# Signs and Semaphores

## Cross-domain expressive mapping: making people move

Building Interdisciplinary Bridges Across Cultures

Faculty of Education, Cambridge University, 26th October 2014

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This presentation is available here: **http://rhoadley.org/presentations/signs-s.pdf**

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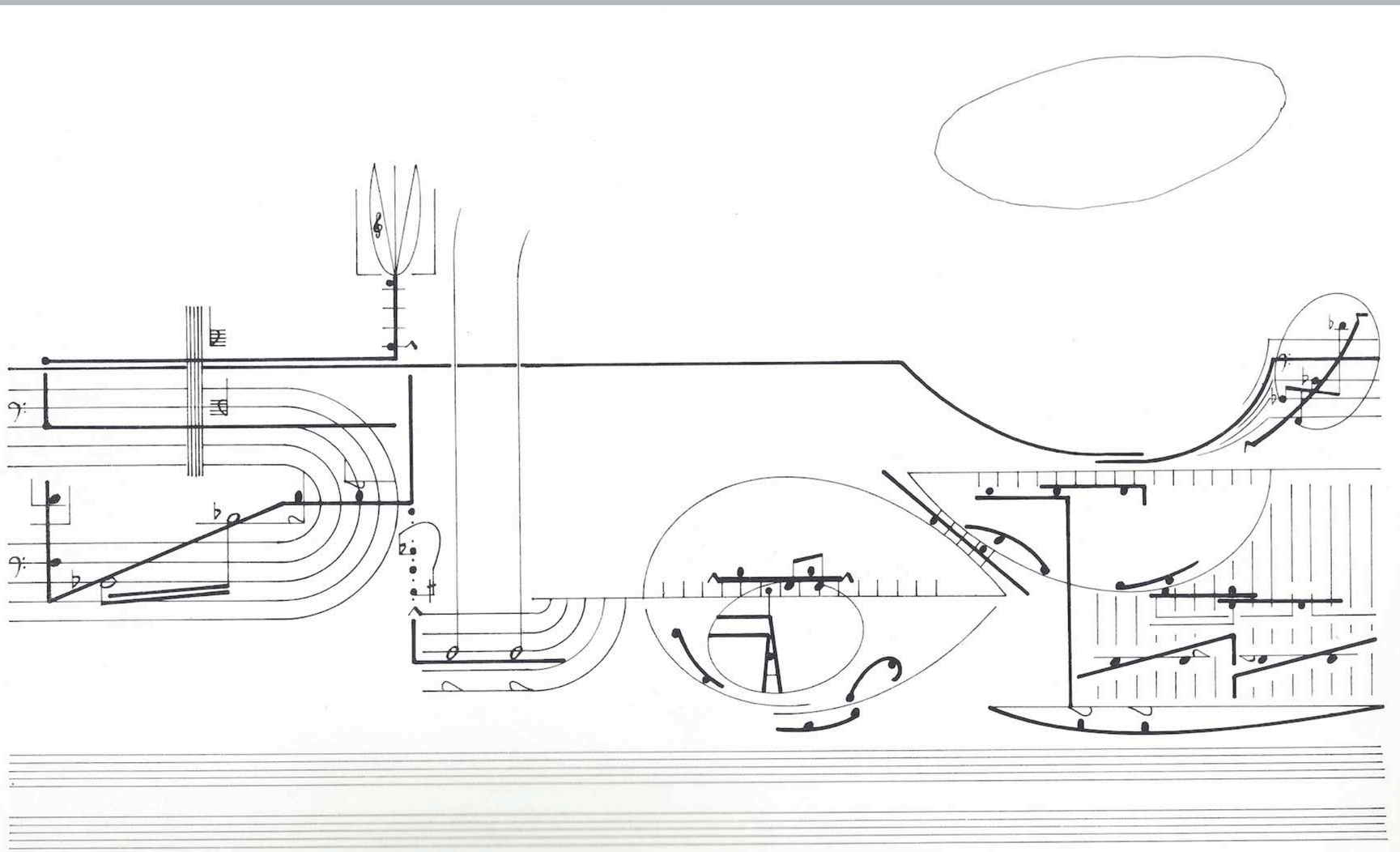
v0.01

