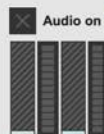


TECTONIC: Pannotia [2025]
lindsay vickery



Join Network
Tectonic - Pannotia.lv1
/Server/Bye!

Preset Score
Start Score (Spacebar)
Stop Score (Return)

Reset Score
Clear Score

72 Current Timing

0 Start From

72 For Testing (go to)

13 step thru

72

LARGE GROUPS

winds
trill register next texture:
section duration

strings
trill register next texture:
section duration

perc
Points register next texture:
section duration

chords
Silence register next texture:
tacet section duration

electronic
Points register next texture:
section duration

SMALL GROUPS

BZ
Electrical Shorting register next texture:
section duration

dB
Silence register next texture:
tacet section duration

AIM
Rise register next texture:
section duration

CO
Bounce register next texture:
section duration

ASP
Spikes register next texture:
section duration

SOLOS

Solo1
Points register next texture:
section duration

Solo2
Points register next texture:
section duration

Solo3
Points register next texture:
section duration

Solo4
Stars register next texture:
section duration

**The effectiveness of the Decibel Scoreplayer
Canvas Mode as medium for telematic
performance**

Dr. Lindsay Vickery, Western Australian Academy
of Performing Arts, Edith Cowan University
Aaron Wyatt, Sir Zelman Cowen School of Music
and Performance, Monash University

Introduction (Aaron)

Decibel Scoreplayer (2014)

Affordances:

A range of Score presentation Modes:

Scrolling (2014) – right to left scrolling of score image in relation to a playhead

Talking Board – right/left/up/down scrolling of score image and moving playheads with “behaviours”

Juanita/Liminum – bidirectional scrolling, non-linear repositioning in relation to a playhead

SlideShow – Single and double page display and page turns

FlashCards – single pages with elapsed duration indicated

Ubahn – movement of playhead(s) around a rhizomatic score

Rodinia - networked generative scores and multiple “conductor’ GUIs on iPads.

LAN Networking using OSC (with Bonjour/mDNS for service discovery)

Score commands from Computer

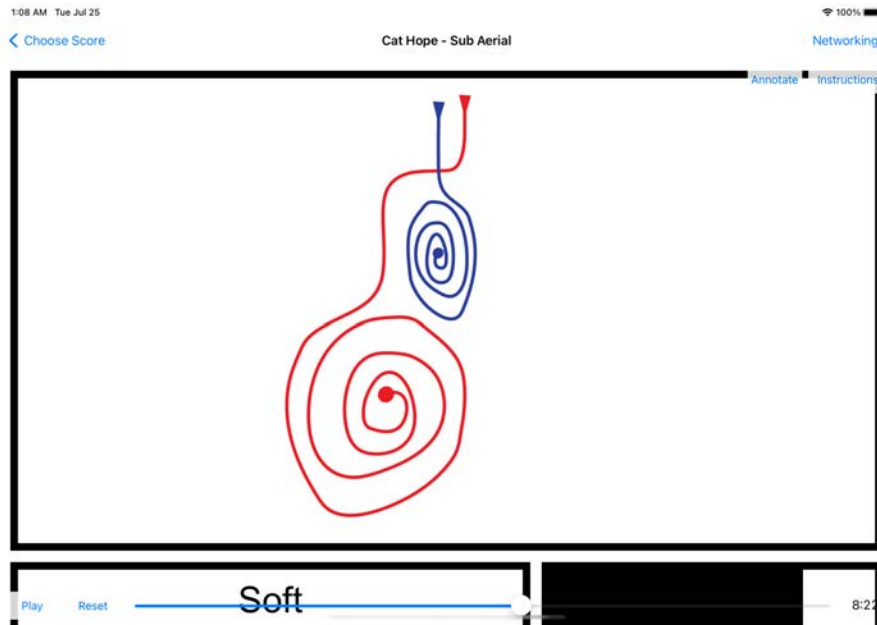
WAN Networking using Manual IP address (2019)

Canvas Mode (2019)

Affordances:

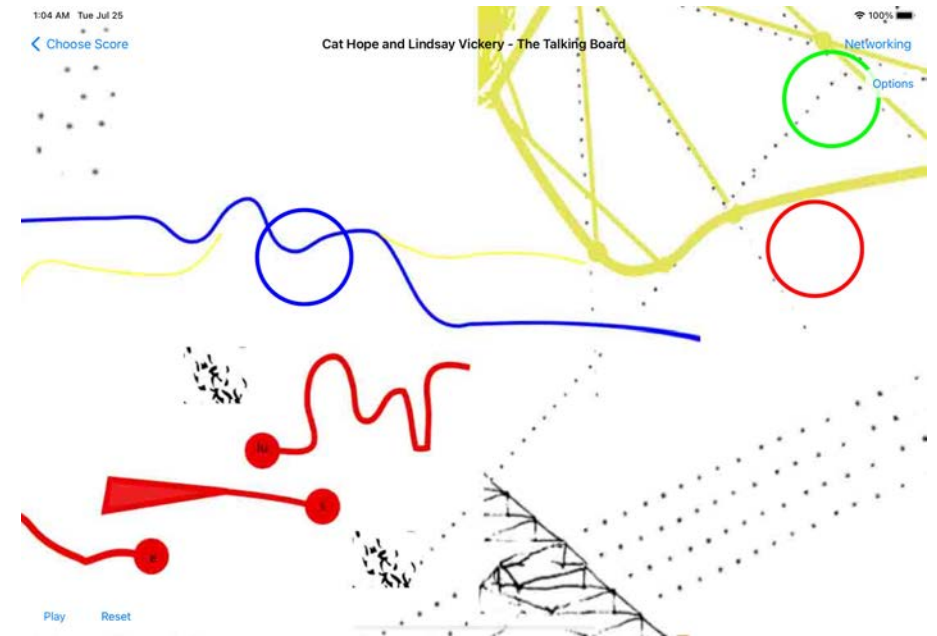
enables a computer to send drawing commands to a network of iPads via OSC

