

The Fitness Tree: notating musical movement

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Contact

For more information, visit
www.fitness-tree.com
 or email info@fitness-tree.com

Why?

to provide a visual, non-verbal
 representation of the structure and content of
 a musical score (or a set of
 instructions) in a way that is
 accessible to all learners, including
 those with learning disabilities,
 visual impairments, and hearing
 impairments.

The notation

uses a combination of
 symbols, colors, and shapes to
 represent musical concepts.

The symbols

are used to represent
 musical concepts such as
 rhythm, pitch, and dynamics.

The colors

are used to represent
 musical concepts such as
 mood, tempo, and style.

The shapes

are used to represent
 musical concepts such as
 form, structure, and content.



Production comments

These comments provide
 additional information about
 the production process.

Feedback comments

These comments provide
 feedback on the production
 process.

Notes

Additional notes and
 information.





The Fluxus Tree: notating musical movement

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this presentation is available at:
<http://rheadley.net/presentations>

Why?

to unify dots and signals: enriching electronic music with live performance and algorithmic patterning [quotation =>]

to investigate links between 'technologies' and approaches: mapping between domains: algorithm and physical gesture into live notation: understanding which gestures have 'meaning' and which gestures don't

to investigate liveness in music performance and improvisation

to learn about and analyse compositional processes through automation

...so it's a technique **and** a tool, just as 'The Fluxus Tree' is both expressive and an experiment

Music, controls and signals

'Music processing', in the way that this community uses it, denotes the processing of music information, which is stored in its structured symbolic musical 'Gestalt'. The term 'music processing' implies a difference from the signal processing community, in that it does not deal with sound as the source material for investigation, but deals with **music as score or music as timebased structure stored in a symbolic form, such as codes, languages**, etc. Obviously the boundary between signal and 'music processing' can become very blurred, but it is useful to mention this division as it seems that the research, its communities and their methodologies tend to be different and do not overlap in a major way.

Carola Boehm, Book Review, Organised Sound 7(1): 79–82, 2002



A handwritten musical score for voice and piano. The score is written on a system of six staves. The top two staves are for the voice, and the bottom four staves are for the piano. The tempo is marked as $\text{♩} = 110$. The key signature has one sharp (F#). The score includes various musical notations such as notes, rests, and dynamic markings. The voice part has markings for *mf*, *p*, *f*, *mf*, and *mf*. The piano part has markings for *p*, *f*, *mf*, and *f*. The score is divided into two systems, with the first system ending with a double bar line and the second system starting with a new measure. The score is written in a clear, legible hand.

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The technique:

...investigates and implements:

automated, algorithmic composition

music composition, performance, improvisation and notation

physical computing and interactivity

Changes to notions of composition (and notation)

"Formerly when one worked alone, at a given point a decision was made, and one went in one direction rather than another; whereas, in the case of working with another person and with computer facilities, the need to work as though decisions were scarce - as though you had to limit yourself to one idea - is no longer pressing. **It's a change from the influences of scarcity or economy to the influences of abundance and - I'd be willing to say - waste"**

John Cage quoted in CMJ 16:4 by Larry Austin

"Computers are bringing about a situation that's like the invention of harmony. Subroutines are like chords... [and] ... are altered by a single punch. **We're getting music made by man himself, not just one man."**

John Cage, 1969.

The tools:

provide a structure for the generation of music and/or common practice notation (plus) according to stylistic rules

facilitate communication between SuperCollider and INScore

<http://supercollider.sourceforge.net/>



<http://inscore.sourceforge.net/>



<http://rheadley.net/inscore> (from October-November 2012)

eventually, maybe, offer the beginnings of a more standard interface for physical mapping

Related work: algorithms

Aaron et al., "A principled approach to developing new languages for live coding", Proceedings of NIME 2011

Collins, N. "The Analysis of Generative Music Programs." Organised Sound 13(3). 2008

algorithms might be...

top down
bottom up
hybrid
bespoke

Hedelin, F. "Formalising Form: An Alternative Approach To Algorithmic Composition." Organised Sound 13(3): 249-257, 2008.