# 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



# Three research streams

1. algorithms (patterning)
2. physical computing
3. notation/representation

...linked by cross-domain expression and interpretation

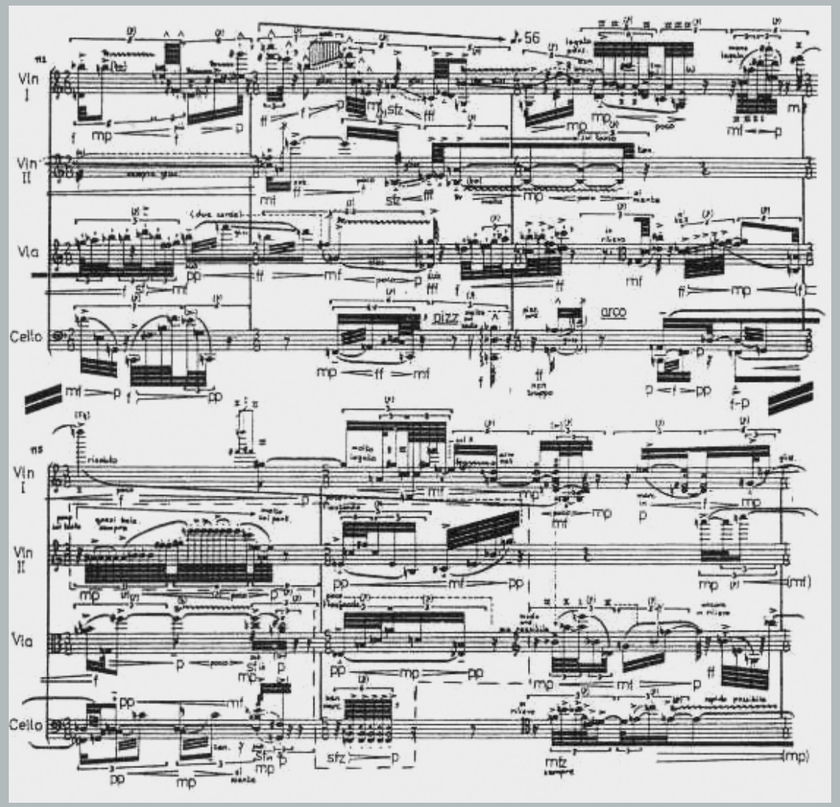
# Cross-domain expression?

- Music is already cross-domain (as are all arts)
- It is formed of physical action to create patterns
- I'm not worried about what happens when those patterns are created today. As a composer, I suppose I rely on my judgement to help me decide whether I *like* a pattern or not.

# Notation/representation

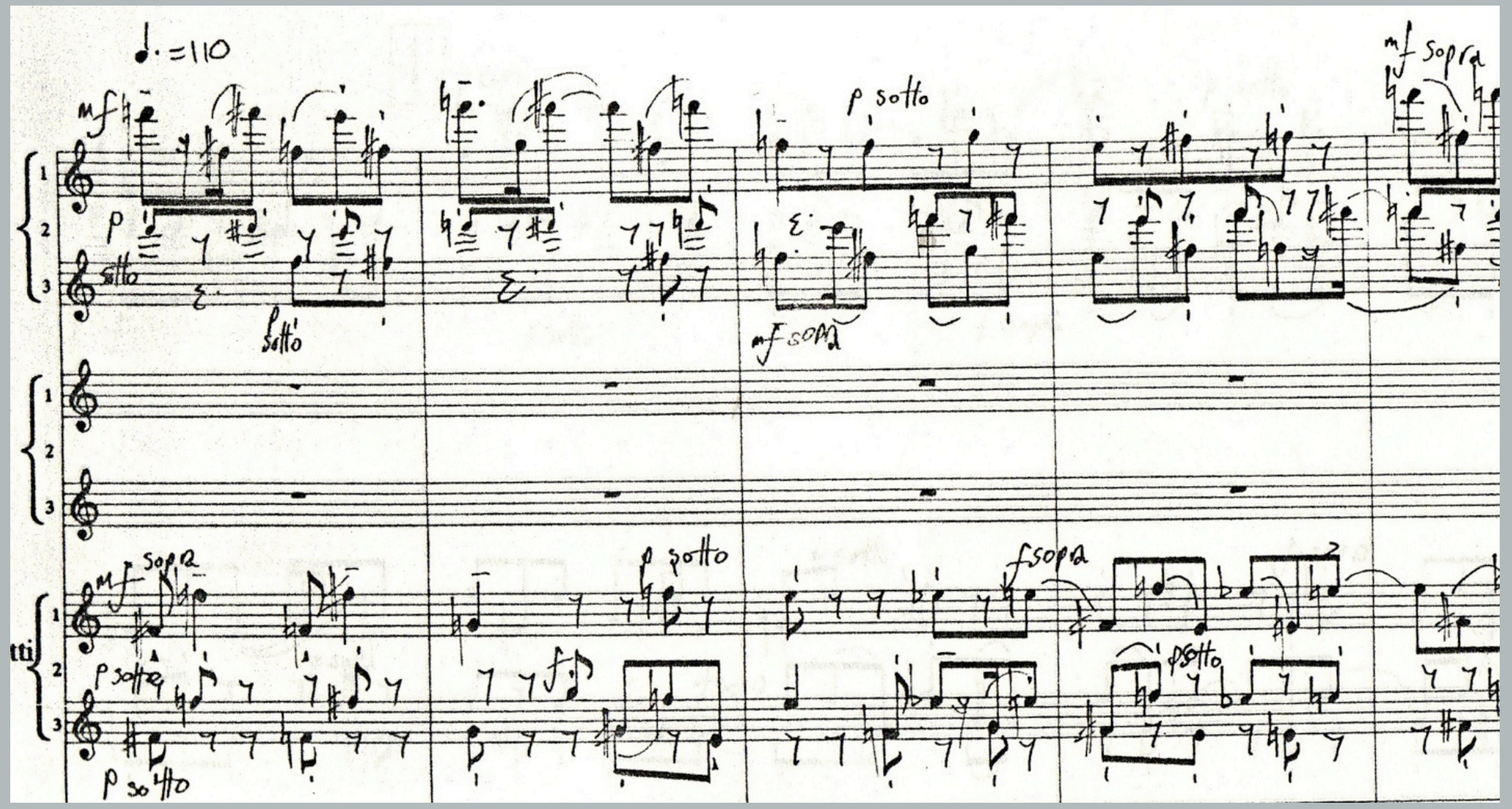
- is a complex semantic and graphic form of 'language'
- is not really suited to non-specialised environments
- presents many challenges concerning electronic implementation and display