Flash card scores



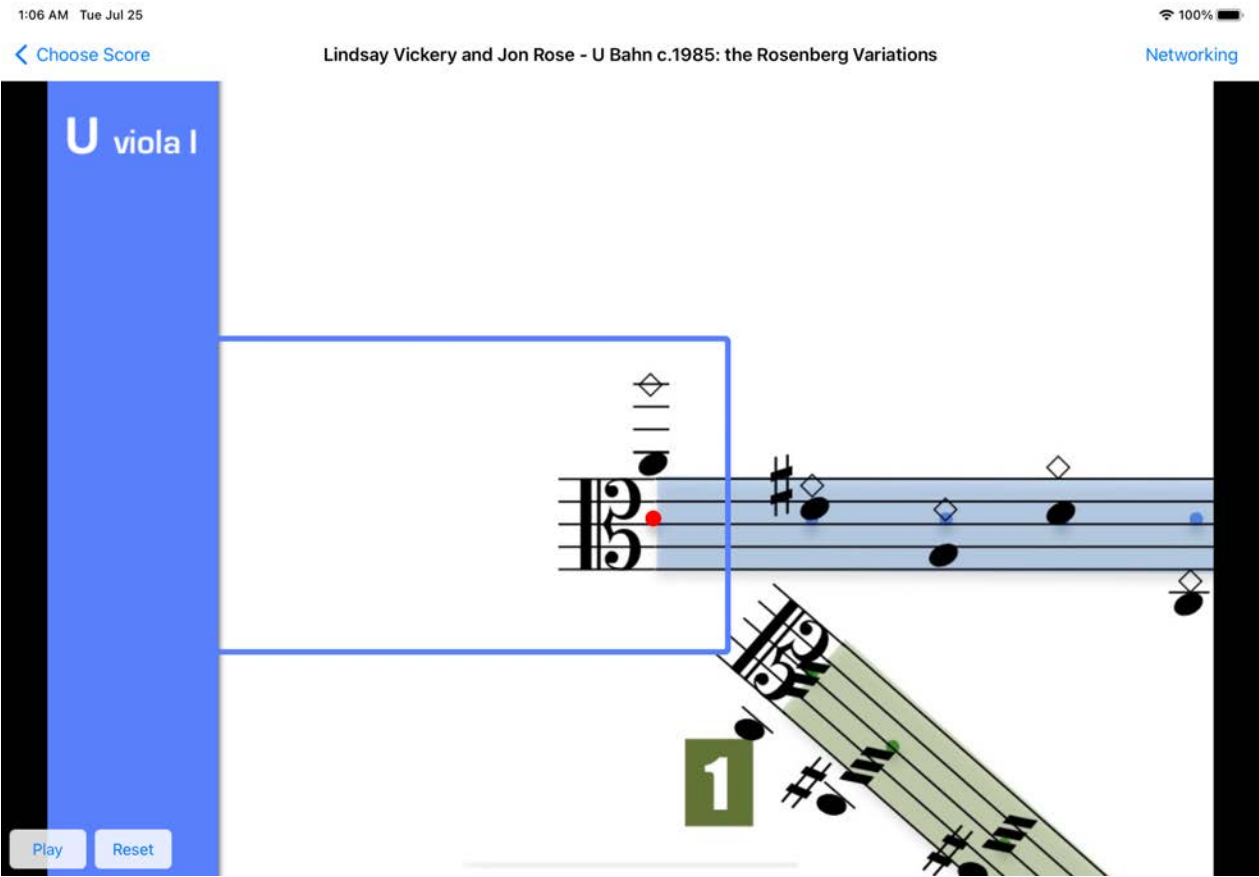
Sub Aerial (Hope 2013)
Flash card score with random order, dynamics, and duration bar

Talking Board



The Talking Board (Hope and Vickery 2011)
Talking board score showing planchettes moving over a sliding background

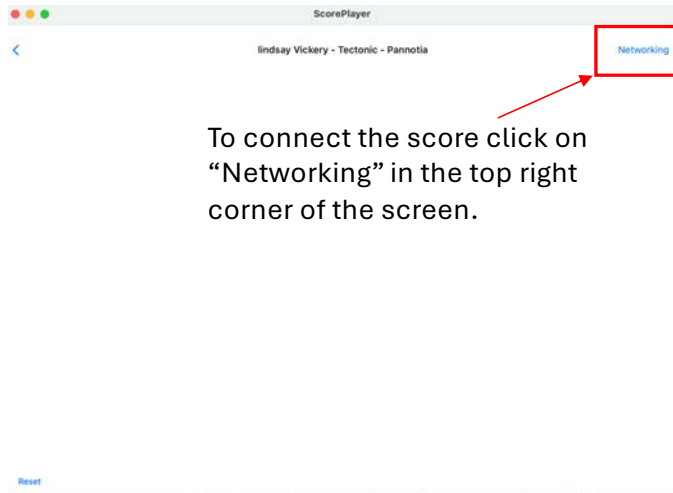
UBahn (rhizomatic scores)



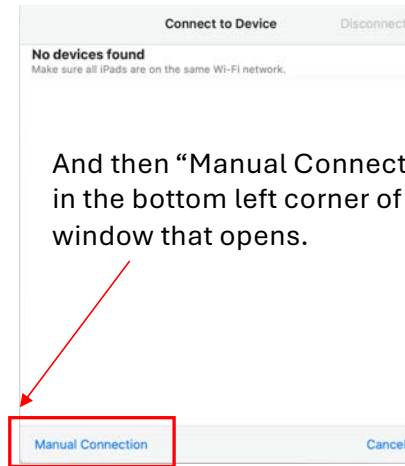
U Bahn c.1985: the Rosenberg Variations (Vickery 2012)

Rhizomatic score where each player traverses material along an interconnected network

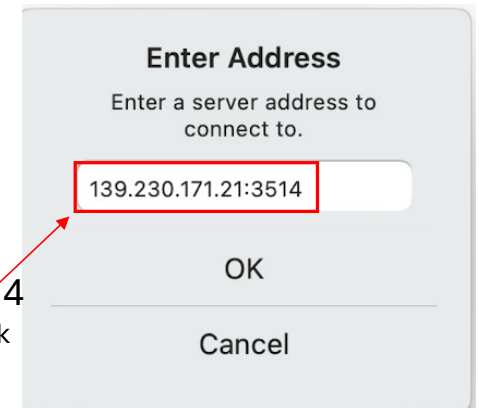
My Instructions if you want to use them



To connect the score click on “Networking” in the top right corner of the screen.



