

Two Fragments on Water and Light

For voice and invisible instruments

Thomas Royal

I. Levis Exsurgit Zephrus

II. Nubibus Atris

Note:

A performance of *Two Fragments on Water and Light* requires the use of additional custom technology in the form of hand-built controllers. Further, a performance of this piece requires the use of a Max/MSP patch. If you are interested in performing this piece, additional resources and information are required. Please contact the composer directly (troyal7563@aol.com or tmroyal@uncg.edu) in order to receive the Max/MSP patch and the instructions on building and connecting the controllers.

Levis Exsurgit Zephrus
for voice and invisible instruments

By Thomas Royal

Levis Exsurgit Zephrus

for voice and invisible instruments

Levis exsurgit zephrus Lightly rises the west wind
Et sol procedit tepidus, And the sun proceeds tepidly,
Iam terra sinus aperit, Now the earth bares its breast,
Dulcore suo diffluit. Sweet in its flowing apart.

From Cambridge Songs, No. 40
(Loose literal translation by the composer)

Levis Exsurgit Zephrus is a piece for solo voice and two performers using controllers built by the composer. One performer plays the Torion Plus and Bls., while the other plays the Lichtflöte and controllers the automated electronics using a foot pedal.

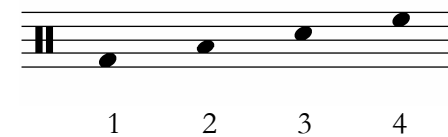
Toriton Plus:

This controller, designed by Sebastian Tomczak at the Electronic Music Unit, Elder Conservatorium of Music, University of Adelaide, consists of bowl or plate of water whose surface is disturbed to produce sound. This might be done by blowing or touching. Generally, this controller is used to control a physical model of wind chimes.¹ The controller might also be used to process other sounds, or to play back the voice in an altered way.

Bls.:

The Bls are made up of four wooden bowls with contact microphones attached to each of them. The sounds of the bowl being struck or scraped are picked up by contact microphones and fed into a banded waveguide model of a bell.² The tuning of the bell is determined in advance, though it changes throughout the piece.

The part is notated on a five line staff. Each of the spaces corresponds to one of the bowls. If bowls of different sizes are used, the largest should be number 1, and the smallest should be number 4. It is notated thus:



Note that this does not indicate what sounds are made, but what motions are used to create the sound.

Lichtflöte:

The Lichtflöte is a tube that lights up at one end. It also has three keys at the opposite end. A light source is placed at the other end of the tube. This instrument is used to control a physical model of a flute.³ The wider the mouth is opened, the louder or more intense the sound of the physical model. Pitch is controlled using the keys at the opposite end and the other hand, which covers up the other end of the tube. The choice of pitch is implemented like a brass instrument.

Electronics:

The performer who plays the Lichtflöte is also responsible for pressing the pedal at indicated points. The staff for the electronic part indicates the approximate tuning of the physical models, whether or not a sound is being sampled, various actions taken by the computer, and the routing of sounds into the delay line of various physical models.

¹ Cook, Perry. "Physically Informed Sonic Modeling (PhISM): Synthesis of Percussive Sounds." *Computer Music Journal* 21, no. 3 (Fall 1997): 38-49.

² Essl, Georg, Stephania Serafin, Perry R. Cook and Julius O. Smith III. "Theory of Banded Waveguides." *Computer Music Journal* 28, no. 1 (Spring 2004): 37-50.

³ Cook, Perry. "A Meta-Wind-Instrument Physical Model, and a Meta-Controller for Real Time Performance Control." *Proceedings of the ICMC* (1992.) Referenced by Hind, Nicky, "Physical Modelling Synthesis." <http://ccrma.stanford.edu/software/clm/compmus/clm-tutorials/pm.html> . (Accessed December 4, 2007)

Levis Exurgit Zephrus

for voice and invisible instruments

Unmeasured, but very slowly. Painfully soft

ppp as faintly as possible

Score for the first system, featuring Voice, Toriton Plus, Bls., Lichtflöte, and Electronics notes.

Voice: Treble clef. Lyrics: Le v v v vi (sss). Dynamics: *ppp*. Performance instruction: "as faintly as possible".

Toriton Plus: Percussion staff. Performance instruction: "chimes, blow on the surface of the water (crescendi indicate breath speed)".

Bls.: Percussion staff.

Lichtflöte: Treble clef. Performance instruction: "with expressive vibrato". Dynamics: *n*, *p*, *n*, *n*, *mp*, *n*. Includes "accelerating vibrato" marking.

Electronics notes: Bass clef. Performance instruction: "chime tuned to". Includes "voice fed into bell model tuned to", "record voice to buffer", and "voice and tori fed into flute, flute fed into previous bell model tori granular synthesis of buffer".

Handwritten notes: "Led." appears three times below the staff.

Score for the second system, featuring Voice, Tori., Bls., Lflt., and Elec.

Voice: Treble clef. Lyrics: ex - (sss) sur git ze phi rus (sss). Dynamics: *mf*, *f*, *mp*, *ppp*, *mp*, *p*, *f*. Performance instructions: "whispered, without pitch", "sung", "accel.", "rit.", "very freely, sounding embellished".

