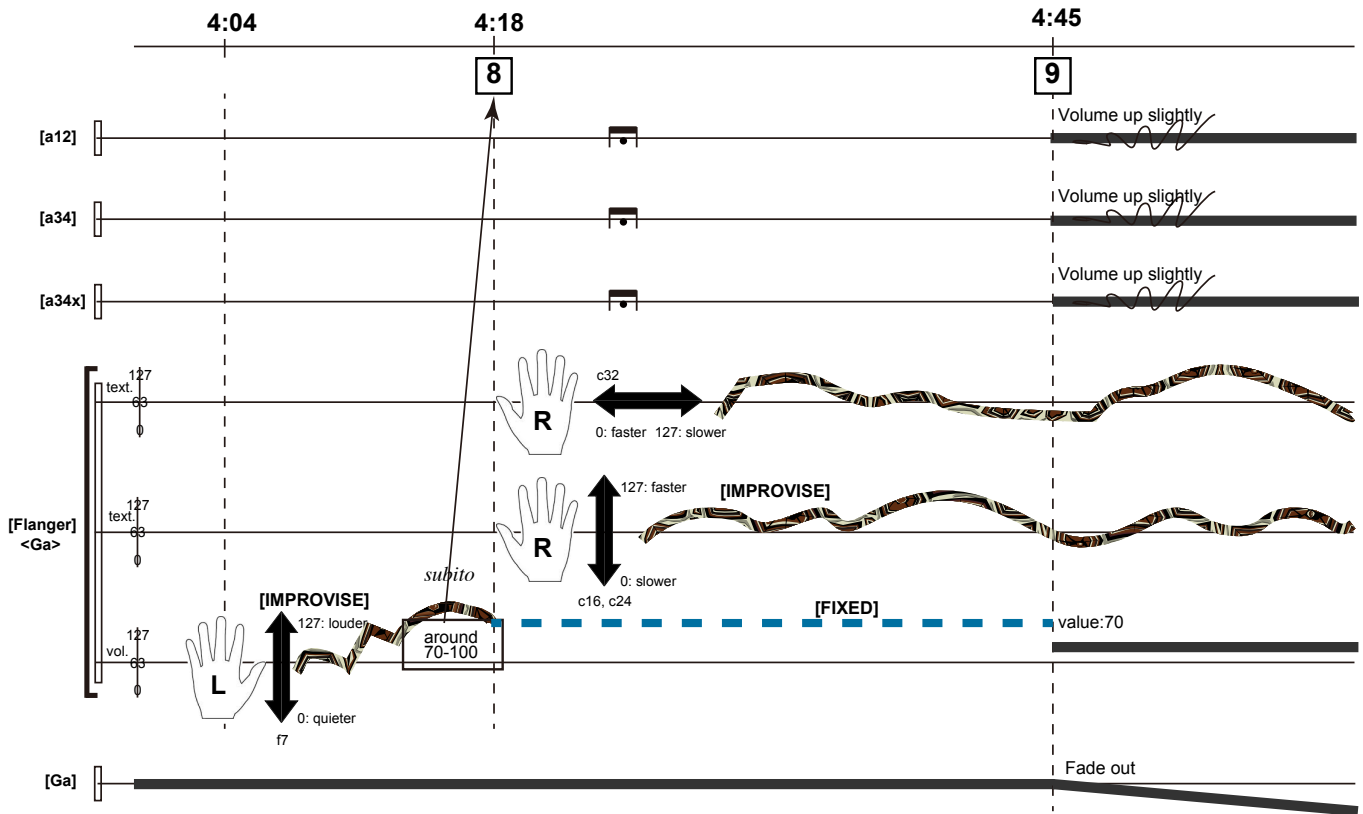
FRISKOTO

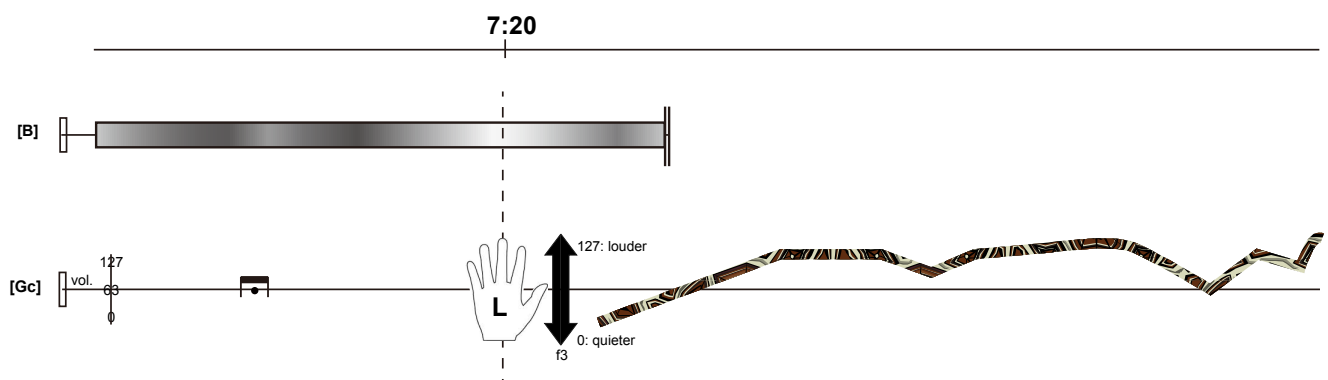
