Making People Move:

Collaborative cross-domain expression, real-time score generation and performance

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This presentation is available at **http://rhoadley.net/presentations/ccde-aru-s.pdf**

v0.03

8th Feb 1963

"Notation is a way of making people move. If you lack others, like aggression or persuasion. The notation should do it. This is the most rewarding aspect of work on a notation. Trouble is: Just as you find your sounds are too alien, intended 'for a different culture', you make the same discovery about your beautiful notation: no-one is willing to understand it. No-one moves."

Cornelius Cardew, from **Treatise Handbook**, 1971

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Three research streams

- algorithms (patterning)

- physical computing

- notation/representation

These can be linked by cross-domain expression and interpretation

Cross-domain expression?

The **expressive domains** involved in this work include **music** (audio and notation), **movement** (dance) and **text** (poetry)

Music is already internally cross-domain (as are all the arts): it is formed of **physical/mental action** utilised to create patterns of music, text or graphic notations

Physical computing

NIMEs or what? Laetitia Sonami *Lady's Gloves*
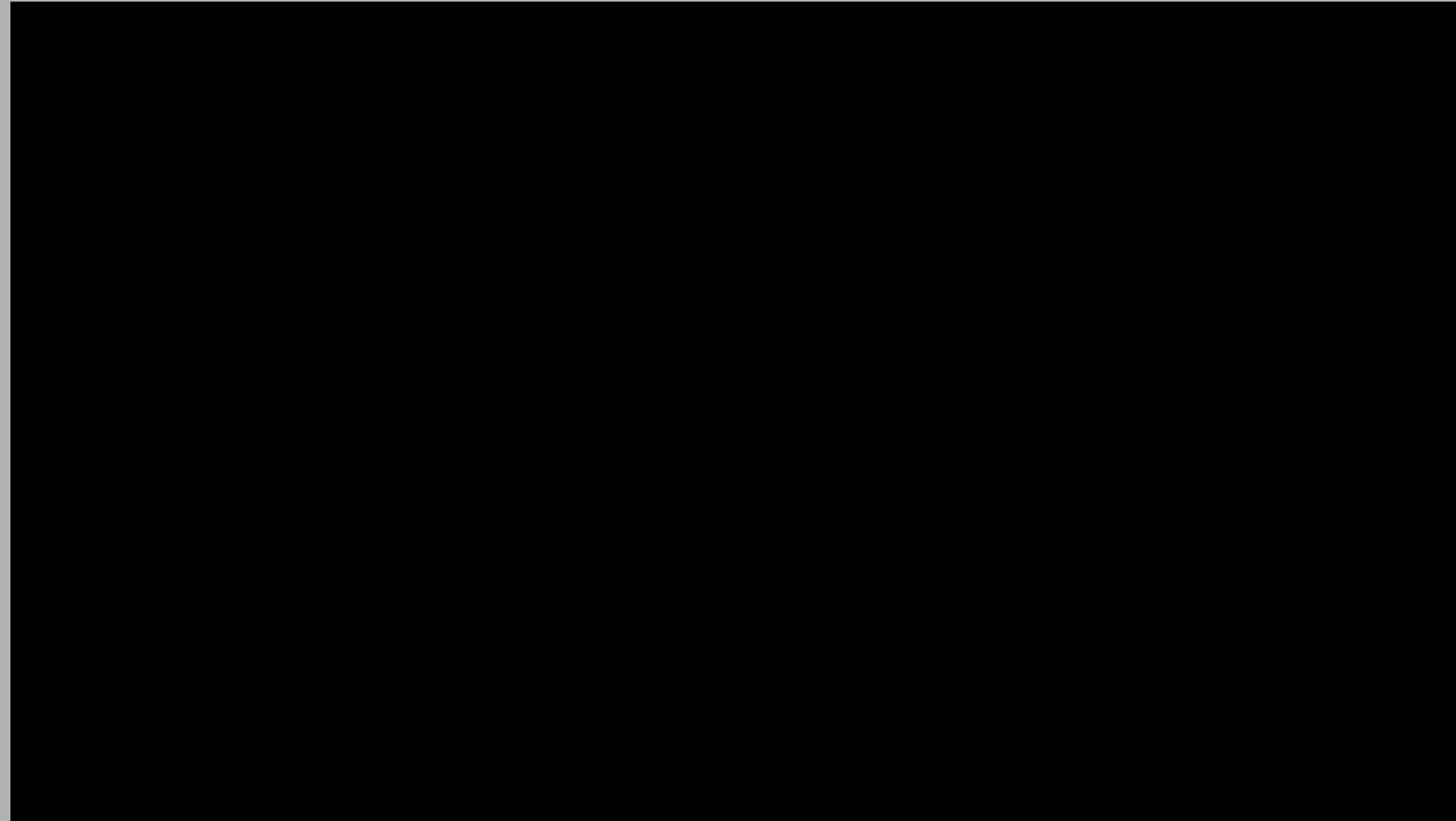
Marije Baalman Wezen-Gewording (2013)

