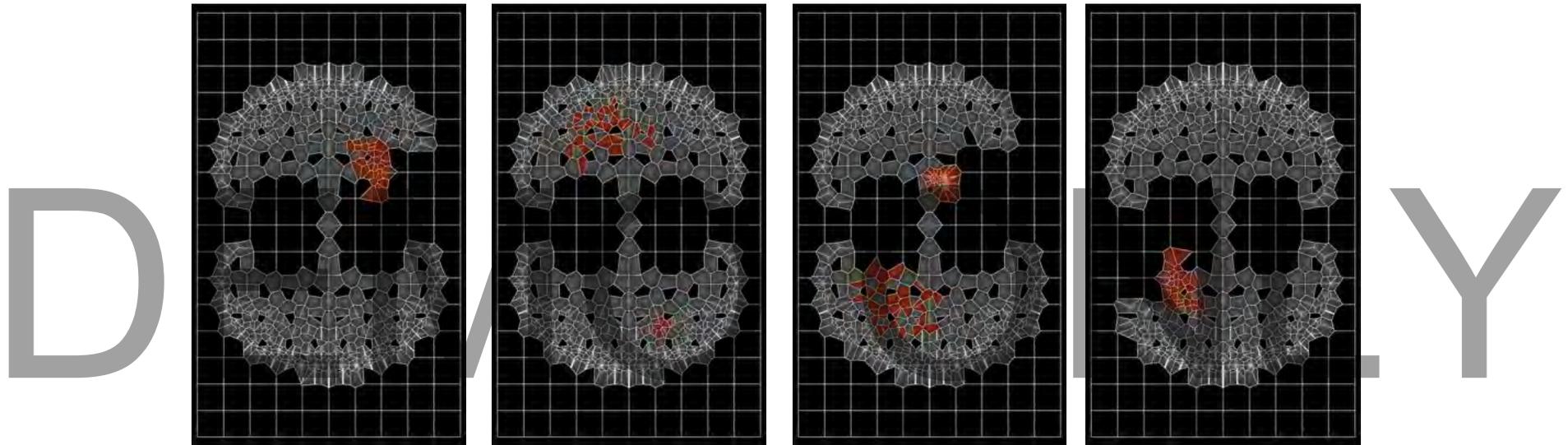


Anarchy in the Organism – live version

for Eb Clarinet, Live & Algorithmic Sound Projection and Responsive Video



Simeon Nelson – Lead Artist
Nick Rothwell – Video Coding
Rob Godman – Music

For my Dad, who, towards the end of his life, claimed to understand what this was about...

Programme Note:

Iteration One – Precursor	- 4'36"
Iteration Two – Fragile	- 2'05"
Iteration Three – Still	- 5'25"
Iteration Four – Redemption	- 2'55"

Approximate performance duration - 15'30"

Anarchy in the Organism is part of a Wellcome Trust Artist Residency awarded to Simeon Nelson. The public art version is installed at the University College Hospital Macmillan Cancer Centre, London (April 2012). The work features four simultaneous algorithmic video projections and octophonic 'whispering windows' audio diffusion. Nick Rothwell has created a series of animated Voronoi cell systems with tumours growing amidst the organisms causing systemic collapse. These algorithms are based on venous network geometries supplied by Simon Walker-Samuel, senior research associate at the Centre for Advanced Biomedical Imaging at UCH.

University College Hospital Macmillan Cancer Centre, Capper St, London, WC1E 6AG

<http://www.uclh.org/OurServices/OurHospitals/CC/Pages/Home.aspx>

<http://anarchyintheorganism.tumblr.com/>

http://www.robgodman.com/RobGodman/Simeon_Nelson_-_Anarchy_in_the_Organism.html

Simeon Nelson formulated the following research questions:

- Are there underlying patterns that can be discerned in the genesis, growth and metastasis of cancer?
- How does cancer interact with the human organism?
- What properties of growth and development does cancer share with social, cultural and natural properties of growth and development?
- How can these properties patterns be made into comprehensible visual imagery?