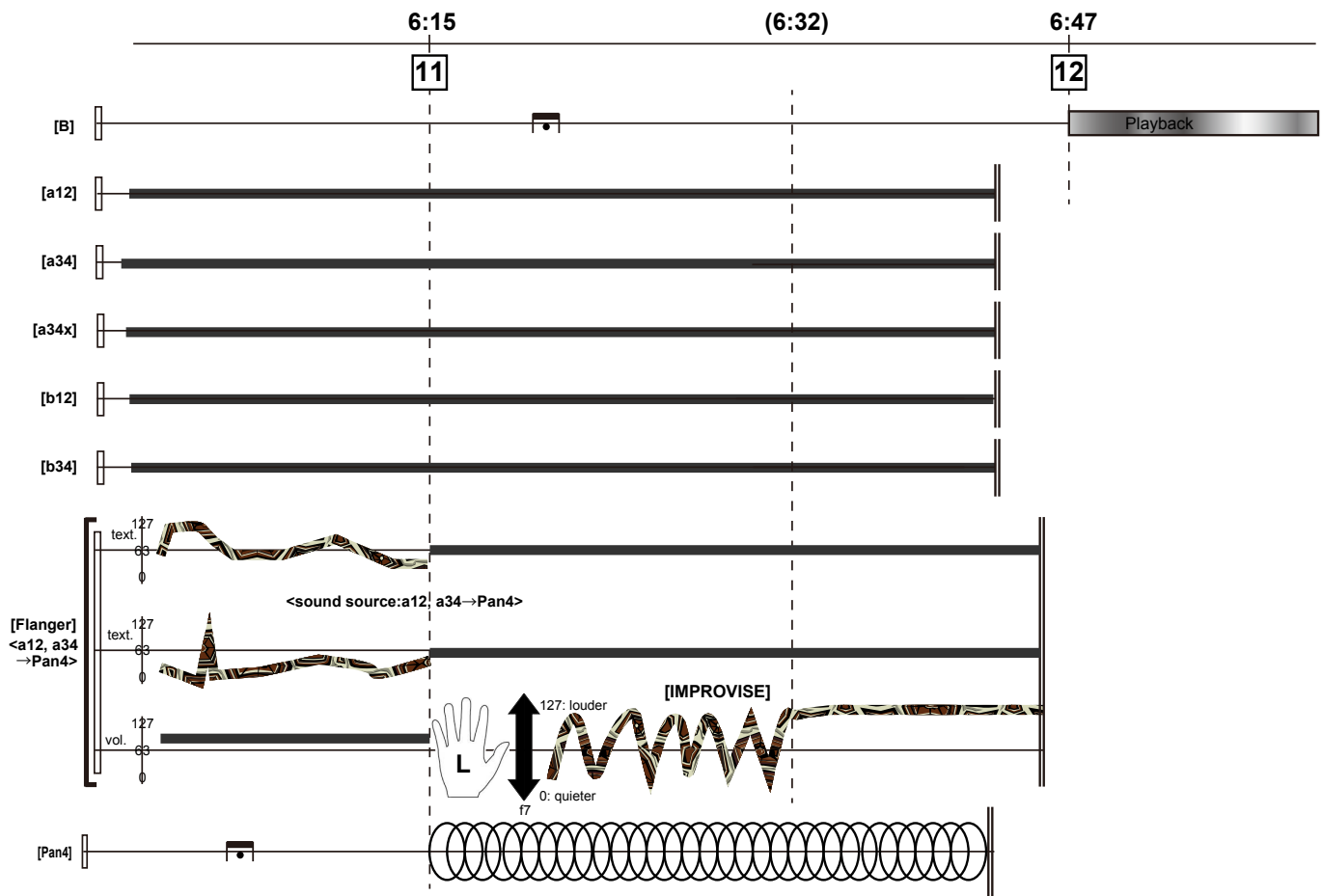
for Fixed