Tori.: Percussion staff. Performance instruction: "voice altered, brisk swish of the water". Dynamics: *sfz*.

Bls.: Percussion staff. Dynamics: *p*.

Lflt.: Treble clef. Dynamics: *ff*, *n*.

Elec.: Bass clef. Performance instruction: "tuning of bls similar to". Includes "no routing", "Route voice to this C", and "Route flute to previous to bell models".

Handwritten notes: "Led." appears twice below the staff.

ppp *very freely* *ppp* *pp* *ppp* *p* *ppp* *mp* *p*

Voice: et sol et sol pro - ce - dit et sol pro - ce - - - dit et

Tori.: **||**

Bls.: *begin first five events with ensemble, but proceed independently through each event* *each pattern is played quicker than the previous* *simile (l.v.)* *proceed independently of ensemble*

Lflt.: *with voice*

Elec.: *ppp with expressive vibrato* *ppp* *pp* *ppp* *p* *ppp* *mp*

Ped. *no routing* *damp previous resonances* *establish new bls tuning*

mp *mp* *mf* *mf* *f*

Voice: sol pro - ce - dit te - pi - dus et sol pro - ce - dit te - pi - dus et sol pro - ce - dit tep - pi - dus

Tori.: **||**

Bls.: *repeat pattern an undetermined number of times accel.*

Lflt.: *independent of others*

Elec.: *ppp* *f* *cut resonances*

Ped.

fp *mf* *pushing forward* *mp*

Voice: iam te - rra si - nus a - per - - - - it a -

Tori. *chimes, disturb surface of water using a circular motion*
sustain by scraping body of instrument with wood stick *struck*

Bls. *mf*

Lflt. *mp*

Elec. *8va -*
chime tuned to bell model tuned to
route tori. to bls. on B *bell model tuned to*

Ped. *no routing*
tori tuning : indeterminately high frequencies

p *pp*

Voice: per - - - - it a - per - - - - it

Tori. *high sounding chimes*

Bls. *pp*

Lflt. *pp*

Elec. *retune bls.* *Ped.*

highest note that can be sung quietly
ppp

Voice: dul - - - - - co - - - - - re - - - - - *ppp* su - o

Tori.

Bls. *ppp* Lft. and Bls. gradually accel
 both instruments are alligned at first, becoming more independent as they speed up

Lflt. *ppp*

Elec.

Ped. route voice to active bell models

Ped. remove voice routing
 slowly fade flute into bell model

Ped.

accel. - - - - - rit. - - - - -

Voice: *f* whispered di - - - - - *mf* f - lu - - - - - *p* i - - - - t.

Tori.

Bls.

Lflt.

Elec.

p *pp* *ppp*

disturb surface of water in an irregular manner
 motions will make no sound, rather, they will process the voice
 when it sounds

amplitude of voice is altered by tori
 the flute sound is tori sound into the previous bell models
 amount of tori sound fed is controlled by lft. mouth, which is also fed into models

Nubibus Atris

*Nubibus atris
condita nullum
fundere possunt
sidera lumen.*

*Si mare volvens
turbidus Auster...*

Boethius

The notation and performance methods of *Nubibus Atris* are very similar to *Levis Exsurgit Zephirus*. There are a few important differences.

Voice:

There is no indication of pitch given in the score. There are moments when the vocalist is called on to whisper, sing, do both, or even transfer between one method of vocal production to the other. Please follow all performance instructions as given by the score.

Toriton Plus / Bls.:

The Bls. are often sent to delays with feedback in this piece, not an organized waveguide. The music should be played in the same way as the previous movement.

Lichtflöte:

For the most part, pitch is not indicated for the Lichtflöte. Rather, lines are given to indicate the level a particular hole of the light flute is to be opened or closed. The holes should remain closed throughout the piece unless otherwise indicated. At certain moments, the letters C and O appear. The letter C indicates a hole that is completely closed. The letter O indicates a hole that is completely open.

At some places, traditional note heads are given. Produce the sound as done in the first movement, by opening the mouth to play a sound, and closing it to end the sound.

Finally, a trill line with a symbol of six circles separated by a slash is a trill indication. Alternate between the two fingerings given by the notation.

Nubibus Atris

for voice and invisible instruments

Hurried, whispered, ametric

Rapid and violent

semi spoken and whispered

Voice
with immense quiet energy, whispered
 b - b
 mf *SSS* *pp*
 pp *tr s kk* *mf* *d t*

Toriton Plus
begin this figure when repetitions of voice sound start to decay
briskly disturb surface of water with hand
granular sss

Bls.
very rapidly *slow.* *accel.* *rit.*
 ppp *mp* *pp* *f* *pp*
 pp *ff* *pp*

Mouth
 O. C.
both ends are always closed unless indicated otherwise
 (close mouth)
fp (very low note)

Lichtflote
 O. C.
 (gradually raising in pitch)

Hand
 O. C.
very slowly from opened to closed
 (remain closed)
 C.

voice and bls. fed into sub audio delay lines
 the length of these delay lines are controlled by hand of lft.

delay lines at audio rate
 voice and tori fed into reverb, wet mix controlled by lft. mouth

bls. delay lines at sub audio, lft. flute model near sub audio rate
 hand of flute controls delay line length of bls and flt.