# Notation: complexity



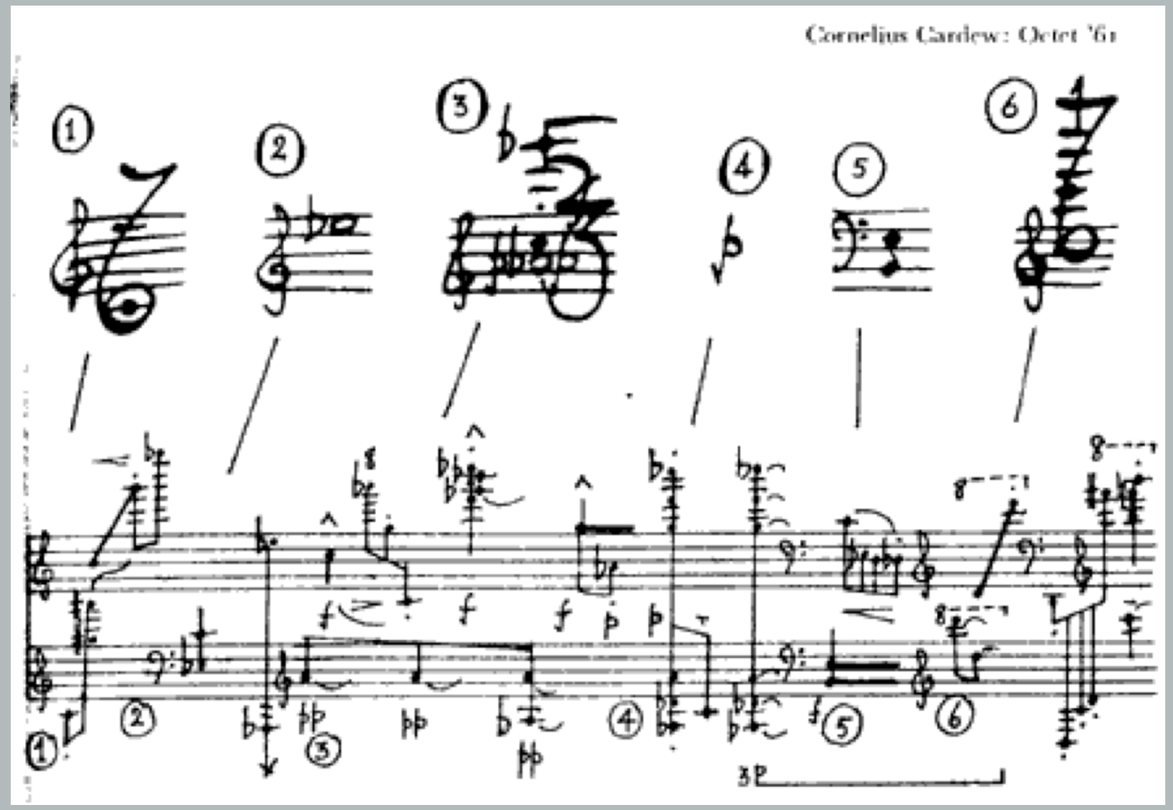

Ferneyhough **Second String Quartet** (1980)