The key objectives were:

- Engaging patients, visitors, staff and the general public with the science of cancer and its social, cultural and ethical impact
- producing an art work based on current research into cancer as a complex system
- Contributing to the public understanding of cancer through the art work, public fora, and a publication discussing cancer in a social and cultural context
- Stimulating discussion of cancer as a philosophical, sociological and scientific issue

Central to the concept, is the idea of interruption, interference and disturbance. The music uses a rhythmic technique the composer is naming (somewhat erroneously...) Pulse Time Modulation (PTM) - the idea being that a repeating sound (a pulse) is subject to a constantly changing tempo creating a shifting accelerando/rallentando effect. Where simultaneous multiple PTM's take place, any definitive pulse quickly becomes perceptually complex and/or chaotic.

PTM attempts to mimic the cycles of life - functioning on the macro and microstructure of the work (in a pseudo-fractal fashion). Breathing, tension and relaxation, physical and psychological time all come under the auspices of the technique.

The live version of *Anarchy in the Organism* includes a live clarinettist whose sound is processed and diffused using rhythmic techniques detailed above. The performer provides an additional function of interrupter, interferer and disturber. The audio-feed from the clarinet additionally provides an interaction with the algorithmic video.

Anarchy in the Organism - for Eb Clarinet, Live & Algorithmic Sound Projection and Responsive Video

Technical:

This live version of *Anarchy in the Organism* requires the following equipment:

Audio

- 8.1 diffusion system (shoebbox formation)
- 8 Channel soundcard with all signals summed to the subwoofer
- Condenser Microphone*
- Apple Mac Computer running Max5/6 or later with Altiverb convolution reverb (sound projection)* - Control
- Apple Mac Computer running Max5/6 (clock for the clarinet)** - Slave
- AKAI LPD8 MIDI Controller (other controllers could replace this device if required)

Video

- Apple Mac Computer with two fast video cards running Field* - Slave

* if the clarinetist is animated with regards their movement during performance, it is recommended that two microphones are used (to the right and left side of the player) with the signals summed to a single channel.

** the three computers are networked together over a LAN, with the audio Mac sending control data to the video and clock.

The microphone is used as a means of capturing sound for live electronics (delays and reverb, including PTM reverb, pitch-changing etc.). It is recommended that a small amount of amplification and room reverberation be used throughout the work in addition to the live treatment (first performance – Altiverb, Gol Stave Wood Chapel, stereo to stereo @ 2m, RT60 1.89"). The will bring the sound of the clarinet into the same space as the other EA material. The nature and amount of amplification and reverberation will vary depending on room and venue.

Reverberation for Iteration 3 – 'Still' is Altiverb, Chartres Notre Dame, stereo omnis @ 19m, RT6012.93"

In addition to the live electronics, some pre-rendered and other (non-live) processed sounds are triggered by the Sound Projectionist (controlled by the AKAI LPD8 and indicated as P1, P2, P3 etc.).

Anarchy in the Organism – Max Patches



Notes on Performance

The clarinet part is transposed (i.e. a written C in the clarinet part will sound an Eb)

Timing:

Timings are provided in seconds above the clarinet part. The clock provided for the clarinettist counts the number of seconds only (not minutes/seconds), hence the notation in seconds in the score. The clock will provide a countdown before each Iteration (-4, -3, -2, -1, 0... - with 0 being the start of the Iteration). The Sound Projectionist controls the clock. Pressing the Mac Space Bar starts the Iteration by providing the countdown (-4, -3, -2, -1, 0... - with 0 being the start of the Iteration – this means a 4" delay will be experienced before any audio is heard). Synchronisation points or significant structural moments are shown as dotted bar lines or double bar lines. The Sound Projectionist will follow the Clarinettist, triggering events when required. This means exact synchronisation with the clock is not required by the clarinettist and is provided as a guide. In addition, the Sound Projectionist may change the speed of the clock if required (i.e – pausing the clock or even changing the length of a second...).

Notation:

♭ - 1/4 tone flat; ♯ - 1/4 tone sharp; 𝄋 - 3/4 tone sharp

Repeated rhythmic cells in Iteration 2 'Fragile' are to be played as fast as possible, without flutter or double/triple tonguing and as quiet as possible whilst maintaining a focused pitch. Each cell (preceded by a comma [,]) is approximately crotchet = 60. Cells notated as smaller notes in Iteration 4 'Redemption' are to be played freely at a tempo 'disturbing' the crotchet = 120 pulse whilst maintaining the approximate note duration.