Loy, D. G., "Musimathics : the mathematical foundations of music", Cambridge, Mass. ; London: MIT Press. 2006.

Edwards, M., "An Introduction to Slippery Chicken", ICMC Proceedings, 2012.

and Cope, Roads, Xenakis, etc., etc...

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top down

bottom up

hybrid

bespoke

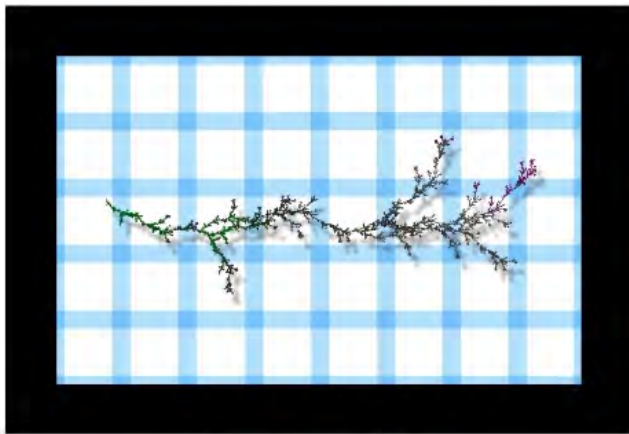


Figure 1. *Vine and Tablecloth*



Figure 11. A landscape made from IFS attractors.

Mark Franz, 1997, *Mathematics and Art*

Related work: live or real-time notation

[definition =>]

- MaxScore (Didkovsky, Hadju)
- Bach Project (Agostini, Ghisi)
- eScore (McClelland, Alcorn)
- Lilypond with extensions
- Live Notation (Eacott, Collins)
- LOLC (Freeman, etc.)

Differences in environment (CAC or not) functionality and aesthetics, including quality of notation, speed and variety of rendering, etc.

definition:

'live notation' is...

music notation that is generated as the performance progresses and where this process is itself considered to be of central importance in the composition. In this case I am referring to **common practice music notation**, generally understood to be the notation that, like common law, has become commonly used over the last 800 or so years

Related work: live or real-time notation

[definition =>]

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Performances

[to display, or not to display, the notation?]

Cambridge Festival of Ideas 2011
Mifune Tsuji <http://rheadley.net/calder>

SuperCollider Symposium 2012

Marcus Barcham-Stevens <http://rheadley.net/calder>



YouTube



Comments

from a variety of reviews

"machine musicianship and learning as a compelling reason for using real-time notation"

"concerns over the possible difficulties involved in keeping track of a performer's place in the 'score'"

"concerns over the feasibility of an 'accurate' and structured rendition"

"concern over lack of rehearsal, familiarity and even the status of the performer: only a glorified sight-reader, no room for interpretation"

Performers' comments

I put these concerns to some of the performers involved - they came up with some interesting, unexpected and innovative opinions

Cheryl Frances-Hoad

composer (and occasional, splendid 'cellist)

enjoyable to have more control over contribution

creative use of system idiosyncracies (rapid changes in page writes)

incompatibility with 'standard' performance

challenging, comparison with chamber music

interesting take on remembering structure - that this could happen within the time-frame of the piece

the use of 'archetypes' [indeed, the idea in my mind, maybe associated with the notion of algorithm design, was of 'archetypally' rather than specifically expressive melody]

very positive use of negatives (the lack of 'craft' made Cheryl play more expressively; the lack of dynamics enabled more natural, 'very pleasing' expression)

on awaiting unknown instructions: the thrill of that tiny part which could go wrong(!?) (I can't imagine what she means...)