And then “Manual Connection” in the bottom left corner of the window that opens.



enter 139.230.171.21:3514
In the Address window and click
OK.

(Aaron)

WAN Networking using Manual IP address (2019)

Made the Scoreplayer a relevant technology for the synchronous networked presentation of scores in telematic performance .

Canvas Mode

Made it possible to send realtime draw commands on a LAN

Canvas Architecture

Layers can be added to the canvas itself or as sublayers of other layers

This allows for graphical objects to be grouped together and manipulated as one

Commands exist to add and remove layers, load an image into them, change their colour, opacity, and their geometry. (Some of these properties can be animated as well as changed immediately.)

There are commands to add and change text and musical glyphs

There is a scroller object that allows for a much longer layer to be scrolled left or right through a visible 'window'

Tectonic: Pannotia – its lineage was a set of works based on the concept of a score-based composition with groups of players interacting like Tectonic plates. It draws on conventions and practices in Post-War music including: Sound-Mass, Group Improvisation, Acousmatic and Interactive Composition and research in Digital Notation that has been one of the preoccupations of the Decibel New Music Ensemble, that Aaron and I have both been part of for over 10 years.

In Pannotia, this project collided with the experience of “vertical communities” - like minded but geographically disconnected people perhaps especially from isolated locations like Perth/Australia and and made particularly acute by COVID. (Although my introduction to telematic performance was as a performer/node in *Finding Time 2* (1999) by Jesse Gilbert and Scott Rosenberg along with **USA**: Amy Alexander, Jesse Gilbert, Steve Hise, Matt Ingalls, Marlene Nutall, John Shiurba, Aram Sinnreich, Willow Williamson, Pamela Z, **Japan**: Yasuhiro Otani, Atau Tanaka **Australia**: Tim Kreger, Melanie Knight- Smith, Lindsay Vickery **Germany**: Nathaniel Hamon and **Nigeria**: Matt Rogalsky)

A number of issues informed its development:

Creative work

Agency (Improvisation)
Identity (Structure)
Stakes
Engagement

Notation

Level of specificity
Semantic clarity
Interactive realtime responsiveness

Difficult environment

Opaque threats cybersecurity -> firewalls
Ubiquity, capital and seamlessness of streaming platforms and online gaming as a contrast to the ad hoc nature of technological/creative development

Each of the Tectonic pieces has had a long development period and the “oceans”, “landforms” and “animals” functioned as “studies” and proof-of-concept works during this process. A range of score paradigms were considered for Tectonic: Pannotia (and may still be explored in future). A **graphical texture terrain** – although this may be a possible attractive solution, it was abandoned because it required:

- significant computer processing – potentially reducing the dependability of a “distributed score”;
- reading graphical scores is a specialised skill;
- animation of this type was not yet implemented in the Decibel Scoreplayer;
- the scoreplayer provides dependable network communication.



Vickery, L. and James, S. (2021). *Tectonic: Pannotia* - a telematic, interactive, generative-score, Presentation, NowNet Conference 2021.

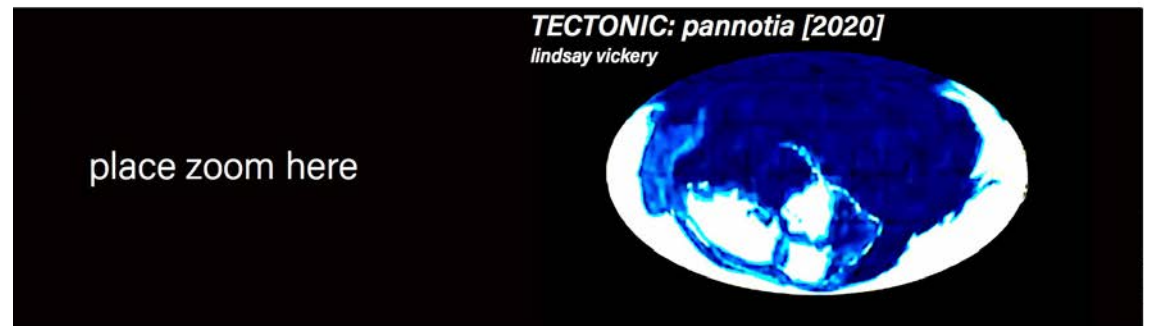
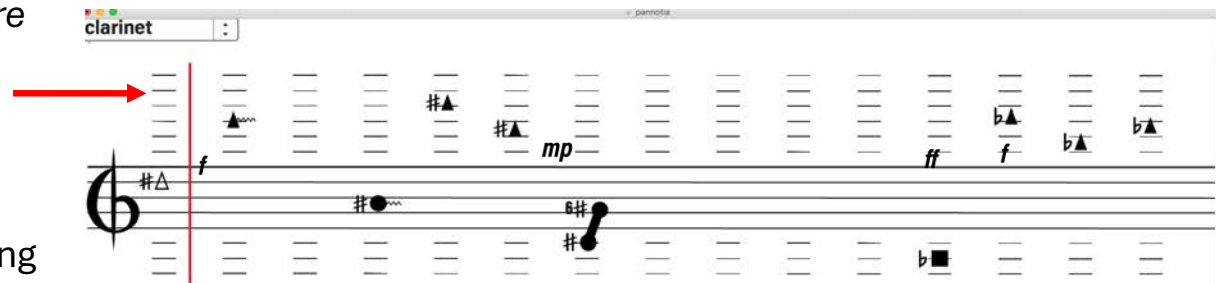
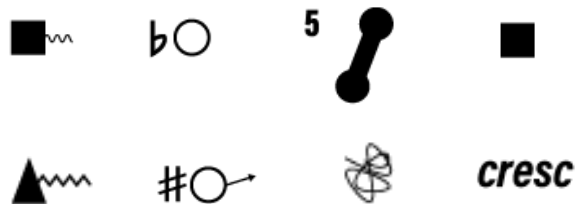
A second approach explored an extended notation-based solution generated in realtime using texture “models” shared over the network. The intention was to use networked Max applications on distributed computers allowing for “tectonic-like” interaction between the generative models. In this model, Individual players in separate locations, would select their instrument (defining transposition and range parameters for data generated from each model and read in “Extreme sightreading mode” following a swiping cursor.

