

ETHAN HILL

MOX

for justly tuned ensemble

moX /moks/, [mɔks] Latin

adverb

soon, afterwards

etymology:

Proto-Indo-European *mókʷs*

descendants:

Sanskrit *maṣṭu* “fast; early”

Avestan *mošu* “soon, quickly”

Old Irish *moch* “early”

for Emma Bulloch

bass flute

alto saxophone

bass clarinet

piano (12-ED2)

sine tones

harp (13-limit)

violin

viola

bass drum and gong

ABOUT

In the effort to make just intonation accessible to the listener as well as demonstrate the expressive qualities thereof, *MOX* gradually opens a multi-harmonic musical space. This work begins with an abstract (and perhaps all-encompassing) 1-limit space and ultimately integrates 13-limit (tridecimal) intervals.

NOTATION

Relationships between pitches are largely notated using Marc Sabat's and Wolfgang von Schweinitz's *Helmholtz-Ellis JI Pitch* Notation. To facilitate this notation, cent deviations are also given. With this system the player can become accustomed to the tuneable intervals these symbols represent. See page IV for more information about the *Extended Helmholtz-Ellis JI Pitch Notation*.

The violin mm. 2-53, alto saxophone mm. 94-120 and bass clarinet mm. 120-145 are notated using two deviations from the pitch class *A*, and arrows indicating the upper and lower deviations.

Ratios using a solidus (e.g. $2/3$) indicate harmonic intervals and those using a colon (e.g. 2:3) indicate melodic intervals. Each of these will be followed by their interval in cents.

Natural harmonics are notated with diamond noteheads at the harmonic touch-point with an indication of which string to play on and which harmonic should sound. (e.g. IV^3 indicates the third harmonic on string IV). Artificial harmonics are notated with normal noteheads indicating the stopped note and diamond noteheads indicating the touch-point.

Glissandi are notated as diagonal lines preceding the note they affect and should be executed smoothly and directly before the goal note (in the time of a grace note).

Notes and symbols in square brackets should only be realized in the last repeat of a section (e.g. $[\geq]$).

This score is notated at concert pitch for all instruments.

PERFORMANCE NOTES

strings

The strings of both the violin and viola are tuned traditionally in pure (Pythagorean) fifths from A 440 (E5 + 2 cents [660 Hz], D4 - 2 cents [293.34 Hz], G3 - 4 cents [195.56 Hz], and the viola's C3 - 6 cents [130.37 Hz]).

Unless otherwise indicated, bowing is free and smooth throughout. Changes may occur during long notes as well as between tied notes.

The piece must be played *senza vibrato*.

The sound that the indication *nasale, brillante* represents can be achieved with a quasi sul ponticello bow position but enough bow pressure to create a full tone.

bass clarinet

The note A1 in m187 can be played with a conical device inserted into the bell of the instrument at the appropriate length while playing the instrument's lowest C $\sharp$.

piano

The indication *deprimere silenziosamente* in m.51 requires that the key be depressed slowly enough that the damper is raised from the string without the hammer striking the string.

harp

This piece requires that the harp be tuned according to the following chart:

<i>standard tuning</i>		<i>new tuning</i>		
pitch class	12-ED2 frequency in herz	harmonic ratio	deviation from 12- ED2 in cents	new frequency in herz
A	220.00	1:1	0	220.00
B	246.942	9:8	+4	246.942
C#	277.183	5:4	-14	275.000
D	293.665	11:8	+51	302.500
E	329.628	3:2	+2	330.000
F#	369.994	13:4	-59	357.500
G	391.995	7:4	-31	385.000

Harmonics up to the fifth partial (two octaves plus a third) are used in this work. These notes are notated with a circle symbol above the note from which the harmonic is played, a plus (+) sign indicating an octave above the string and a number indicating an additional interval above the octave (e.g. 5th partial = ++3).

Pedal changes are notated below the lowest staff.