Gewording (Becoming) is the first performance version where the link between physical and sonic gesture is explored during a live performance, combining movement of the body and live coding.

Imogen Heap Me the Machine (2014)

TEDxBRISTOL 2011 - CREATIVITY SESSION - IMOGEN HEAP

5:32 drum-track; 6:15 panning; 6:28 filtering; 7:10 pitches; 7:45+ violin bow error?

Kinect advert (2011) (games players don't seem to like the Kinect One - it's too personal)

Music notation/representation

• is a complex **semantic** and **graphic** form of 'language'

• is very **domain specific** - it's not really suited to non-specialised environments

• presents many **challenges** concerning electronic **implementation** and **display**

Notation: bad? examples

a)   Stravinsky: Orpheus

(Violin I)

a) Line and dot (sustained, but not to full length), or Stravinsky's special mark for 'sharp attack without accent'? No explanation is given in the score.

from Hugo Cole, Signs and Sounds, 1974
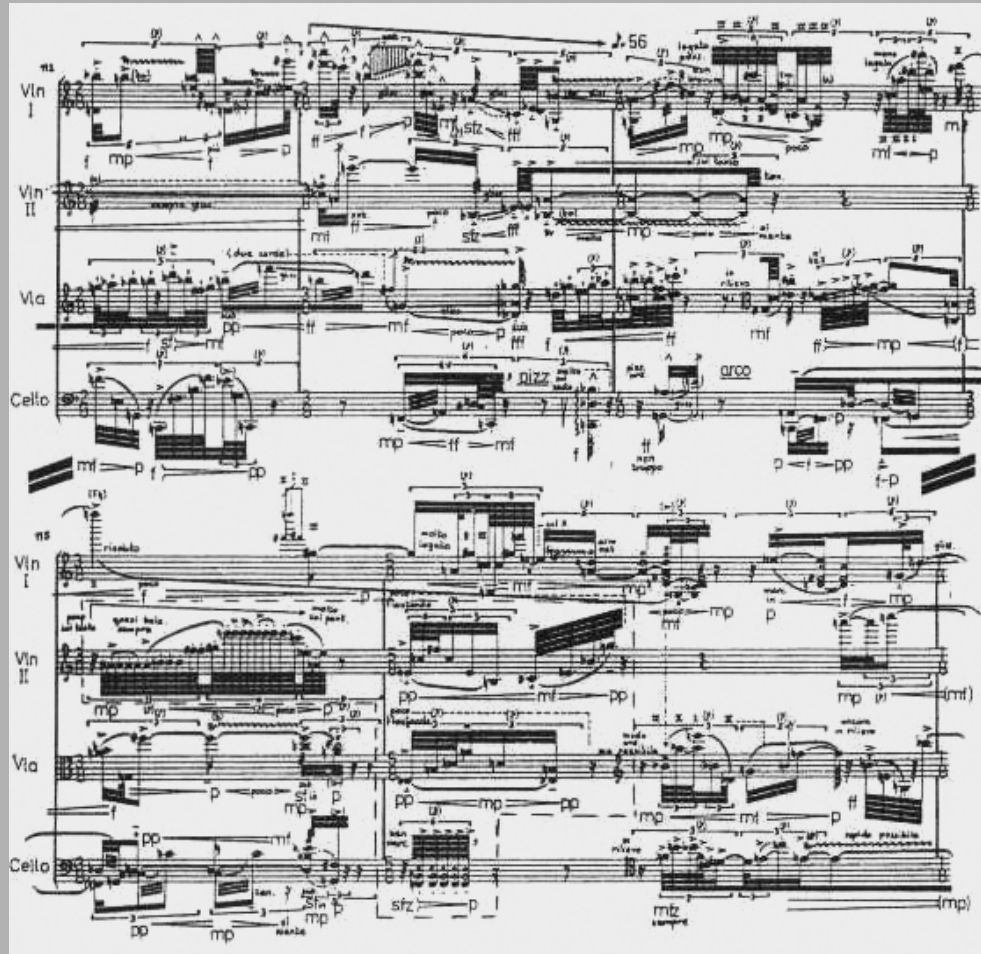
Notation: bad? examples