Again, some variation on this approach may be attempted in the future, but was abandoned because: the complexity of the “extended notation system” and managing rhythmic flexibility to an expressive level;

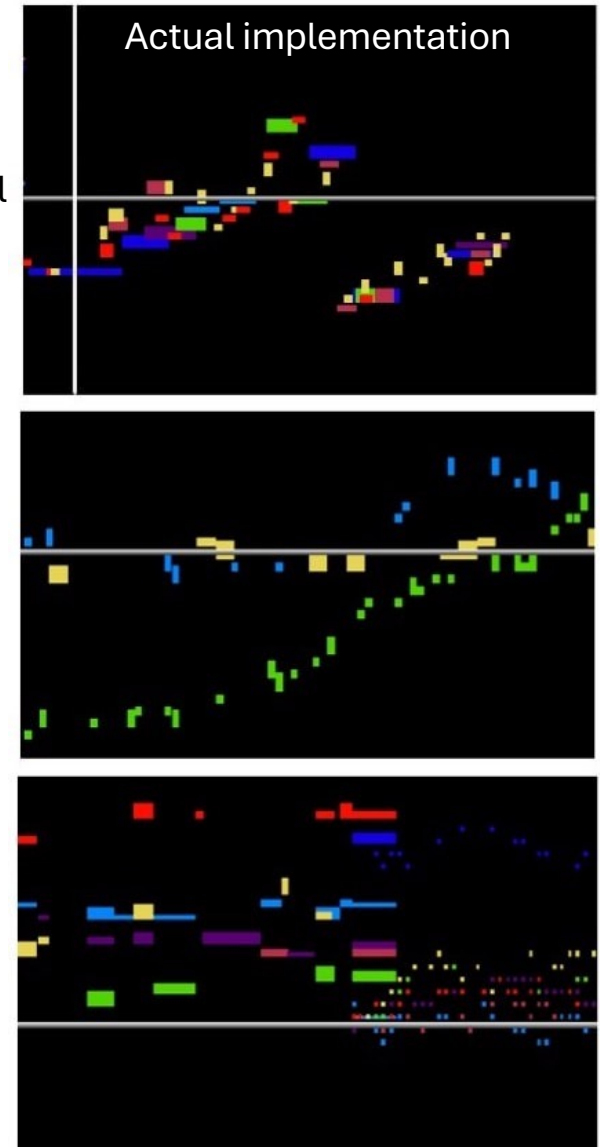
The availability of existing well-implemented realtime notation solutions such as *MaxScore* and *Bach* (Max).

This approach began to be explored in the work *Medusoid* (2022).

367 notation glyphs were created representing elements of pitch, notation, articulation, dynamics and so one were created ie:

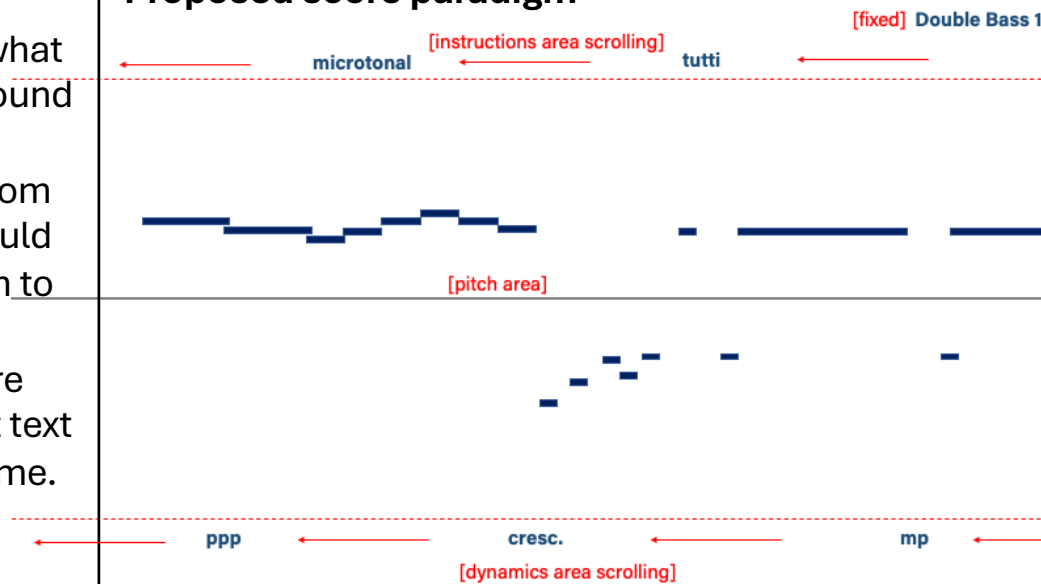


Medusoid (2022) – implemented generative score distributed over LAN in canvas Mode in the Decibel Scoreplayer on iPad. In the work, twenty-nine compositional textures (with nicknames such as "Blocks gliding", Clouds, Rain, Waves, Clusters.. etc) were selected and then broadcast by Max to the network of iPads as instrumental parts and a score. The score consists of a simple scrolling proportional notation - length = duration, vertical height = pitch and thickness = dynamic - in a different colour for each instrument. The work permutes the textures in realtime, but treated the ensemble (of 8) as a means of generating “mass effects” akin to Sound Mass or Sonorism works such as Ligeti’s *Atmospheres* (1961).



The work was somewhat successful, but we found it better for the performers to read from the score (so they could see their contribution to the texture) and unfortunately we were unable to implement text in the score at that time.

