still life

string quartet + live electronics

nick fells
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**performance notes**

duration: ca 30-45 minutes

still life comprises 11 fragments for string quartet (A, AX, B, BX, C, CX, CXX, D, E, G, H) to be performed live, interspersed with electroacoustic interludes (F, for which there is no score), to be performed live by a laptop performer

the interludes are not pre-composed but should be improvised using live sampling of the performed quartet material with the pure data (PD)\* patch that accompanies the score (see laptop performer instructions below)

the quartet must be miked for the purposes of live sampling but should not be amplified

the sound output from the computer comprises 8 independent loudspeaker feeds, which must be projected onto a ring of 8 loudspeakers that encircle the listeners – the patch could be re-programmed for a different number of speakers in a similar configuration

the ‘circular’ arrangement of speakers is necessary since the computer output creates an ambisonic spatialisation which is highly sensitive to speaker placement in the performance space

this may limit the range of suitable performance spaces due to the need for width

the quartet is to be seated between the front-most pair of speakers, and the laptop performer in the centre of the ring of speakers along with the listeners, as in the following diagram:

![Diagram of speaker arrangement](image)

**quartet instructions**

the 11 fragments may be performed in any order and the order of performance should be established beforehand

all 11 fragments should be performed

adequate time must be allowed between fragments for the electroacoustic interludes

the electroacoustic interludes are improvised by the laptop performer, using materials sampled during the performance itself

these sampled materials may originate in fragments other than that just played or currently playing (i.e. the quartet may hear materials returning over the loudspeakers from earlier fragments)

the interludes may ‘cross-fade’ with live fragments, beginning while the quartet are still playing, and likewise the quartet may begin the next fragment while the laptop performer is playing

interludes and quartet fragments may entirely overlap

the ‘live electronics’ aspect has the potential to create ‘ghost quartet’ sonic images around the performance space, spatially displaced from the real quartet

generally the quartet should be aware of the activity of the laptop performer and of these ‘ghost images’

**laptop performer instructions: setup**

the live electronics aspect requires a computer and a multi-channel audio interface capable of feeding 8 independent speaker channels

each instrument should be miked separately and the 4 mic signals mixed to stereo for input to the computer and the PD patch

a MIDI control surface (such as a Peavey PC1600x) should be used to control the PD patch and this must supply:

- 16 independent faders, sending MIDI controller 7 data on channels 1-16
- 16 buttons or keys, sending note-on messages on MIDI channel 1 in the note-number range 60-75

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*PureData is available at [http://crca.ucsd.edu/~msp/software.html](http://crca.ucsd.edu/~msp/software.html) and runs on Linux, Mac and Windows computers*
mics: each instrument should be miked separately (preferably with good quality mics designed for strings) and a mono mix of these is to be used as the input to the PD patch

speakers: once speakers are in position, they should be connected to the computer in the order shown, with numbers corresponding to the audio interface output channels

the angular displacement of each speaker, measured in degrees anti-clockwise from the centre-front axis (i.e. starting from the centre and working around to the left), needs to be hard-coded into the patch

to hard-code the speaker locations into the patch, navigate from the main patch window as follows: click on ‘mixer’, click on ‘ambi’, and enter angles in degrees in the message box to the right of ‘angular location of each speaker’ then save the patch

laptop performer instructions: performing

the quartet generates material for the laptop performer to capture

material may be captured at the performer’s discretion, using the spacebar or buttons in the main patch window

the patch will sample up to 60 seconds of mono sound at a time from the mic mix

this 60 second buffer of sound is then available for processing using two banks of processors, called ‘avatars’

to view the avatar controls, click on the ‘avatar’ objects in the main patch window

the processors and controls available are:

looper: looping playback of sound from the buffer, with loop start and end controls variable using the mouse (loop ‘on’ and random ‘jitter’ switches are also provided)

comb filter: fed by the looper output, with ‘pitch’ and ‘feedback’ controls (faders 3 & 4), and a randomly-shifting band-pass filter applied post-comb with Q, ‘pitch’-range, and ‘pitch’-variation speed controls (faders 5, 6 & 7)

pan: an ambisonic 360 degree pan fader, controlling playback position

granulation: with controls for grain duration, number of streams, and trigger level (i.e. density) (faders 9, 10, 11); there is also a ‘strategy’ button, which enables a rhythmic ‘clustering’ of grains based on markov chains

filters: a 5-band resonant filter bank, with filter ‘pitches’ switchable using buttons 9-16, and with Q and sweep-time controls (faders 1 & 2)

plus volume levels for the comb filter, grains, filters, loop, and master volume (faders 12-16)

in performance, the electroacoustic interludes should be sensitively dovetailed with the live quartet fragments – see also quartet instructions above

during the electroacoustic interludes, the laptop performer should aim to set up spatial and textural oppositions between the live quartet and the two ‘avatar’ quartet images through selection of loop material and use of the ambisonic pan control

images may ‘collide’ or merge, spatially and texturally, or diverge – material should ‘echo’ across the space, possibly with a long time-lag

programme note

Still –

of the air, weather: free from commotion, quiet
of rain: unattended by wind, gentle
abstaining from action
remaining in the same position or attitude, quiescent

Life –
energy in action, thought, or expression; liveliness in feeling, manner, or aspect; animation, vivacity, spirit.

with life-like presentation of or resemblance to the original (said of a drawing or painting)
applied to the average duration of existence of the members of a population of identical particles or states

11 fragments played live by the ensemble become transformed, and are replayed to form intervening electroacoustic interludes

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\( q = 46 \)
In mobiles, play pitches in the sequence written but with an irregular rhythm ad lib. Mobiles are to be repeated as many times as desired to create an ensemble 'texture' of a particular duration. This duration is up to the ensemble. This should be done four times, with each 'texture' using the same pitches but played as follows:

1. Freely alternating fortissimo arco normale, forte pizz., col legno battuto and Bartók pizz. ad lib.

2. All notes played piano and with light pizzicato.

3. As in 1., but gradually increase proportion of col legno, until all notes are played col legno.

4. With mutes, all notes pianissimo arco normale, senza vibrato and slightly detached.

The chords on the second system are to be played as a coda.
begin by playing 'mobile' material in first system; at some point, on cue of first violin, play chord 1; pause briefly; return to mobile material; play chord 2; and so on, ending with chord 10 gradual transformation of mobile material as outlined in first system should occur over the duration of the entire fragment (i.e. not with each occurrence of mobile material)
create tiny tapping/scraping sounds with fingers on instrument, combine with col legno battuto on any pitch

begin to synchronise loosely the density of activity between each other

begin with mobile material in first system; at any point, jump to chord 1, entering in sequence as indicated by position of notes in the measure; return to mobile material; jump to chord 2 and so on