# Notation: Mea culpa



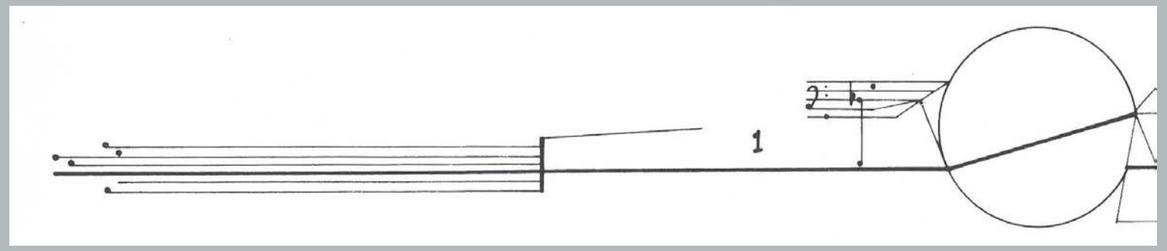

Richard Hoadley **Four Archetypes** (1995)

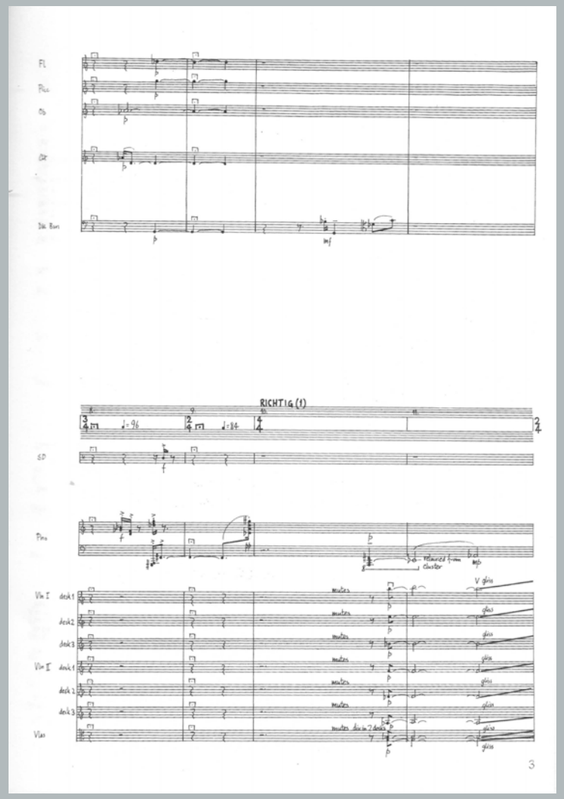
# Graphic notations: Cardew