Proposed score paradigm

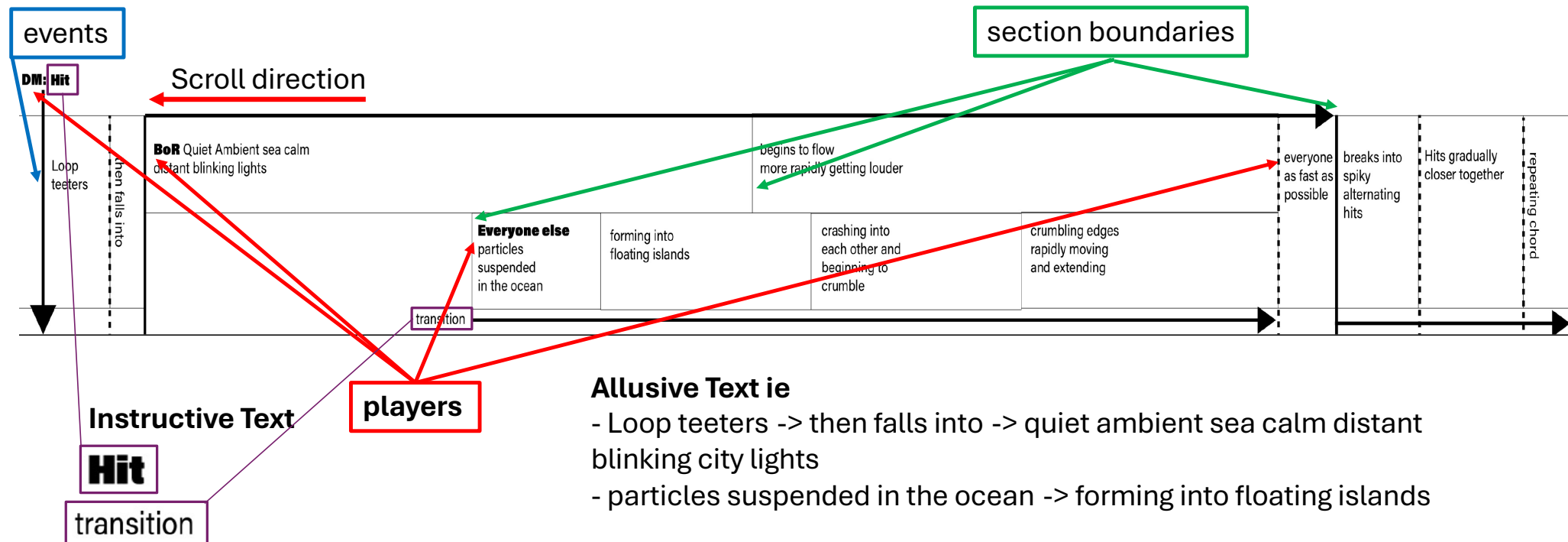


The textures of *Medusoid* were based on text prompts that I had long used as a shorthand means for planning the evolution of musical structures. In 2023, I built out this collection of Text prompts to include varieties of Musical objects, tempi, textures, structures, emotions, **transitions, kinetics, morphological variables**, (pictured) physical states, living things, machines and environments.

Transitions		Kinetics			Morphological Variables		
modulation	Matching Action Cut	Gravity	push	Journey	Lateral Sliding	shape	inverted U-shape
accel	Split Cuts	Orbit	drag	Explore	engulf	directionality	Jo-ha-kyū
rall.	Dynamic Cuts	Rebound	pull	Meander	obscure	contour	spiral
rit.	Cross Cut	Bounce	roll	Spiral	mass	dependency	Crisp
dim.	Cut Away	Melt	slide	Explode	contracting	autonomy	Blurry
cresc.	Contrast cut	Evaporate	inertia	scatter	Disintegrate	change	Transparent
thickening	Parallel Editing Cut	Freeze	spin	break	Distort	evolution	Faint
thinning	Montage	Condense	tangle	Climax	Flourish	Asymmetric	saturated
rising	Invisible Cut	mass	Mirror	inciting incident	Twist	Adjacent	unsaturated
falling	Cut in	Inertia	Burst	reaction	Intermittent	Overlapping	contrasted
continuous	Insert Cut	Ripple	Fall	confrontation	Irregular	simultaneous	luminence
discontinuous	Defocus	elasticity	absorb	Folding	random	spiky	orientation
Hard Cut	Dissolve	strain	burning	Tilting	loose	smooth	size
Fade	Iris	compression	eject	Uplift	Transfigure	bumpy	position
Wash	Whip Pan	expand	delete	Subside	crawl	broken	Resolution

Salmon Hats [2024], created for a performance by Audiovisual improvising noise group Black Zenith and staff at WAAPA, was not part of the Tectonic series. For the work, a notated score was rejected in favour of (almost entirely) text-based prompts. Several elements of the work contributed to the final model adopted in *Pannotia*:

- A networked scrolling score allowing the possibility of both coordinated evolving and periodic textures and sections.
- Instructive and allusive textual indications
- Graphical indications variously for players, section boundaries and events.
- Synchronised WAN capability. (It was performed in the Text Score Performance Demo earlier today.)



The 100 Text-based texture prompts were developed and categorised into Shapes (ie grains, points), States (ie solid, liquid, gas), Sound and Music Objects (ie rain, trill), Transitions (ie melt, fadeout), Actions (ie solo, slide) and Reactions (ie recoil, follow). In some cases the categories form logical sequences (e.g. gas-liquid-solid), enabling contrasts between evolving transformations or disjunct blocks of texture. The aim of this approach was to support the goal of improvised spontaneity, together with a more composed sense of cohesion. Since some of the prompts were potentially conceptually unclear, it was decided to add a graphical prompt to visually illustrate what was intended.