c) Should the dotted rhythm of the piano be played as a triplet? A case of historical ambiguity, occurring at the critical moment when the convention was sometimes used, sometimes not used. This example was discussed at length in the *Musical Times* of September 1963: experts were evenly divided as to the answer.

d) Inconsistency of lines and accents; even in printed scores this type of inconsistent marking of homophonic passages is not uncommon.

from Hugo Cole, Signs and Sounds, 1974

Notation: complexity

Ferneyhough **Second String Quartet** (1980)

Notation: mea culpa

Richard Hoadley **Four Archetypes** (1995)

Graphic notations: Cardew

From Cardew **Octet 61** (1961)

Cardew **Treatise** (1963) page 46
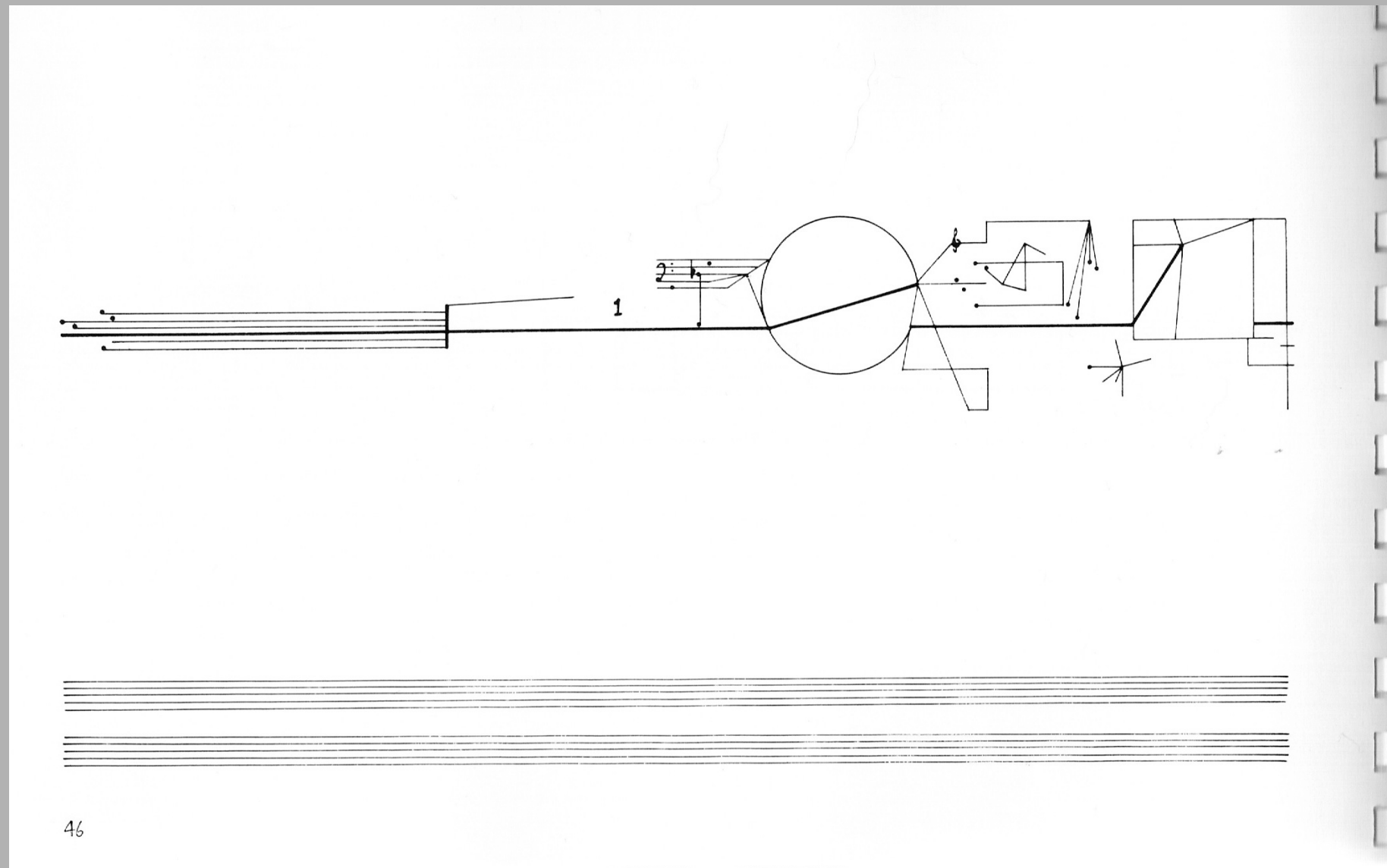
Cardew **Treatise** and **Bun No. 2** (1964)
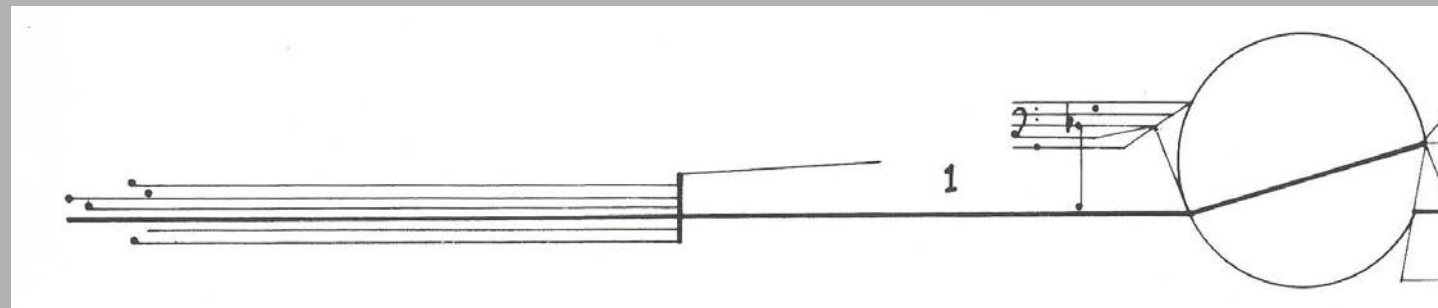
Detail from Treatise (p46) and Bun 2...
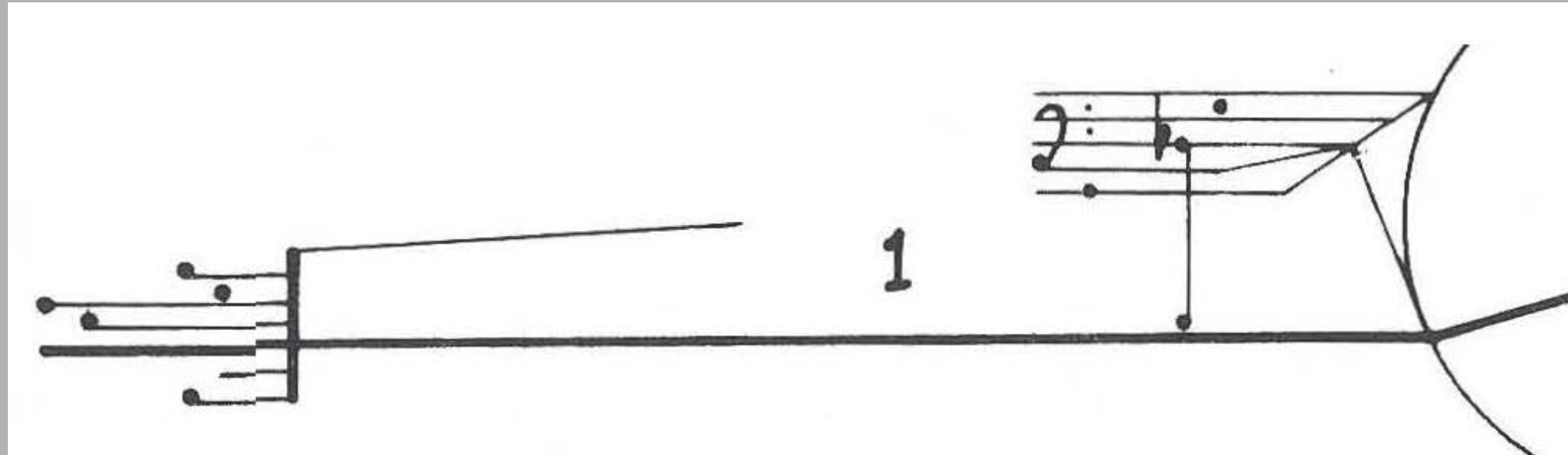
alternatives (Hoadley **Sextet** 1987)...