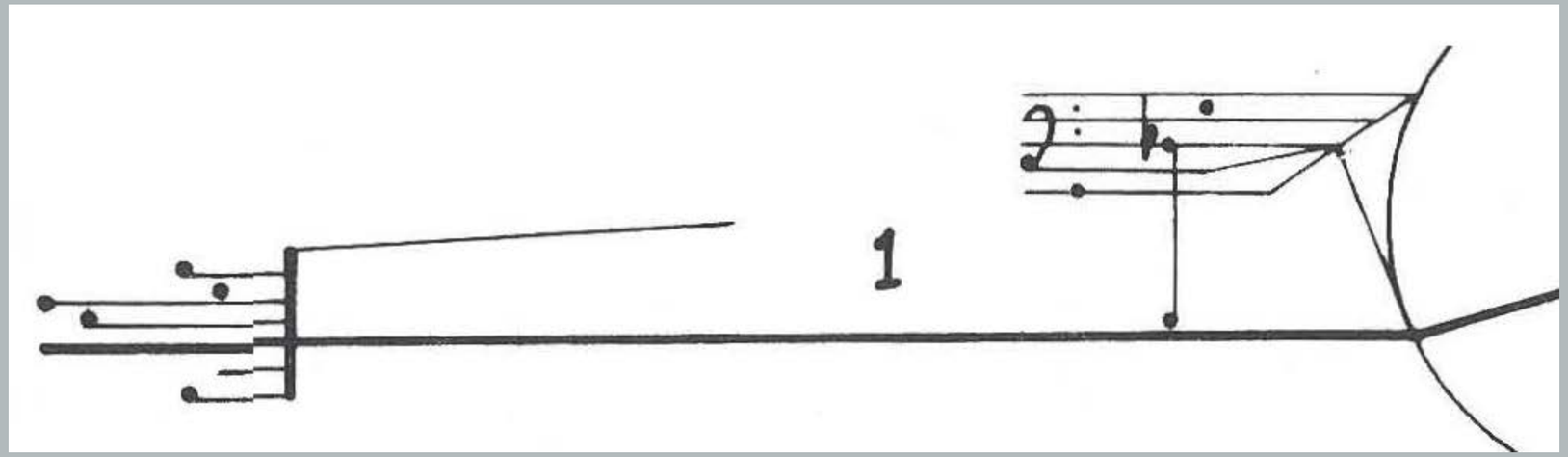

From Cardew **Octet 61** (1961)

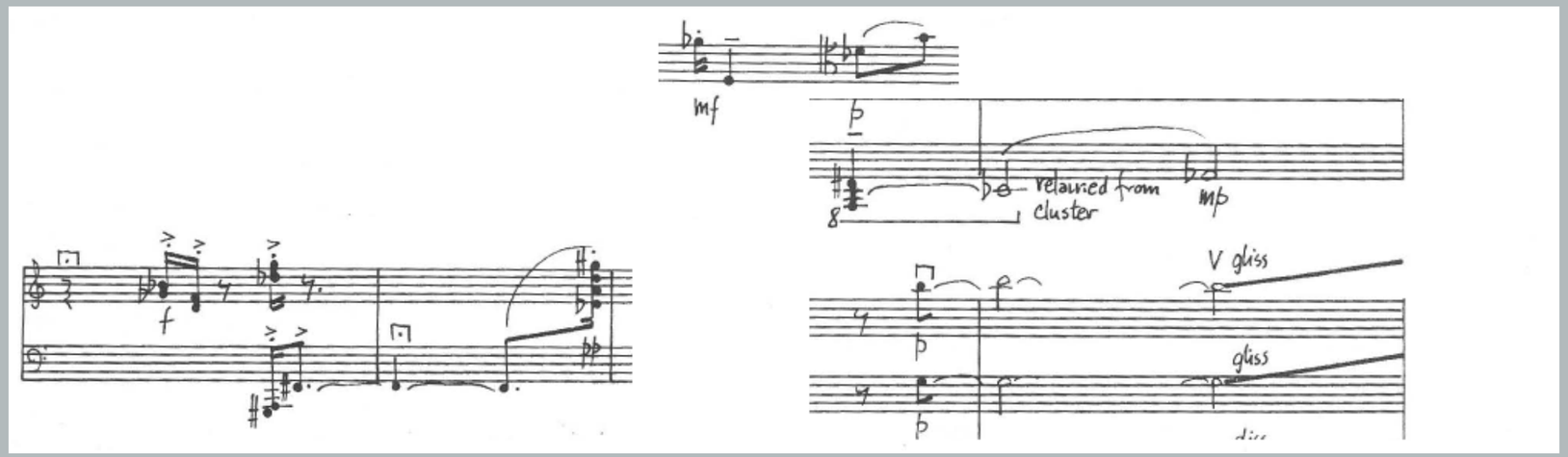
# **Graphic notations: Cardew** Treatise **(1963) and** Bun No. 2 **(1964)**