States	Solid	Colloid	Liquid	Gas	Plasma	wind	mist	cloud					
Shapes	Grains	Points	Spikes	Slivers	Wedges	Planes							
Weather	wind	mist	cloud	rain	hail								
Geographic	ocean	islands	desert	mountains	forest	jungle							
Sound Objects	AirCon	MRI	FluorescentBuzz	MetalBall	Shorting	Sonar	MorseCode	Machines	Creaking	Crackling	Noise		
Music Objects	Staccato	Disjunct Staccato	Random Staccato	Staccatogeddon									
	Arpeggios	Disjunct Arpeggios	Random Arpeggios	Arpmaggeddon									
	trill	Disjunct Trills	Random Trills	Trillmageddon									
	Tremolo	Disjunct Tremolo	Random Tremolo	Tremaggeddon									
	Aggregate	Disjunct Aggregates	Random Aggreate	Aggregddon									
transitions	Freeze	Melt	Condense	Evaporate	distort	expand	compress/ dilator	fade out	fade in	echo			
Actions	Solo	Becalmed	fall	rise	Meander	Spiral	bounce	teeter	drag	slide			
Reactions	Tutti Wedge	Tutti sfz	Tutti Swells	Tutti Hits	Recoil	Shadow	Shadow Parallel	Shadow Contrary	Shadow Oblique	Shadow Augmented	Shadow Diminished		

The initial concept for the score was to display the text and graphical prompt together with an indication of tempo, register, tonality, dynamic and duration, as well as the subsequent texture. Having previously experienced problems with visually complex scores in the work **Transit of Venus** (2009), it was decided to simplify the score.

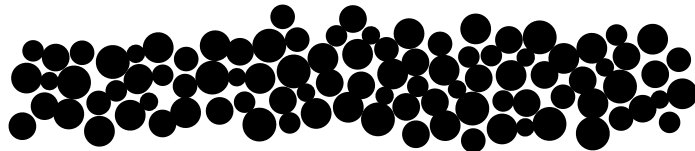
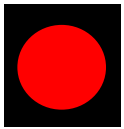
Transit of Venus (2009)

The image shows three panels of musical score notation for different instruments. Each panel includes a dynamic marking (less than, equals, or greater than), a texture/articulation symbol, tempo and target information, and a pitch indicator. The instruments are violin, viola, and cello.

Grains [Texture] **Mid-Low** [Register]

chromatic [Tonality]

88bpm [Tempo]

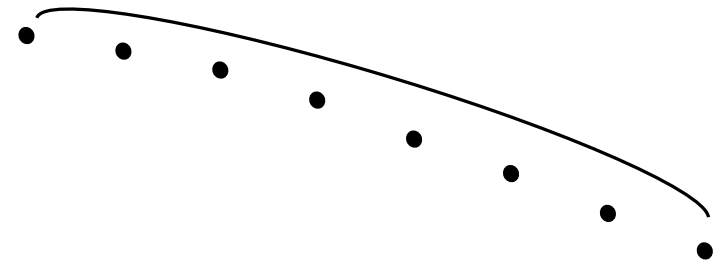


[dynamic]

p

ppp

Fall

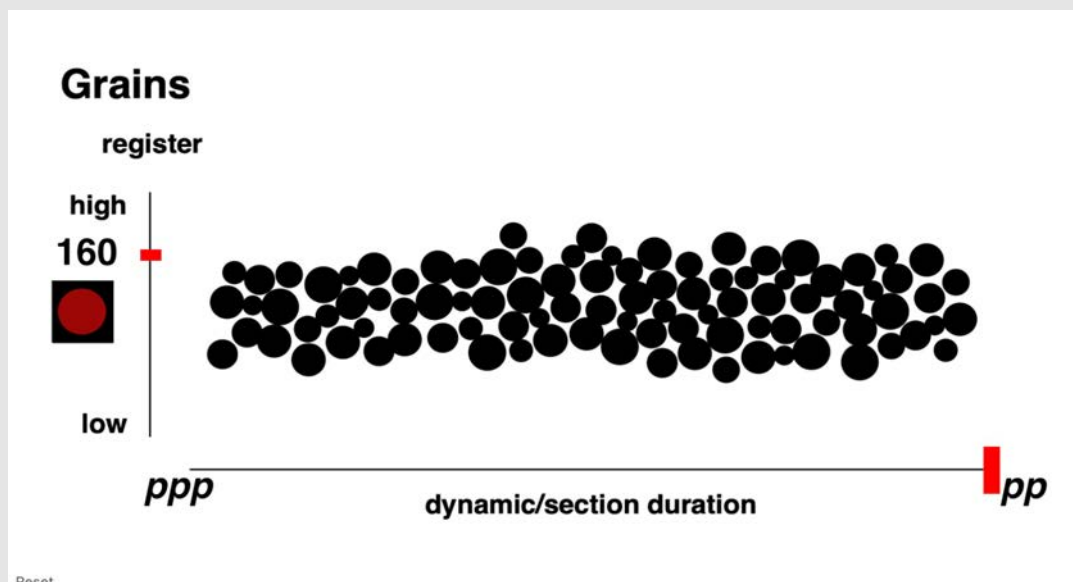


p

ppp

An intermediate “proof-of-concept” small ensemble work, *Tjoritja* (2025), trialed a simplified score, distributed over LAN in the Scoreplayer Canvas Mode. The feedback from this performance, was that the score could be simplified further as they were superfluous, distracting or both: this included the words “high” and “low”, the second dynamic, tempo number and flashing metronome. These were removed from the *Pannotia* score. However, it was suggested that having a text prompt indicating the subsequent texture would assist creating transitions from one section to the next.

<https://lindsayvickery.bandcamp.com/track/tectonic-tjoritja-2025>



Tjoritja [2025] lindsay vickery

Join Network

Tjoritja.n4n369f40f

/Server/Bye!