PTM - *Anarchy in the Organism* uses a rhythmic technique the composer is naming (somewhat erroneously...) Pulse Time Modulation (PTM) - the idea being that a repeating sound (a pulse) is subject to a constantly changing tempo creating a shifting accelerando/rallentando effect. It is most commonly used over a fixed pulse where the slow phased pulsing effects are most clearly heard. The performers should be aware that where PTM is marked in the score, a pulse with changing tempi would occur. Where simultaneous multiple PTM's take place, any definitive pulse will be difficult to ascertain and quickly become perceptually complex and/or chaotic.

'Spastic' – this terminology is taken from Conlon Nancarrow's politically incorrect and rather offensive usage (even at the time Nancarrow adopted it...) in his Player Piano pieces. In simple terms it implies a rhythmic inaccuracy, or to be more pertinent - a rhythmic pattern that disturbs a regular consonant rhythm (a 'limping' rhythm...). In *Anarchy in the Organism* the technique is used regularly and is implied in the clarinet notation where a comma (,) is notated. Spastic rhythms are used extensively in the Sound Projection.

Notation and control of EA:

The live electronics are notated on the top of the staff with the algorithmic and pre-rendered on the bottom. Changes of patch settings are created with pad presses on the AKAI LPD8 (P4 indicating a single press of Pad 4 etc.). As well as triggering events, audio mixing can also be achieved via the dials of the AKAI LPD8. Dial K1 of the AKAI LPD8 is used to turn the microphone amplification on/off (for live electronics processing). The Return Key of the audio Mac is used to toggle through the different Iteration settings (movements) initialising a restart for each Iteration.

Video:

The video animation will start automatically from a black screen at the start of each Iteration (the clock providing -4, -3, -2, -1, 0... - with 0 being the start of the Iteration). The conclusion of each Iteration (and corresponding end of video sequence) will result in a black screen. Exact timings are synchronised via the audio laptop (control).

This live version of Anarchy in the Organism was first performed by Kate Romano, Nick Rothwell and Rob Godman at the John Lill Music Centre, University of Hertfordshire on 15th May 2012.

ANARCHY IN THE ORGANISM - LIVE VERSION

SIMEON NELSON: NICK ROTHWELL: ROB GODMAN

FOR Eb CLARINET, LIVE & ALGORITHMIC SOUND PROJECTION AND RESPONSIVE VIDEO

ITERATION ONE
'PRECURSOR' $\bullet = 42$ ($\bullet = 1.4286''$) 23''

Eb CLARINET

[SPACE BAR]

LIVE ELECTRONICS
EA ALGORITHMIC MATERIALS

MONO DELAY (714ms) - POINT SOURCE (8 SPEAKERS) →

VOCAL PULSE (V) (4286ms) →

VOCAL PULSE (D) (PTM) →

46'' 69''

(69'')

92''

DELAY SPEEDS UP (476ms OVER 10'')

CLARINET RANDOM

123'' 138'' 170'' 184'' 215''

DELAY OFF [P3] PPP DELAY ON [P4] DELAY OFF

CLARINET RANDOM 2 CT 15 (HARMONIC DRONE ON A)

215'' $\bullet = 34$

PPP DELAY ON (714ms)

245'' 26''

DELAY OFF [P7]

(VIDEO TO BLACK)

ITERATION 1 = 4mins 36''

* SPACE BAR provides a 4'' countdown before the audio starts. This is shown on the clock as [-4, -3, -2, -1, 0...] with 0 starting the iteration.