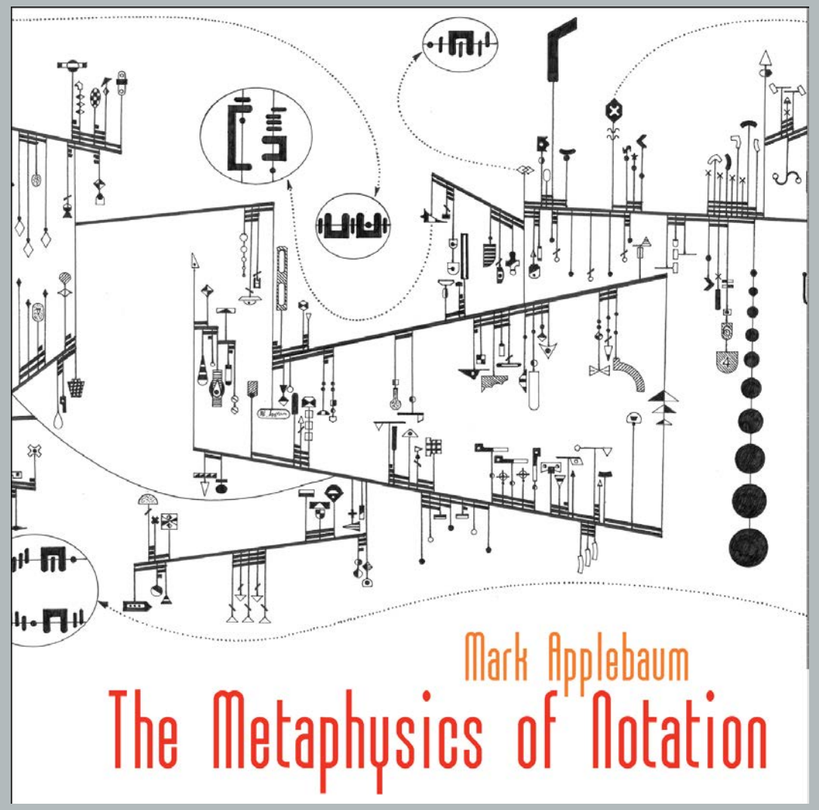



# Detail from Treatise and Bun 2...



# Graphic notations



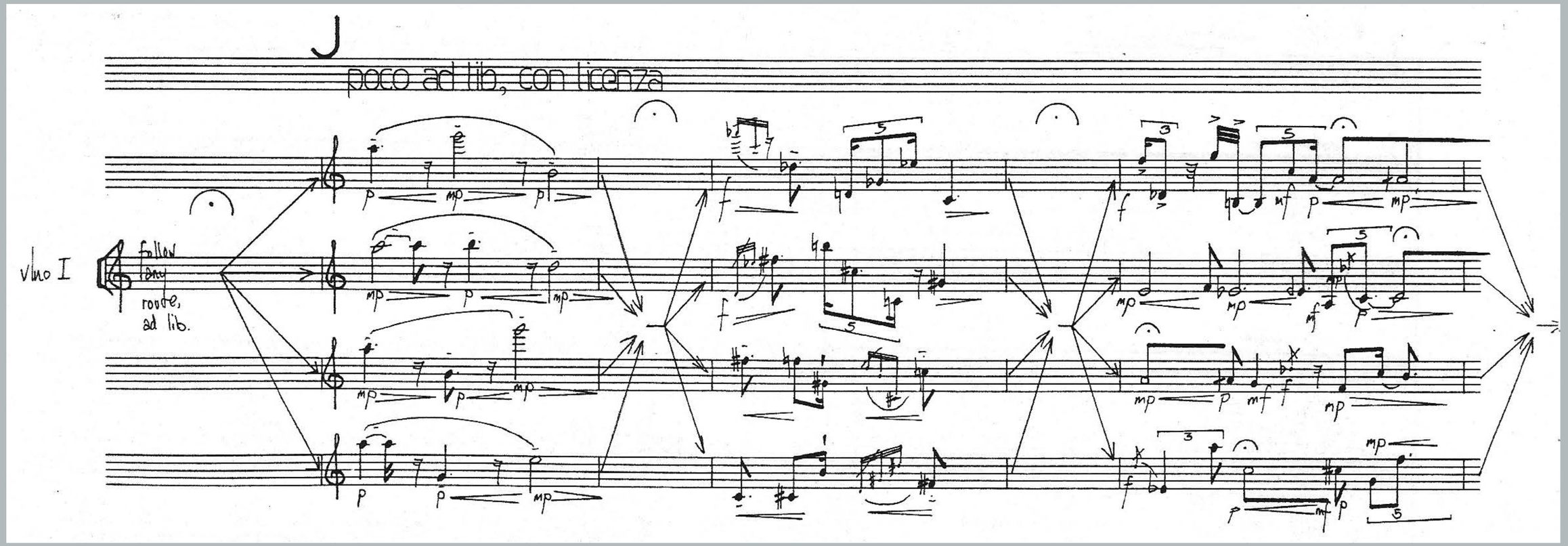

From Appelbaum, **The Metaphysics of Notation** (2010)