media and Live electronics (4 ch)

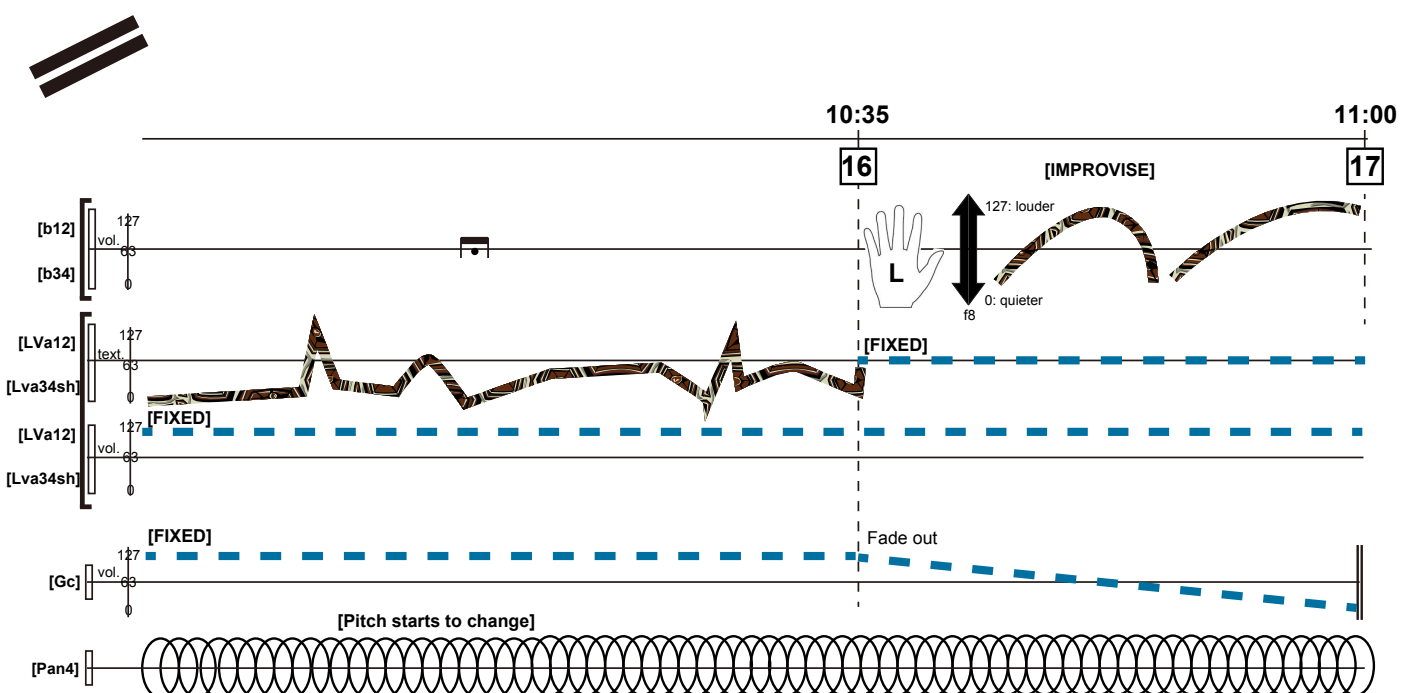