21=4-12 GULDEN MORDEN

ITERATION TWO
'FRAGILE'

$\bullet = 60$

PP

EFFECT OFF
[SPACE BAR]

CLARINET PULSE(D) (190ms & 180ms)
CLARINET RANDOM 3

[P2] PULSE GLISSANDI UP

Detailed description: This system contains the first staff of music for 'Iteration Two'. It starts with a tempo marking of quarter note = 60. The music consists of a series of rapid, rhythmic pulses. A dynamic marking of 'pp' is present. Below the staff, there are control parameters: 'EFFECT OFF' and '[SPACE BAR]' are indicated with vertical lines. 'CLARINET PULSE(D) (190ms & 180ms)' and 'CLARINET RANDOM 3' are shown with horizontal arrows. A vertical dashed line marks a point in time, with '[P2] PULSE GLISSANDI UP' indicated below it.

21" ($\bullet = 60$)

mf Sim.

31" PTM

[P3] PULSES UNISON
STOCHASTIC CRACKLE

42" ($\bullet = 90$) legato P

[P4] RISSET UP

PULSES OFF
OFF

Detailed description: This system continues the musical score. It features a large 'DEMO ONLY' watermark across the center. The first part of the system is marked '21" ($\bullet = 60$)' and includes dynamics 'mf' and 'Sim.'. A vertical dashed line at 31" is labeled 'PTM' and '[P3] PULSES UNISON STOCHASTIC CRACKLE'. The second part of the system is marked '42" ($\bullet = 90$)' with 'legato' and 'P' dynamics. A vertical dashed line at the end is labeled '[P4] RISSET UP' and 'PULSES OFF OFF'. Arrows at the bottom indicate the duration of various effects.

63" ($\bullet = 79$) ($\bullet = 158$) legato Ppp

(7) (16)

(RISSET UP)

(RANDOM 3)

Detailed description: This system continues the musical score. It features a tempo change to '63" ($\bullet = 79$) ($\bullet = 158$)' with 'legato' and 'Ppp' dynamics. The music is divided into two sections: '(7)' and '(16)'. Below the staff, '(RISSET UP)' and '(RANDOM 3)' are indicated with arrows.

* As fast as possible, without flutter or double/triple tonguing. As quiet as possible, whilst maintaining a focused pitch. Each cell (preceded by a comma [*,]) is approximately $\bullet = 60$.

DEMO ONLY

ITERATION THREE
'STILL'

Handwritten musical score for 'Iteration Three - Still'. The score is written on a grand staff with a treble clef. It features several measures with notes and rests, accompanied by dynamic markings such as pp , mp , pp , p , pp , mf , mf , pp , mf , and mf . Above the staff, there are time markers: $\bullet = 60$, $\bullet = 25$, $72''$, $\bullet = 52$, $108''$, $\bullet = 30$, $163''$, and $(\bullet = 60)$ 217''. Below the staff, there are technical annotations: '* LONG REVERB WITH PTM 2 SPEAKER [SPACE BAR] VOCAL PULSE (W) PTM', '4 SPEAKER [P2]', 'VOCAL PULSE (D) PTM SPASTIC', '[P3]', 'Non-SPASTIC', and '(OFF)'. A large, semi-transparent watermark 'DEMO ONLY' is overlaid across the center of the page.

Handwritten musical score for 'Iteration Four'. It is written on a grand staff with a treble clef. The score includes notes and rests, with a dynamic marking '(no dim.)'. Above the staff, there are time markers: 217'', 271'', and 325''. Below the staff, there are technical annotations: 'LONG REVERB OFF', '[P4]', 'VOCAL PULSE OFF', '[P5]', '[P1]', 'CLARINET SAMPLE (KATE 10b)', 'VOCAL SAMPLE (PEROTIN 30)', and '(VIDEO TO BLACK)'. A large, semi-transparent watermark 'DEMO ONLY' is overlaid across the center of the page.

ITERATION 3 = 5mins 25''

* This reverb is in addition to the amplification and reverb used throughout. See technical sheet.

BANGOR, N. WALES
22-4-12 GILDEN MORDEN

RG

FOUR

DEMO ONLY

146" $\bullet = 104$

[P7]
PULSED BASS CLAR. (SYNC TO $\bullet = 104$)

155"

[P8]
CRACKLE FADE TO NOTHING
ALL PULSES NON PTM

DEMO ONLY

175"

[P1]
ALL OFF
(VIDEO TO BLACK)

ITERATION 4 - 2mins 55"

30-4-12 GULDEN MORDEN RG