# Why pursue these lines of research?

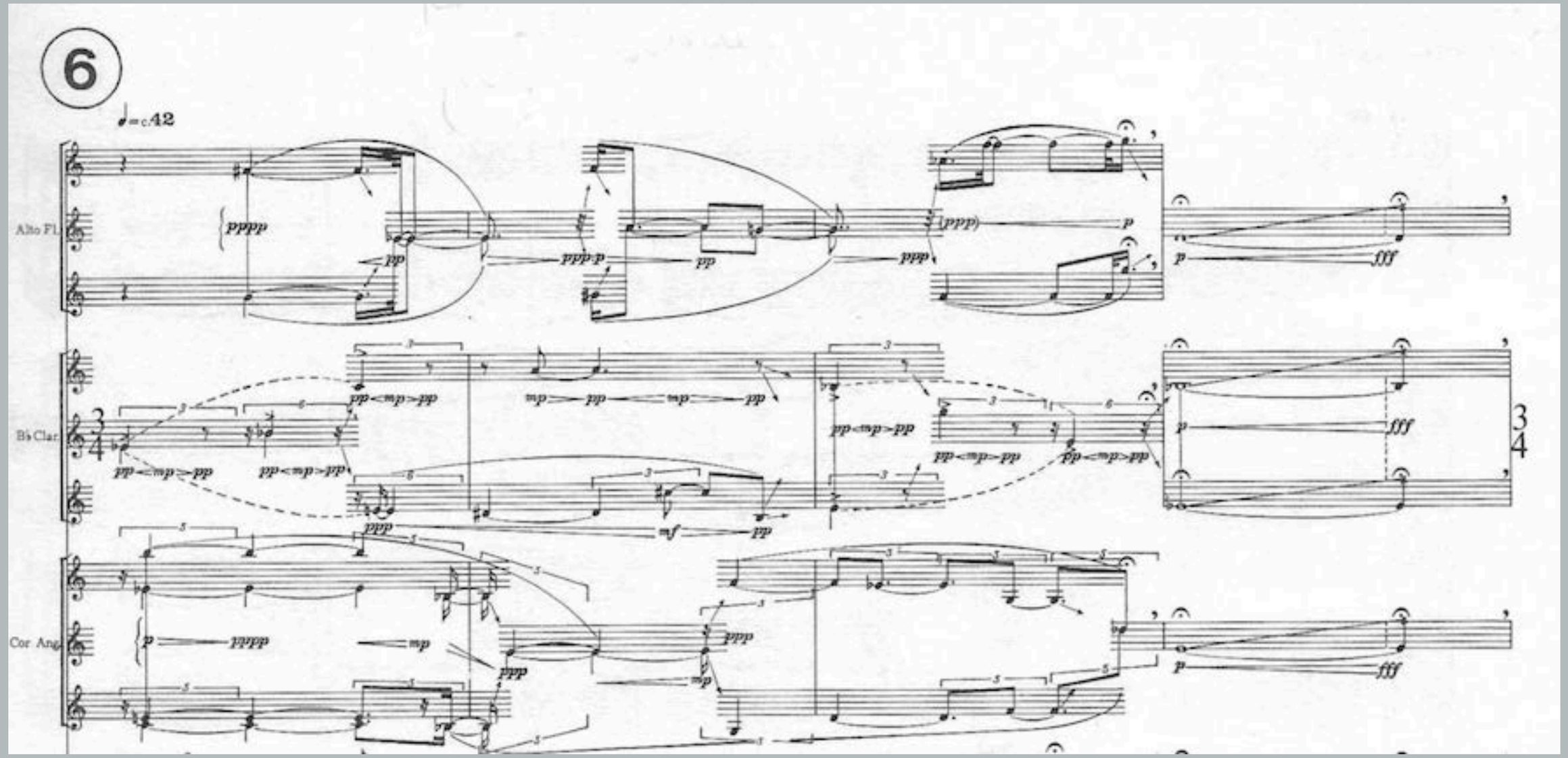
- for me it offers the greatest chance of understanding the act of composition
- it unifies dots and signals: enriching electronic music with live performance and algorithmic patterning [ quote ]
- it enables the live synchronisation of algorithmic generation of both electronic and electroacoustic material and notation

- it allows the study of links between expressive domains: algorithm and physical gesture into live notation: which gestures have ‘meaning’ and which don’t
- 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 pieces and experiments