15

B. Fl.

ppp

pp

p sub.

p

A. Sax.

pp

p sub.

p

[second time only]

B. Cl.

± 0 *pp*

Pno

Kbd

Hp

Vln

Vla

pp

p sub.

p

B. Dr.

3

A. Sax.

Pno

Kbd

Hp

Vln

Vla

B. Dr.

[illegible]

42

B. Fl.

A. Sax.

B. Cl.

Pno

Kbd

Hp

Vln

Vla

B. Dr.

Andante

p *mf* *p* *mf* *p* *mf* *f* *pp* *p*

Sost.

deprimere silenziosamente

8ba

[gong]

54 **B** ♩ = 118 [3x]

B. Fl. *p* -2 -18 *p* -2 *p*

A. Sax. *with flute* *p* -18 *p* +4 *p* -18 *p*

B. Cl. *f* *pp* *f* *second time only*

Pno *f* *second time only* *Red.*

Kbd *f*

Hp *p.d.l.t.* *f*

Vln *nasale, brillante* II *f* -18 *[p]* *[s.p.]* *ord.* +4 -6 -18 *f*

Vla *nasale, brillante* II +2 *f* -2 -20 *p* *s.p.* +2 III +20 *ord.* -6 *f* +2 -20 *p*

B. Dr. *to bass drum* *f*

This musical score is for the piece "The Last Days of Pompeii" by John Adams. It is a woodwind quintet arrangement, featuring a flute, saxophone, clarinet, piano, keyboard, harp, violin, viola, and percussion. The score is written in 2/4 time and is marked with a tempo of 80 beats per minute. The key signature is C major, indicated by a "C" in a box at the top left. The score is divided into measures, with some measures containing performance instructions such as "pp" (pianissimo), "mf" (mezzo-forte), and "p" (piano). The score also includes a section marked "81 : 80 = -22 c", which likely refers to a specific tempo or performance instruction. The score is written for a woodwind quintet, piano, keyboard, harp, violin, viola, and percussion. The woodwind parts are for flute, saxophone, and clarinet. The piano part is for piano. The keyboard part is for keyboard. The harp part is for harp. The violin part is for violin. The viola part is for viola. The percussion part is for percussion. The score is written in 2/4 time and is marked with a tempo of 80 beats per minute. The key signature is C major, indicated by a "C" in a box at the top left. The score is divided into measures, with some measures containing performance instructions such as "pp" (pianissimo), "mf" (mezzo-forte), and "p" (piano). The score also includes a section marked "81 : 80 = -22 c", which likely refers to a specific tempo or performance instruction.

Vox Humana

MOX

69 **D** ♩ = 60

B. Fl.

A. Sax.

B. Cl.

Pno

Kbd

Hrp

Vln

Vla

B. Dr.

quasi s.t. IV

p < f p < f

-16 -31 +25

f

+16

-33

3

p

+12

-6

f

p

-31

p sotto voce

+2

3

+30

+12

+10

p

f

mf

mf

legato

gliss.

D# -49

p

III

+4

-4

-6

mf

p

mf

pp

gliss.

-16

p

f

p

< f

Cor de Nuit

E

120

75

B. Fl.

A. Sax.

B. Cl.

Pno

Kbd

Hp

Vln

Vla

B. Dr.

last time tacet

mf

p

pp

senza pedal

first time tacet

mf

p

p

82 **F** [3x] 1.2. 3. *Voix Céleste* ♩ = 45

B. Fl. *p*

A. Sax. [1st time tacet] *p* -14 C# -49 -27 C# -49 -14

B. Cl. [1st time tacet] *p* *mf*

Pno *p*

Kbd

Hp *p* *mf*

Vln [3rd time tacet] 22:21 -81c *mf* -14 C# -48 -27 *mf* *mf* *mf*

Vla 3°/II +4 3°/II 5°/II 2°/II +2 *p* *p* *p* *p* *p* *pp* *respiro* -31

B. Dr. [Bass drum] *ppp* *pp*

[3x]

perdendosi

Cor de Nuit

$\text{♩} = 120$

[7x]