LED. LED.
 voice delay off

LED. LED.
 record voice into buffer
 recorded voice used for Tori. granular

LED.

* KK - Create a fricative sound with backof throat

4

Voice

Tori.

Bls.

Lflt.

Elec.

mp *n* *p* *mf* *p*

gliss.

mm

ff

pp *ff*

p *ff*

pp *mf* *p*

p *o.* *c.*

G.P.
(rather long, wait until instruments are silenced)

(close mouth and hand)

voice fed into bls. delay lines and reverb

tor. creates chime sound using voice as impulse
chime and voice fed into reverb controlled by lflt.

delay lines at audio rate

Leo. *Leo.*

(itches need not be exact)
subtly, gracefully, molto dolce

audibly blow on surface of the water

The score is divided into three measures. The first measure shows a voice part with a glissando and notes *mp*, *n*, and *p*. The Tori. part has a long rest. The Bls. part has a melodic line starting at *pp* and ending at *ff*. The Lflt. part has two lines, both starting at *p* and ending at *ff*. The Elec. part is silent. The second measure shows the voice part with notes *p*, *mf*, and *p*. The Tori. part has a wavy line representing blowing on water, starting at *p* and ending at *p*. The Bls. part has a rest. The Lflt. part has a rest. The Elec. part has a rest. The third measure shows the voice part with a rest. The Tori. part has a rest. The Bls. part has a rest. The Lflt. part has a line starting at *p*, rising to *o.*, and then falling to *c.*. The Elec. part has a rest.

7

ff (*loudly whispered*)

pp

fp

fp

fp

Voice

Tori.

Bls.

Lflt.

Elec.

d

p

ss

t(ss)

si -

(start very slowly)

ff

pp ————— **mf**

fp ————— **f** *o.* **fp** ————— **ff**

C.

o.

o.

Shepard Tone bells

voice and bls. fed into sub audio delay lines
the length of these delay lines are controlled by hand of lflt.

voice fed into reverb
voice and tori fed into reverb, wet mix controlled by lflt. mouth

very low flute
Shepard tone bells

Red.

Red.

Red.

Red.

transition from whispered to spoken -----

9 *p* ----- *mf*

Voice

(si) - - - de - - ra lu - - - - men.

Tori.

Bls.

repeat pattern an undetermined number of times
accel.-----

ff spoken, with much energy
(obey spirit of rhythm, not the letter)

sfz

3

Si ma - re vol - vens tur - bi - dus au - ster

fff *p*

fp *o.*

Lflt.

tr

o.

Elec.

three glissandi, ad libitum

Bls tuned to inharmonic bells with distortion

Ad.

12

very brief pause

whispered, held as long as possible

mf *n* *mf* *p* *sfz* *sfz* *ff*

Nu-bi-bu sss a - - tris con di - ta

Tori.

very brief pause

very rapidly 5

pp *mp* *pp* *ff* *pp* *sim.*

Bls.

pp *mp* *pp* *ff* *pp* *ff* *ff* 3

Lflt.

very brief pause

o. *c.* *o.* *c.* *o.* *c.* *o.* *c.* 3

Elec.

processing as in the beginning

PEDAL AGAIN WHEN VOCIE CUTS OFF

lflt. : low flute
bls. Shepard Glissando Bells

ped. *ped.* *ped.* *ped.*

deliberately, slightly slower

these noteheads indicate sharp attack

16 *slightly sung*

fp *(not too high)*

gliss. gliss. gliss.

Voice: nul - - - lu - - - m

Tori.: *blow audibly on the surface of the water* *disturb surface of water in an irregular manner*

Bls.: *ff* *pp* *3*

Lflt.: *o.* *(close.)* *o.* *C.*

Elec.: *pp* *mf* *fp* *pp*

gradually transition from f to whispered u to spoken u

gliss.

distorted bells
voice fed into distorted bells

Red.

remove distortion from bells

Red.

tori. cuts up voice sounds, lflt: breath of flute
to bls. low E from last movement.
cease voice into bells
flute with breath sound only

Red.

chime sounds

Red.

19

half whispered, half sung whispered voiced, but weak, dying away **ff**

p *gliss.* **pp** **pp** **mf** **pp** **pp** *ppp* **ff**

Voice Pos - su - n - - - t (sss) d r l m n Si ma - re

Tori. [wavy line]

Bls. *very rapid* **p** **pp** **pp** **ppp** **ppp** **pppp** **ff**

Lflt. C. C. C. C. C. C. C.

Elec. C. C. C. C. C. C. C.

*bls. Shepard Glissando Bells
lflt hand: speed of shepard gliss
lfti mouth: reverb wet mix*

Ped.

*Bls. inharmonic bells with distortion
low flute sound*

Ped.