# and... String Sextet alternatives...



# from... Birtwistle Verses for Ensembles (1968-69)



# 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...

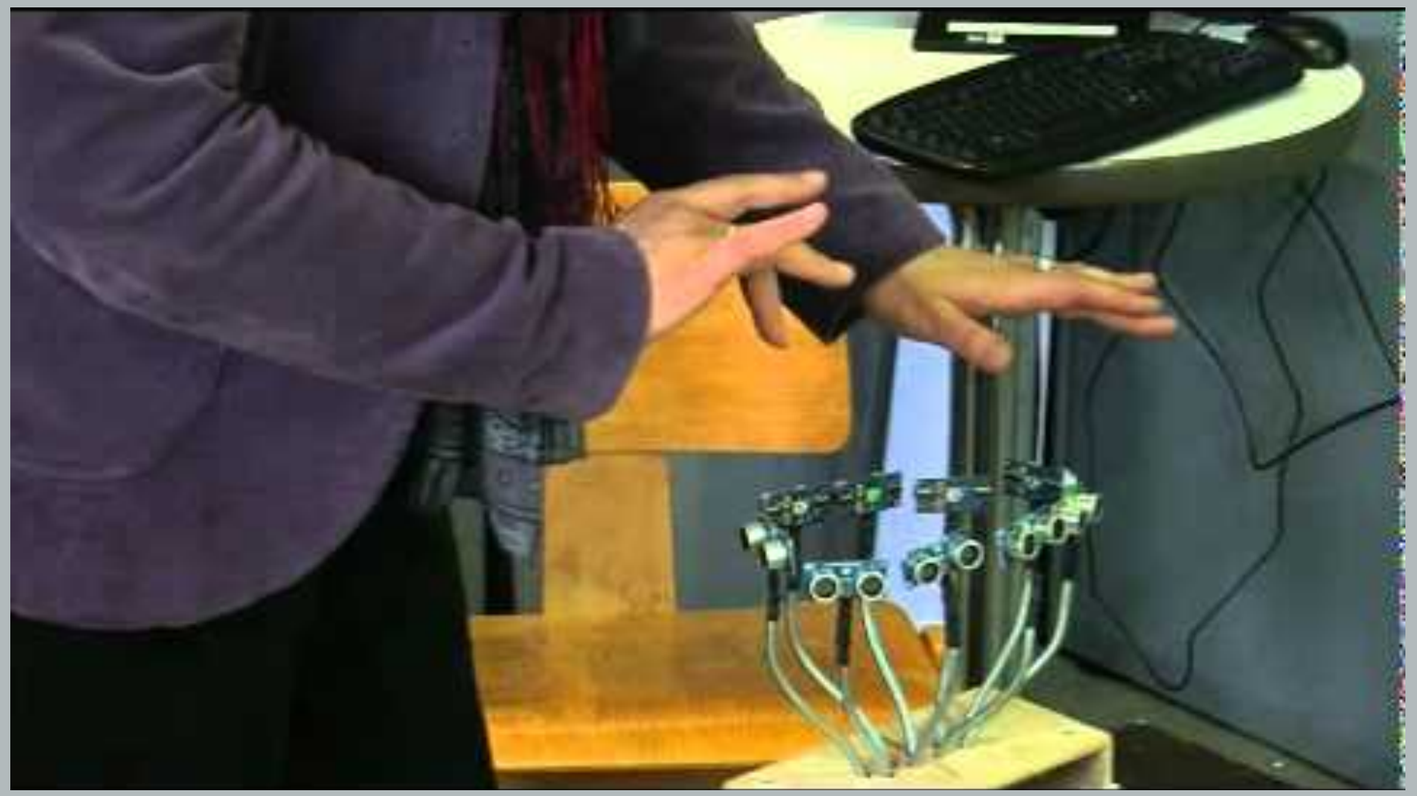
- https://github.com/supercollider/supercollider
- http://inscore.sourceforge.net/
- http://rhoadley.net/inscore (from winter 2014)

# Performances

**Gaggle**, HCI conference, Cambridge, UK, 2009

# Performances

**Gaggle**, Museums, interfaces, spaces, technologies, 2010



# Performances

**Calder's Violin**, SuperCollider Symposium, London 2012

# Performances

**The Fluxus Tree**, LIPAM, Leeds UK, September 2012

# Performances

**Quantum²**, Sensations Festival, Empty Shop, Meadows Shopping Centre, Chelmsford, Semptember 2013

# Performances

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

To display, or not to display, the notation?

# Performances

**Quantum Canticorum Demonstration**, Natural History Museum, London, June 2014

# Peer comment and criticism

1. many comments asking about the possibilities of machine musicianship as a compelling reason for using real-time notation (imagination over reality)
2. possible difficulties in keeping track of one's place in the score
3. the feasibility of obtaining an 'accurate' and structured rendition due to lack of rehearsal

1. the 'fetishisation' of the notation (when displayed)
2. the dancer being 'caged' by the 'cone of the Kinect' (MSphobia?)
3. 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)

# Forthcoming performances

**Semaphore** (Sunday 26th October, Cambridge UK Festival of Ideas))

**Player Piano** with Philip Mead, February 2015, London International Piano Symposium

**Drawing Towards Sound** with David Ryan, Guildhall/Trinity Laban, February 2015

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

# Demonstration

Just in case:

# Thank you

any questions?

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this presentation is available at
**http://rhoadley.net/presentations**
as **ways_icmc.pdf**