- 1. $\text{♩} = 120$
- 2. 110
- 3. 100
- 4. 90
- 5. 80
- 6. 70
- 7. 60

MOX

G

Voix Céleste

second time only

B. Fl.

A. Sax.

B. Cl.

Pno

Kbd

Hp

Vln

Vla

B. Dr.

90

p *ma piena voce*

last time only

p

second time only

p

[take pitch from bass flute]

last time only

p.d.l.t.

p

respiro

pp

D#-48

+4

81:80

-22c

33:32

-53c

-14

-2

+4

-31

[bass drum]

p

to gong

MOX

100

B. Fl.

A. Sax.

B. Cl.

Pno

Kbd

Hp

Vln

Vla

B. Dr.

100

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[illegible]

[illegible]

MOX

130

I

B. Fl.

A. Sax.

B. Cl.

Pno

Kbd

Hp

Vln

Vla

B. Dr.

131

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MOX

15

140 growl - - - - - +flutter tongue - - - - - rit..... ♩ = 56

B. Fl. *ff*

A. Sax. *ff*

B. Cl. *ff*

Pno

Kbd *fff* piano u.c. *8ba* *fff*

Hp *ff* *pp* *8va* *gliss.* *1.v.*

Vln *ff* *8va* *ff* *10* *pp*

Vla *ff*

B. Dr. *ff* dampen immediately

154

B. Fl.

A. Sax.

B. Cl.

Pno

Kbd

Hp

Vln

Vla

B. Dr.

Cor de Nuit

pp *mf* *ff* *pp* *mp* *mf* *pp* *p* *mf* *f* *mf*

p.d.l.t. *norm.* *p.d.l.t.* *norm.* *until sound has dissipated...* *f*

++3 *+5* *++3* *+5* *++3* *+5* *++3* *+5* *++3* *+5* *++3*

5 *3* *5* *3* *5* *3* *5* *3* *5* *3* *5* *3*

Ch G# *Bb Fb* *Cb Fb D# G#* *F# Gb Bb A#* *Cb*

MOX

[illegible]

[illegible]

Voix Céleste

[illegible]

MOX

182 **L** 21

B. Fl. $\frac{3}{4}$ $\frac{4}{4}$ $\frac{3}{4}$

A. Sax. $\frac{3}{4}$ $\frac{4}{4}$ $\frac{3}{4}$

B. Cl. $\frac{3}{4}$ $\frac{4}{4}$ $\frac{3}{4}$

Pno $\frac{3}{4}$ $\frac{4}{4}$ $\frac{3}{4}$

Kbd $\frac{3}{4}$ $\frac{4}{4}$ $\frac{3}{4}$

Hp $\frac{3}{4}$ $\frac{4}{4}$ $\frac{3}{4}$

Vln $\frac{3}{4}$ $\frac{4}{4}$ $\frac{3}{4}$

Vla $\frac{3}{4}$ $\frac{4}{4}$ $\frac{3}{4}$

B. Dr. $\frac{3}{4}$ $\frac{4}{4}$ $\frac{3}{4}$

81:80 -22c

-59c

C: +27

-14

+60c

A#: -40

+++6

+++4

8ba_ _ _

8ba_ _

Sost. _ _ _ _

-24c

F#: +44

-31

242:243 +7c

D#: -49

D#: -42

F: +41

F: +41

Cor de Nuit
Voix Céleste
Plein Jeu
Hautbois
Contrabass
Sw. closed

189 $\text{♩} = 96$ **M** $\text{♩} = 45$ *Sw. closed*

B. Fl. *pp* *ppp* *nasale, brillante*

A. Sax. *p*

B. Cl. *p*

Pno *(Sost.)* *8ba* *p* *match gong* *8ba* *p* *Sost.*

Kbd

Hp *mf* *p*

Vln *pp* *ppp* *con sordino* *pp*

Vla *pp* *ppp* *con sordino* *pp*

B. Dr. *[gong]* *p*

MOX

[illegible]

[illegible]

[illegible]