from... Birtwistle **Verses for Ensembles** (1968-69)
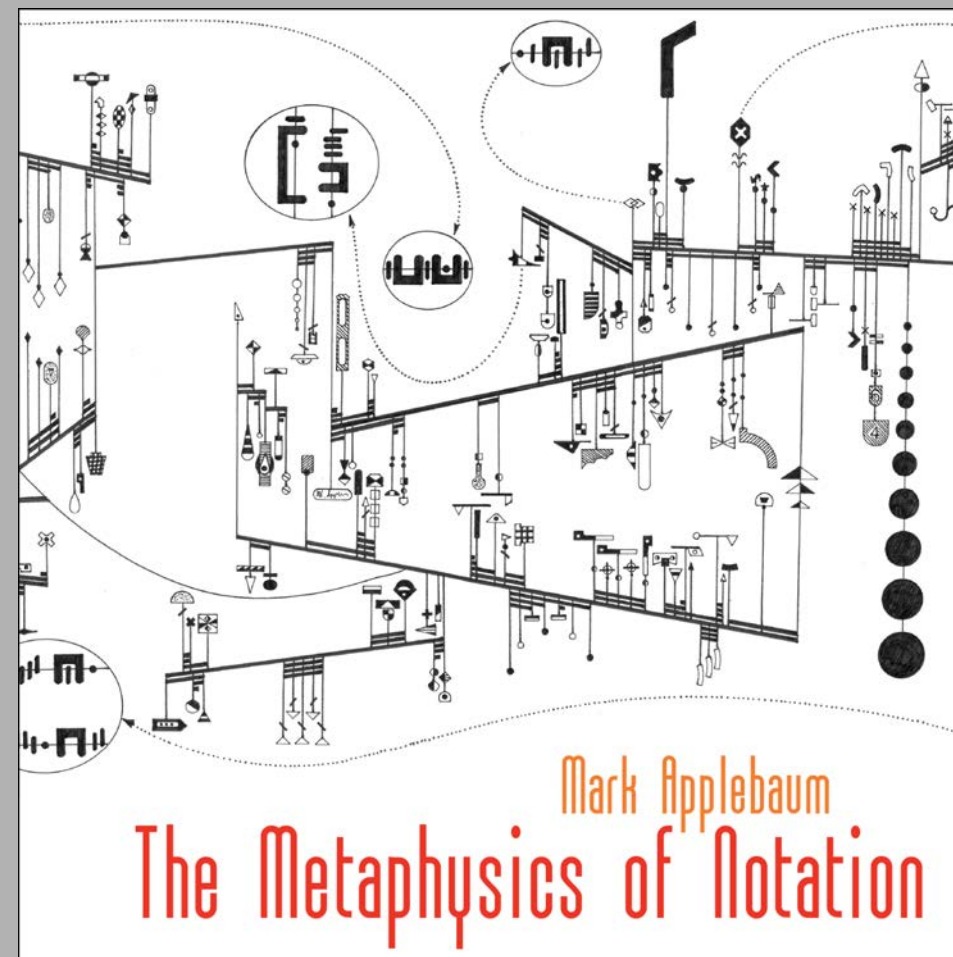
Graphic notations

From Appelbaum (Stanford), **The Metaphysics of Notation** (2010)

Graphic notations

From Appelbaum (Stanford), **The Metaphysics of Notation** (2010); 3:28 Ferneyhough 'music'; 3:58 interpretation; 6:50 Ferneyhough 'toothache'