Performers' comments

Marcus Barcham-Stevens
violinist and composer

relegation to sight-reading: 'no'

creative interpretation

in the moment, adding tension and excitement

role of memory in performance: longer, more melodic phrases can be memorised and then creative choices made

the role of individual choice as presented by the notation, (e.g. tempo)

'informed' improvisation

consciousness, instinct, intuition in interpretation, performance and improvisation

Marcus was provided with a couple of videos of a couple of 'versions' of the piece ("Calder's Violin minus one") and so is able to say that he 'practised the piece quite a lot'

He makes the point that he understood the 'gestalten' of the music which did enable him, in his opinion, to 'shape' and even 'internalise' the music

Demonstration



Next steps

multiple parts all generated live: 'group' structured improvisation

rhythmic synchronisation across parts and groups

dynamics, phrasing, annotation...

investigating the balance between composition, performance and improvisation

machine listening

live coding of 'real' performance

'The Fluxus Tree' (composition) and 'Hands' (gismo) show, amongst other things, the importance of some gestures, and yet the fact that they shouldn't all be taken into account

it's clear that physical mappings are not understood: experimenting in 'The Fluxus Tree' has revealed many different methods and possibilities

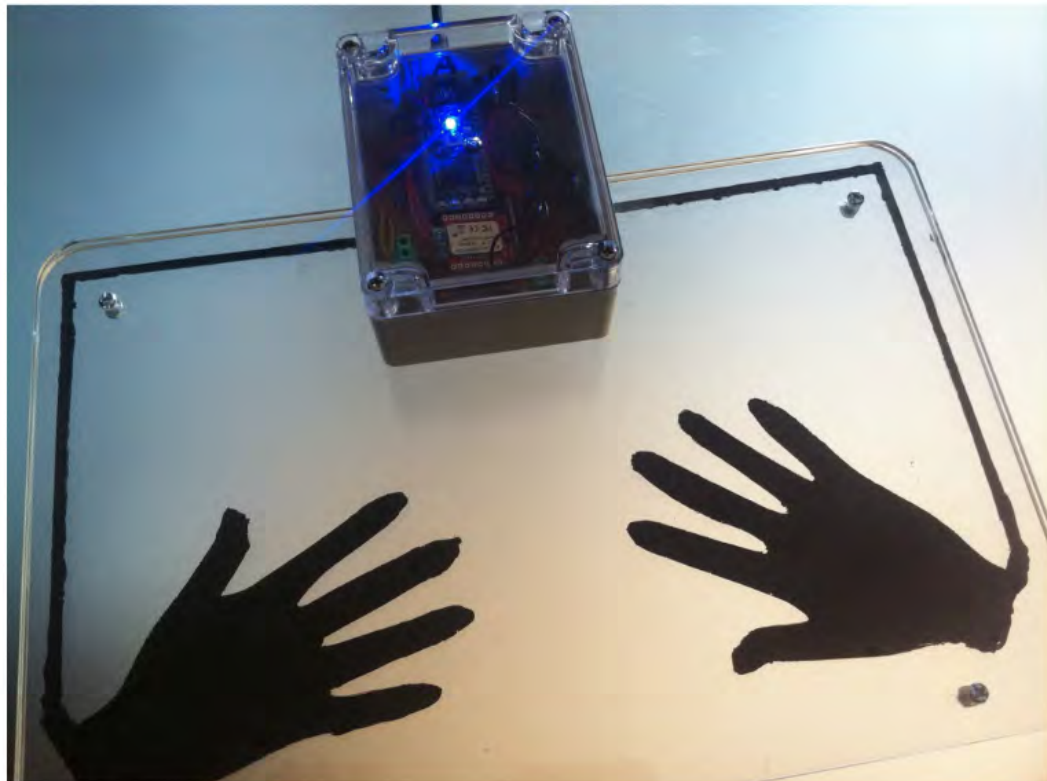
therapeutic uses (gismos)

pedagogical uses, maybe particularly support for sight-reading and improvisation

Touching Sound and Gismos...

Generic Interfaces for Socio-musical Orientation

Computer Supported Cooperative Work



Thankyou

any questions?

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