Preset Score

Start Score

Stop Score

Reset Score

Clear Score

0 Current Timing

0 Start From

parts

trill register next texture: **part 1**

section duration

trill register next texture: **part 2**

section duration

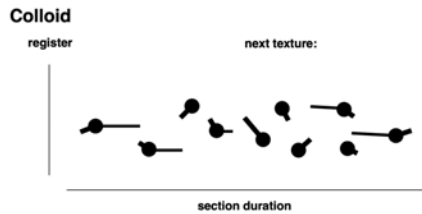
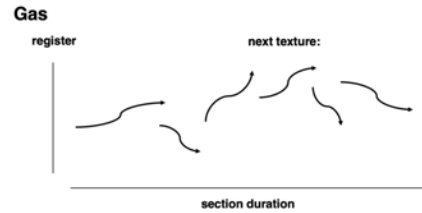
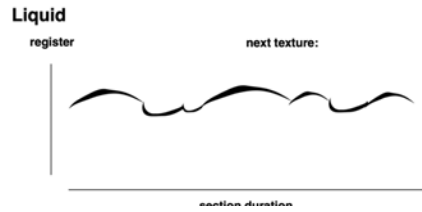
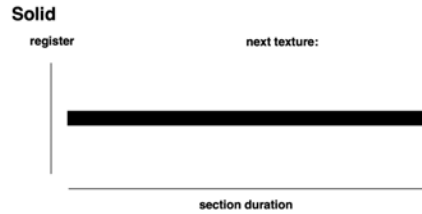
Solo Improv register next texture: **part 3**

Solo

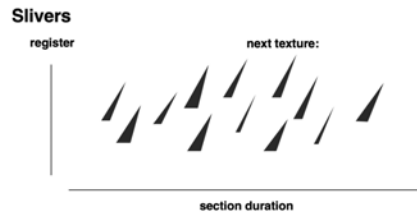
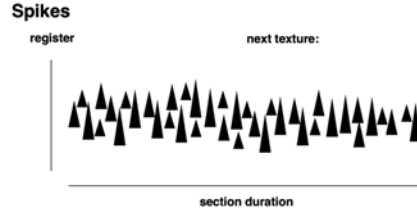
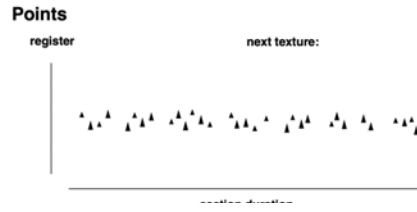
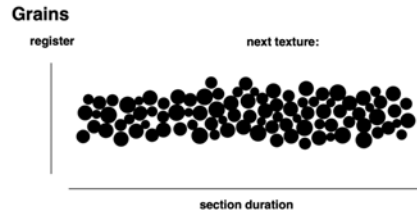
section duration

A full set of fixed text/graphical prompt “screens” were created, for example:

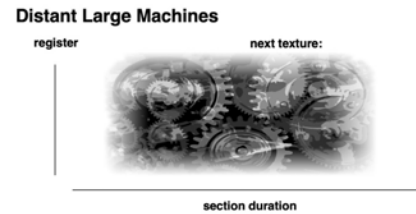
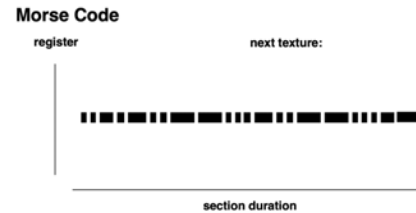
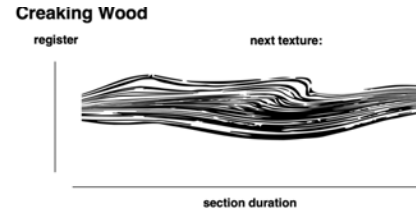
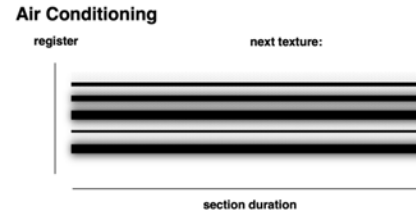
States



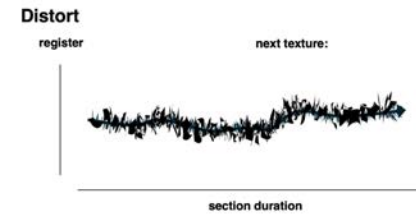
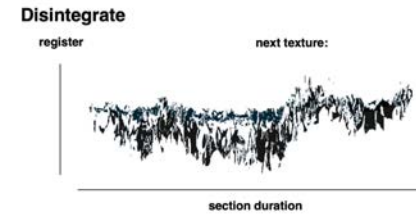
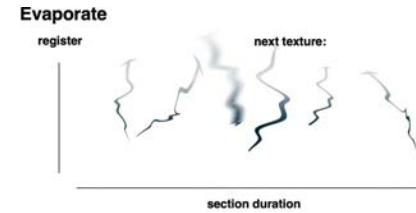
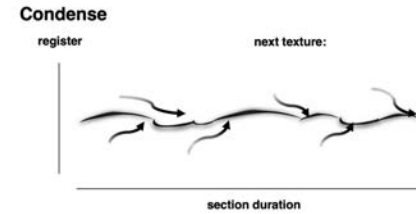
Shapes



Sound Objects



Transitions



Final *Pannotia* Score Paradigm:

To these fixed text/graphical prompt screens are added indications of part name, dynamic and next texture and red indicators for register and a “playhead” that scrolls across the page from left to right.

Dynamic indications

n.

