

CHRISTOPHER FOX

The Grain of Abstraction

for live electric guitar and pre-recorded sounds

Preview File Only

Instrumentation

Electric guitar

Foot-operated volume pedal

DAT or CD playback

Stopwatch

Tuning

The guitar is tuned to the pitches shown at the head of the score.

Absolute frequency values (to three decimal places) are:

I	330 Hz
II	252.353 Hz
III	213.529 Hz
IV	174.706 Hz
V	135.882 Hz
VI	97.059 Hz

To reduce the risk of string damage the strings can alternatively be tuned a minor third lower, with a capo fastened at the third fret; the tablature XII then becomes XV.

Absolute frequencies of the open strings in this tuning are:

I	280.5 Hz
II	214.5 Hz
III	181.5 Hz
IV	148.5 Hz
V	115.5 Hz
VI	82.5 Hz

Sound

The strings are plucked with the fingertips, *not* a plectrum.

The playback of the pre-recorded sounds should be quiet relative to the live guitar. The four layers of sound are panned wide-left, mid-left, mid-right and wide-right, whereas the live guitar sound should occupy this entire acoustic space. The guitar sound should be as 'straight' as possible, unadulterated by differential pick-up and pre-amp settings on the guitar itself or in its amplification.

Notation

Each event in the live guitar part includes a *time point*, *tablature* and *pitch* notations, a *dynamic* marking and a *foot pedal* indication.

Time points represent precise points of coordination with the tape part, but need only be observed exactly in recording. In live performance the guitarist should co-ordinate with the tape part by starting a stop-watch as the first tape sound is heard. Subsequent coordination is free within a margin of ± 2 seconds.

Tablature notations should be observed scrupulously - there are no substitute fingerings which will produce the notated pitches.

Pitch notation uses a mixture of $\frac{1}{4}$ and $\frac{1}{6}$ tone accidentals and is as accurate as this hybrid notation will allow. Open note-heads indicate that the strings are plucked *before* the foot pedal is opened; black note-heads that they are sounded as soon as the pedal is fully open.

Dynamic markings refer to the relative force with which the strings are plucked, *not* to the resultant amplified sound.

Foot pedal indications show three different speeds of opening the pedal and three different speeds of closing it, except where the pedal is held open from one event to the next. At 0'34.08" it is expected that the strings sounded in the previous event will still be audible when the pedal is re-opened.

Programme text

The Grain of Abstraction inhabits a harmonic world based on Pythagorean interval ratios in which prime numbers predominate: the guitar strings are tuned to the 5th, 7th, 9th, 11th, 13th and 17th harmonics of an unheard fundamental. These same ratios govern both the tempi relationships between all the rhythmic phrases in the pre-recorded part, and the durational proportions of the work as a whole.

All the pre-recorded sounds were derived from the unsounded half of the guitar string used in one of the neighbouring live events, in other words the portion of the string between the left-hand fingers and the machine-heads. These secret sounds - a sort of private life of the guitar - were progressively filtered and cropped so that they became acoustically remote from the sound of the live guitar and then used to articulate rhythmic patterns interrelated by self-similarity. It is these various characteristics - a set of numerically simple relationships articulated in sound layers which are intimately interrelated but perceptually quite distinct - which led me to the title, *The Grain of Abstraction*.

The Grain of Abstraction last just over 13 minutes and is dedicated to Alan Thomas, who commissioned the work with funds from the Yorkshire Arts Board.

The Grain of Abstraction

Christopher Fox



0'05.28" 0'14.4" 0'28.8" 0'34.08" 0'44.64"

p *mp* *mp* *p* *pp*

0'55.68" 1'05.28" 1'11.52" 1'27.84" 1'33.12"

p *pp* *pp* *mp* *p*

1'38.88" 1'47.04" 1'55.2" 2'04.32" 2'10.56"

pp *p* *pp* *p* *mp*

2'15.84" 2'39.36" 2'45.6" 2'59.04" 3'05.28"

PP PP mp PP p

3'10.56" 3'18.72" 3'43.2" 4'20.16" 4'41.76"

mp PP p PP mp

4'52.32" 5'06.72" 5'34.08" 5'39.36" 5'45.6"

PP p p PP PP

5'50.88" 5'57.12" 6'06.24" 6'15.36" 6'21.6"

p PP mp PP PP

Preview File Only

6'32.16" 6'37.44" 6'50.88" 7'00" 7'16.32"

pp PP P mp P

7'30.72" 7'59.04" 8'04.34" 8'12.48" 8'17.76"

P PP PP P

8'29.28" 8'34.56" 8'40.8" 8'46.08" 8'55.2"

mp PP mp PP P

9'03.36" 9'20.64" 9'25.92" 9'37.44" 9'42.72"

mp P P P P