Dynamic scores and live notation
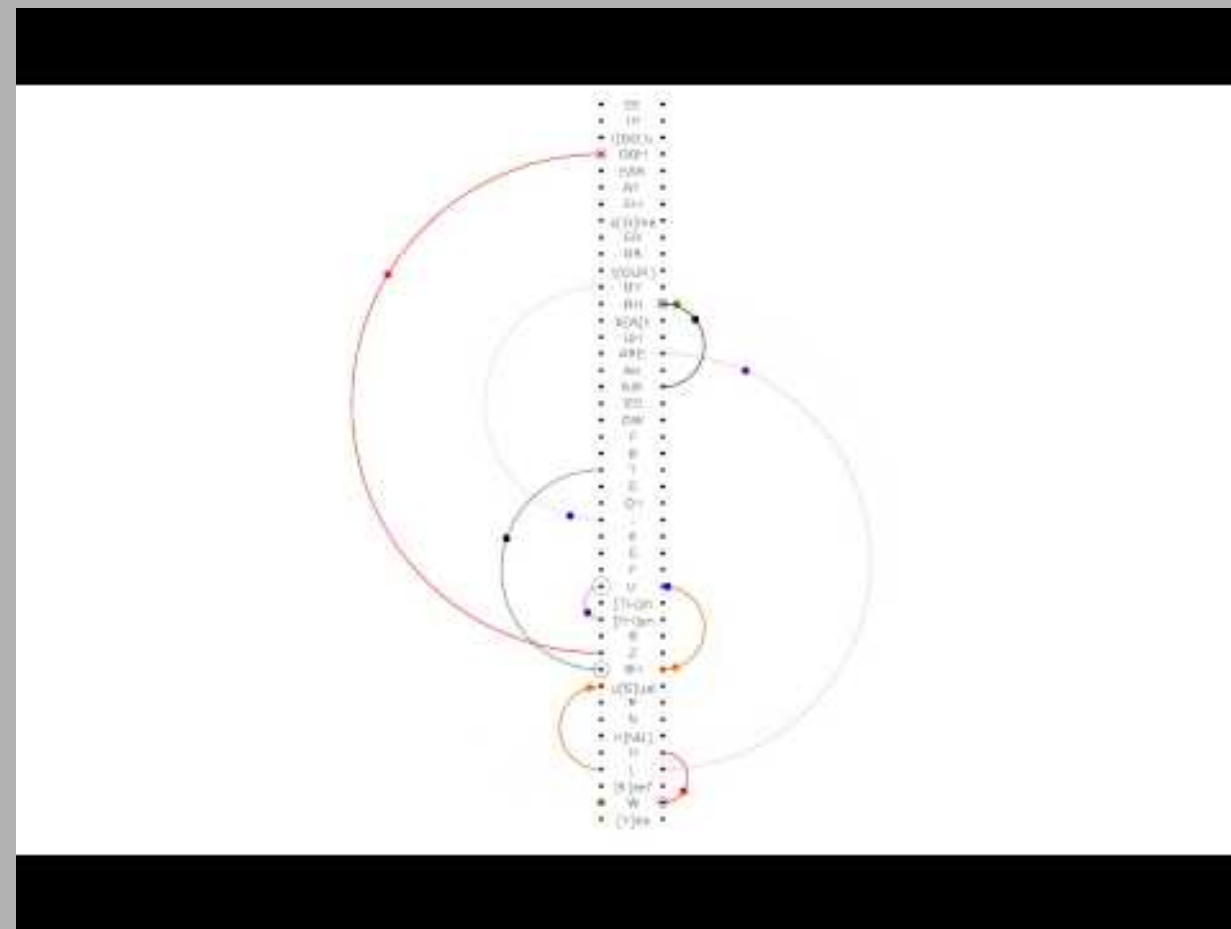
Ryan Ross Smith - Study no. 46 [for vocalists]

Why pursue this research?