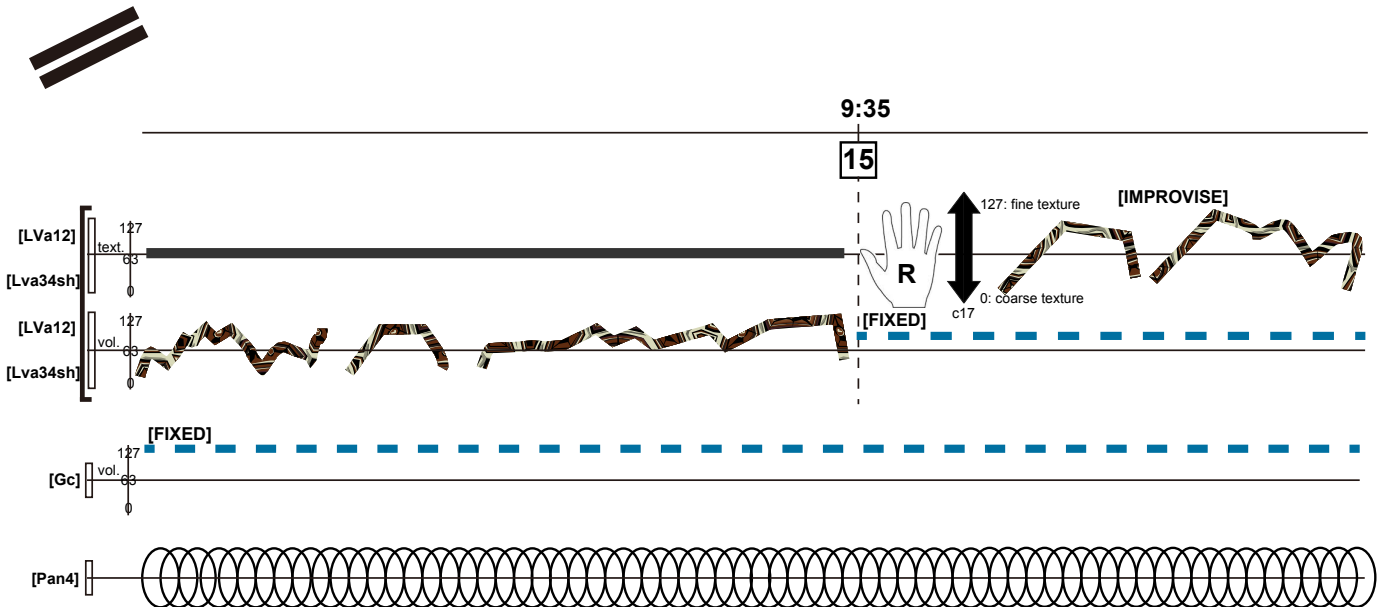
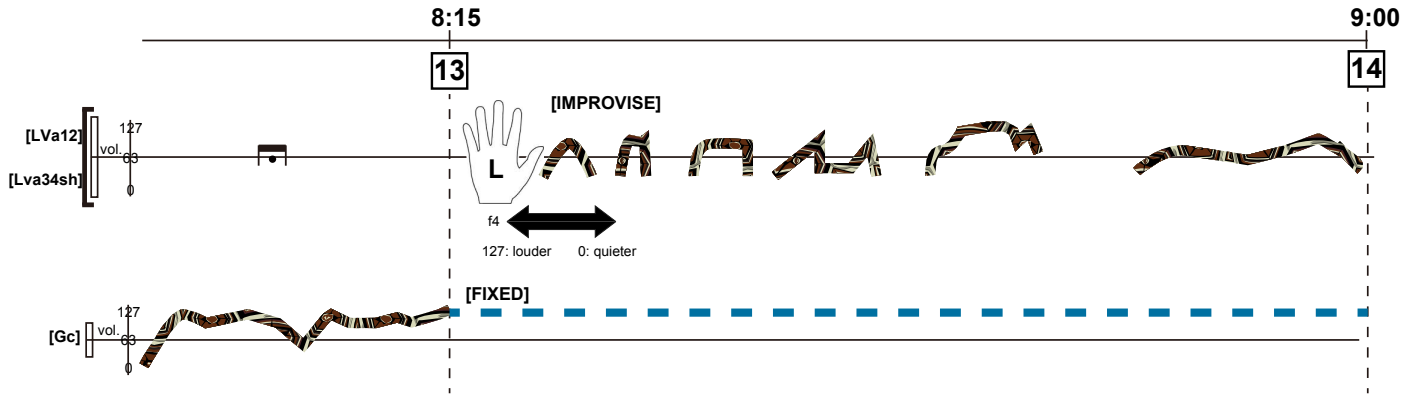
Haruka Hirayama (2014)

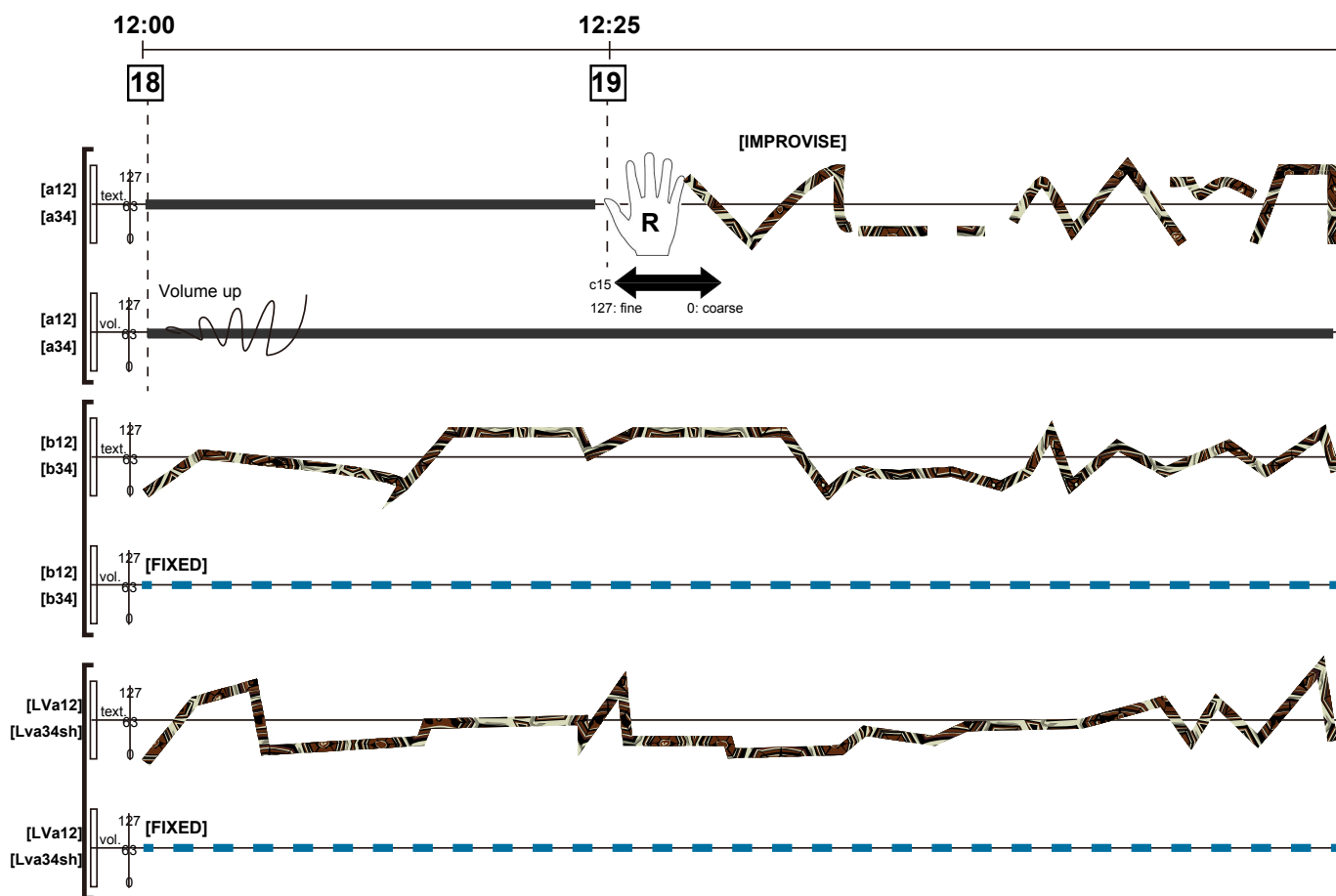
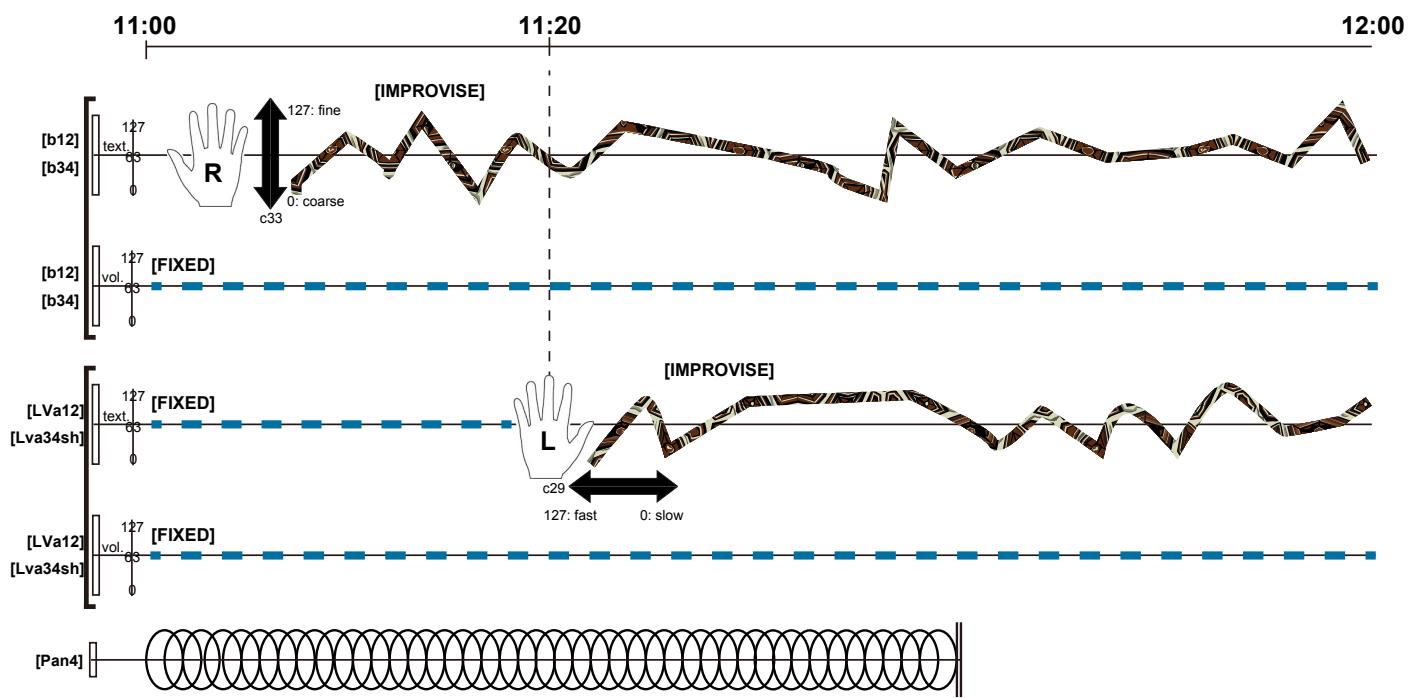












13:00

(14:00)