pp

p

mp

mf

f

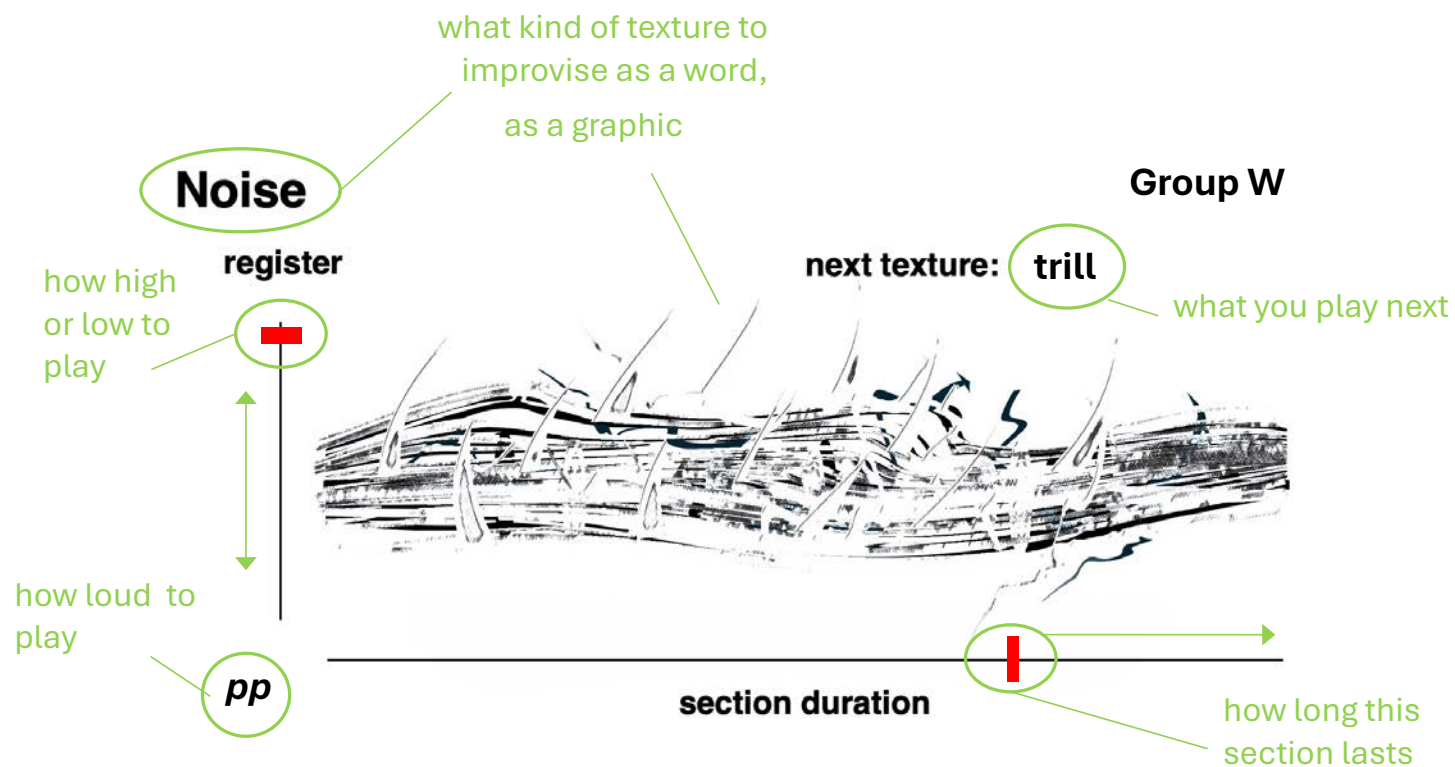
ff

cresc.

dim.

cresc.-dim.

dim.-cresc.



SATURDAY AUGUST 30, 8:00PM Concert Demonstration: A Performance of Large Ensemble Works

SOLOS

Onsite (Perth - ECU)

Solo 1
Mary Rapp - Double Bass

Solo 2
Lesley Kaye - Gongs

Offsite

Solo 3 (Singapore)
Scott Wilson - Supercollider (Birmingham)

Solo 4 (Vienna)
Gloria Damijan - percussion

The orchestration by dictated partly by necessity – maximum size ensemble in the venue, unknown participants etc. It gradually coalesced into a mix of solo, small group and large groups which fortunately allowed for a range of musical languages ”massed behaviours” of groups, independent behaviours of soloists and something in between, to be explored in a ”concertante” type arrangement of forces.

SMALL GROUPS

Offsite

Group Bz (Singapore)
Darren Moore - Mod Synth (Lasalle)
Brian O'Reilly - Mod Synth (Lasalle)

Group AIM (Sydney)
Mark Oliveiro - modular box/CX7 (AIM)

Group AIM (Singapore)
Dirk Stromberg - frypone (Lasalle)

Group dB (Melbourne)
Cat Hope - bass flute (Monash)
Aaron Wyatt - viola (Monash)

Group CO (Brisbane)
Erik Griswold - keyboard (Griffith)
Vanessa Tomlinson - percussion (Griffith)

PreRecorded

Group ASP (Alice Springs)
Jon Rose - violin
Hollis Taylor - violin
Luiz Gabriel Gubeissi - double bass

LARGE GROUPS

Onsite

Group W (Winds)
Raegan Colyer - Flute
Marcel Howell - Cor Anglais
Zoe Barron - Clarinet
Elias Benischauer - Tenor Sax
Izzy French - Trumpet
Fred Johnston-Horstman - Trombone

Group S (Strings)
Jess Macdougall - Violin
Lucinda Poy - Violin
Ben Buchanan - Cello
Shanna Shang - Cello

Group C (Chordal)
Alix Simatos - Electric Guitar
Zoe Koong - Electric Bass
Darcy Lewis - Keyboard

Group P (Percussion)
Genevieve Wilkins - Percussion
Callum Fairweather - Percussion
Monica de Snoo - vibraphone
Hayden Tamblyn - Percussion

Group E (Electronic)
August Pope - NoInput Mixer
Ellie Doyle - Mod Synth
Max Bell - Laptop
Anthony Hughes - Laptop

Offsite

Group W (New York) (on video)
Viv Corringham - voice
Group W (Brazil)
Cássia Carrascoza Bomfim - flute

Group S (Boston)
Jane Wang - cello

Group C (Toronto) (on video)
Colin James Gibson - Electric Guitar
Group C (Toronto)
Diane Roblin - keyboard

On the positive side:

- the approach was effective as a strategy to coordinate a distributed, quasi-improvised performance exploring a “middle-ground” improvised/structured compositional approach, combining relative performer freedom combined with the sort of coordination and rapid sectional changes more typical of traditionally scored music;
- the Canvas Mode is a promising and expandable medium for telematic score distribution, that delivered synchronization for coordinated discrete changes in texture that encouraged “telepresence” in the ensemble;
- the text+graphic prompt model was mostly successful at conveying the composer’s intentions.

Issues encountered:

- draw commands were occasionally “lost” on the network, resulting in the score “hanging” or being otherwise ambiguous;
- although the “scheduling” process was gradually streamlined, it was relatively laborious.

Unknown or future work

- The exact degree of synchronization has not been precisely measured;
- the text+graphic prompt model could be further refined by adding more effective and removing more ambiguous prompts.