• it illuminates the act of **composition**

• it unifies **dots and signals**: enriching electronic music with live performance and algorithmic patterning [Boehm quote below]

• it enables the **live synchronised algorithmic generation of electroacoustic material and notation**

• it links **expressive domains** - algorithms, physical gesture and live notation - the **'meaning'** of gestures becomes a part of the creative process

• it utilises **virtuosic performance** and investigates **liveness** in music **performance** and **improvisation**

• it allows **analysis** of compositional processes through automation

• ...as a consequence and to clarify, it's a **technique** and a **tool**, just as these compositions are both **compositions** and **experiments**

dots vs signals

" 'Music processing'...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**. "

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

Live notation

"We consider real-time music notation to be **any notation**, either traditional or graphic, **which is created or transformed during an actual musical performance**. However, the term has not been standardized, and various articles in this issue refer to real-time music notation using other terms, such as dynamic music notation, live scoring, virtual scoring, and reactive notation.**"**

Contemporary Music Review, Vol. 29, No. 1, February 2010, p. 1, Preface: Virtual Scores and Real-Time Playing, Arthur Clay and Jason Freeman

The tools

• provide a structure for the generation of music and/or common practice notation as well as many arbitrary graphical elements

• facilitate communication between SuperCollider and INScore

• offer the beginnings of a more standard interface for physical mapping

and are located...

- https://github.com/supercollider/supercollider

- http://inscore.sourceforge.net/
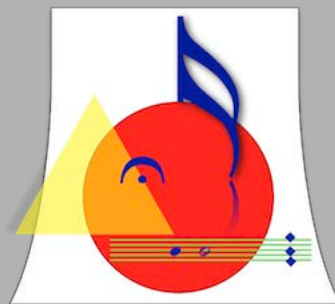
- http://rhoadley.net/inscore (eventually...)

Performances

Gaggle, HCI conference, Cambridge, UK, 2009

Gaggle, Museums, interfaces, spaces, technologies, 2010

Calder's Violin, SuperCollider Symposium, London 2012

The Fluxus Tree, LIPAM, Leeds UK, September 2012

Quantum Canticorum, Museum of Modern Art, Barcelona, June 2014

System Demonstration, Natural History Museum, London, June 2014

Semaphore, Cambridge, October 2014

How To Play the Piano, (Hoadley/Norman) Leicester, February 2015, piano: Philip Mead

Peer comment and criticism

- implementation of methods of **biofeedback** and use of data from musician's physical performance

- the possibilities of **machine musicianship and listening** as a compelling reason for using real-time notation (imagination over reality)

- concern over possible difficulties of **locating** one's place in the score

- the feasibility of obtaining an **accurate** and structured rendition

• the **fetishisation** of the notation (when displayed)

• the dancer being **caged** by the **cone of the Kinect** (MSphobia?)

• the **conservative** nature of the music (old fashioned modernism? a reasonable point, maybe, and there are no stylistic predicates with the technology)

(performers involved do not tend to agree with the majority of these comments, nor were views expressed at Natural History Museum)

Recent events

How to Play the Piano with Philip Mead, 26th February 2015, Exchanging Cultures Festival, De Montfort University, Leicester

Collaborative Cross-domain performance and real-time score generation: extreme sight-reading and beyond, workshop at the Guildhall Reflective Conservatoire Conference, Guildhall School of Music and Drama, London, 10am Sunday March 1 2015

Semaphore @ **Drawing Towards Sound**, University of Greenwich, 20th March 2015

Forthcoming events

Semaphore @ **Lunchtime Concert**, Mumford Theatre, ARU, 17th April 2015

How to Play the Piano with Philip Mead, 8th May 2015, Mayfest, Hertfordshire University

INScore workshop, 28th May 2015, Centre Universitaire Clignancourt, Paris-Sorbonne, a part of the first international conference on Technologies for Music Notation and Representation (TENOR) 29-30 May 2015, University of Paris-Sorbonne/IRCAM, Paris, France

Semaphore: cross-domain expressive mapping with live notation paper for presentation at TENOR 2015, Paris

Semaphore plus **new piece**, workshop and demo at Festival of Ideas, October 2015, then at the following venues:

• Cardiff Contemporary Festival
• New Cut Arts, Halesworth, Suffolk
• Colchester Arts Centre
• WestAcre Theatre, Norfolk
• Conway Hall, Holborn

Book chapter on cross-domain expression for **New Thoughts on Piano Performance**

TENOR 2016 in Cambridge!

video recordings of past performances are at **rhoadley.net/ youtube** and
rhoadley.net/vimeo

Thank you

any questions?

contact:
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this presentation is available at
http://rhoadley.net/presentations
as **ccde-aru-s.pdf**

Workshop demonstration

Just in case: