

Knut Vaage:

ELECTRA II

for
amplified flute and computer

2023

(version 26.02.2023)

with thanks to Thorolf and Ingela

Full PA with sub, a laptop (min. 1 Ghz) with Max/MSP, and a four channel sound card is required.
The piece should be performed with quite loud amplification.

Electra II for flute and computer is based on Electra for el.violin and live electronics.
The studio testing and developing of Electra II has been done together with Ingela Øien autumn 2005.
Electra for el.violin was commissioned and premiered by Victoria Johnson in 2003.

The Max/MSP programming is done by Thorolf Thuestad at BEK in Bergen

New version performed on BIT20-concert february 2023. Re-programmed electronics by Thorolf Thuestad
No longer use of Max/MSP and cues was done manually. Still Max-cues are notated in score

ABOUT THE NOTATION OF THE SCORE:

Accidentals apply through the whole bar within the same octave.
Upper staff show time and triggers, second show what is actually played,
and the rest describes the computer activity - all based on realtime processing

DURATION:

Approximate 13 min. 40 sec.

First performed at BergArt 2005 by Ingela Øien, Bit20 Ensemble

Video art (based on a vulcano) by Ellen Røed

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Electra II

Knut Vaage

♩ = 60
(with manual cues, possible with slightly slower tempo)

Timeline

Max/MSP: 0 effect

Amplified flute

fff

Fuzz ON

Effect 1

Effect 2

Effect 3

Timeline

Amp. Fl.

(poco rubato)

(a tempo)

Effect 1

Effect 2

Effect 3

0.10 (click on)

Timeline

TRIGGER A

(higher than midi-note 95)

Amp. Fl.

(poco rubato)

(a tempo)

Effect 1

Effect 2

Effect 3

FFT spektrum of noise:
(change for each attack, randomly)
softly first, gradually more intense

Electra II

(trigger on time between attack approx. 3 sec.)

0:20 0:30 0:40 TRIGGER B

Timeline

(secco stacc)

(play low notes as very rapid grace notes)

Amp. Fl.

Fuzz OFF

Effect 1

add. gradually more and more noise and overtones from high spectrum of chords, ringmodulated

Effect 2

Use delay to make trigger to make sampling for buffer 1

Effect 3

direct sound OFF

Pitch shifter: (in half steps)

0:46 TRIGGER C, timeline 0:49:30 0:50 TRIGGER D (lower than midi-note 65)

Timeline

direct sound ON

Amp. Fl.

p *fff* *fff* *fff* *p*

Effect 1

transform each noise part

Effect 2

Delayed action Sampling of group for buffer 2

Effect 3

timeline trigger playback sampling from buffer 1 rhythmic polyphony, random pitch variation

1:00 1:08

Timeline

Amp. Fl.

fff *fff*

Fuzz ON

Effect 1

random edit

Effect 2

Effect 3

random edit playback sampling from buffer 2

Timeline 1:20 1:25

Amp. Fl. *9:8* *9:8* *(poco rubato)*

Effect 1

Effect 2 timeline trigger fade effect

Effect 3 fade effect

Timeline 1:30 TRIGGER E 1:36 1:40 1:50

Amp. Fl. *(a tempo)* *(higher than midi-note 95)* *(square note' continued by sampler)* *gliss. lento, smooth as poss.* *mp.* *Fuzz OFF* *sample/loop 2 sec. from the note A, continous playback*

Effect 1 Cloud delay (high notes. into delay) (input on) (eff. vol. fade in) fade effect

Effect 2 Delayed action enforce sub spectrum (cut of freq. 70 Hz) Low pass filter, gradually transform

Effect 3 High spectrum, reverbed and ringmodulated cut input (fade naturally)

Timeline 1:55 2:00 2:10 2:20 2:30

Amp. Fl. *(breath covered by sustainer)* *ossia, until out of breathe* *ord.*

Effect 1 playback sampling from buffer 3 (loop)

Effect 2 playback sampling from buffer 1 rhythmic polyphony, random pitch variation

Effect 3 fade sampling of the note A

Timeline trigger

Timeline

2:37

2:40

2:41

2:50

TRIGGER F (lower than midi-note 65)

Timeline trigger

Fuzz ON

Fuzz OFF

Amp. Fl.

fff

9:8

9:8

mp

buffer 4

sample/loop 2 sec. from the note A, continuous playback

(square note continued by sampler)

gliss. lento, smooth as poss.

Effect 1

(playback buffer 3)

Effect 2

Delayed action

Granular cloud real time effect:

Effect 3

timeline trigger

fade effect

Timeline

2:55

3:00

3:10

(breath covered by sustainer)

Amp. Fl.

Effect 1

Effect 2

Effect 3

timeline trigger

sustainer

Timeline

(higher than midi-note 92)

TRIGGER G

(poco rubato)

(lower than midi-note 65)

TRIGGER H

Amp. Fl.

fff

9:8

9:8

9:8

Fuzz ON

stop sampled note

Effect 1

(sub spectrum continue)

Effect 2

(trigger turn effect OFF)

Delayed action

Effect 3

Timeline 3:20 3:25 3:35 3:40 TRIGGER I

Fuzz OFF

gliss. lento, smooth as poss.
fade direct sound

direct sound ON

1)

Amp. Fl. *p* *fff* *mp*

9:8 9:8 6:4

playback buffer 4 (the note A) fade sampling

Fuzz ON

Fuzz OFF

Effect 1

Effect 2

Effect 3

Pitch change: (grannular effect) (upwards gliss, smoothly) (pitch change into delay)

-11 +11

Delayed action

Timeline 3:50 3:55 4:00 4:10 4:20 4:23

(square note continued by sampler)
gliss. lento, smooth as poss. (1 min. 15 sec.)

buffer 5 (use also at page 11-13)
sample/loop 2 sec. from the note H, continuous playback

(delay) 0

edit spectrum random

random spectrum sampling

Effect 1

Effect 2

Effect 3

sustainer (cross fade)

Sampling of the filtrated sound for buffer 3

Timeline trigger

Timeline trigger

Timeline 4:30 4:40 4:43 4:50 5:00 5:05

stop sampled note ord.

(sustainer) (cross fade) timeline trigger sustainer

Effect 1

Effect 2

Effect 3

playback sampling from buffer 3 (loop)

transform sampling gradually

5:10

(lower than midi-note 65)

TRIGGER J

fade direct sound

direct sound OFF

(play low notes as very rapid grace notes)

Amp. Fl.

fff

9:8

9:8

9:8

Fuzz ON

Fuzz OFF

Effect 1

Effect 2

Pitch changer:
(smooth major second gliss)

(in half tone steps)

Effect 3

(playback buffer 3)

5:23

Amp. Fl.

9:8

9:8

Fuzz ON

Effect 1

Effect 2

-12

-19

-30

-37

timeline trigger

pitch change glissando slowly upwards

Effect 3

5:25

5:30

5:32

Timeline

timeline trigger

direct sound ON

sample while playing

(A)

sample buffer A

multiphonics (gliss.)

f

Fuzz OFF

Effect 1

Effect 2

fade effect

timeline trigger

Effect 3

fade effect

6:4

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Timeline

5:35 5:40 5:45 5:50 5:55 6:00 6:05

timeline triggers:

Amp. Fl. *ord.* *p* *f* multiphonics *p* *f*

sample buffer B sample buffer C sample buffer D

Effect 1 (A) playback sampling random corrupted play buffer A (A) play buffer A (B) play buffer B (loop)

Effect 2 (C) play buffer C

Effect 3

Timeline

6:10 6:20 6:31 TRIGGER L

(attacs between c. 1 sec.)

Amp. Fl. *p* *f* *p* *f*

timeline trigger timeline trigger

Effect 1 (D) play buffer D (loop) cut effect 1/2 fade delay (effect 3)

Effect 2 (loop)

Effect 3 random delay 100% cut input

Timeline

6:40 (higher than midi-note 95) TRIGGER M 6:50

(a tempo) (play low notes as very rapid grace notes)

Amp. Fl. *fff* 9:8 9:8 3:2

Fuzz ON wait for attacc Fuzz OFF playback sampling from buffer 3 pitch change upwards stepwise triggered by attacs

Effect 1

Effect 2 add. gradually more and more rests of noise and overtone spectrum from chords

Effect 3 output (fade delay)

7:00

(trigger on time between attack approx. 3 sec.)

TRIGGER N

7:10

add noise

Fuzz ON

Effect 1

Effect 2

Effect 3

playback sampling from buffer 1
rhythmic polyphony, random pitch variation

7:20

7:27

7:29

7:30

7:40

7:45

Fuzz OFF

mp

(square note continued by sampler)

gliss. lento, smooth as poss.

timeline trigger
sample/loop 2 sec. from the note E, continuous playback

fade effect
timeline trigger

Effect 1

Effect 2

Effect 3

7:50

8:00

8:10

8:20

8:30

(breath covered by sustainer)

(breath covered by sustainer)

fade sampling of the note

timeline trigger
enforce sub spectrum

Low pass filter, gradually transform

add granulator

0

timeline trigger
sustainer

timeline trigger
sustainer

Effect 1

Effect 2

Effect 3

0

Electra II

make beautiful sounds with harmonics and noise

Timeline 8:30 8:40 8:45 8:50 9:00 9:10 9:15 9:20

Amp. Fl. *pp*(play louder)

Effect 1

Effect 2

Effect 3

fade sampling of the note E
fade effect
timeline trigger

pitch change glissando slowly upwards

sound from effect 1
timeline trigger
sustainer (sustainer)

close to mic.
whistle tone, poco ad lib.
ord.

add noise
sound from effect 2

Timeline 9:25 9:35 9:40 9:50

Amp. Fl. *mf* *pp* *ppp* *p*

Effect 1

Effect 2

Effect 3

spectrum of A ad lib
8^{va}

add noise from direct sound
timeline trigger

Resonator: make rhythmical and high pitched tone
sample to buffer 2 (high pitched tone)

Timeline 10:00 10:10 (max 55 sec.)

Amp. Fl. *p* *pp*

Effect 1

Effect 2

Effect 3

structures made by random: delay, resonator, pitch change..... slowly transformed at 11:45, add extreme pitch change

Timeline

11:50 (click off) TRIGGER O (trigger: noise/fff)

Amp. Fl. *fff* Fuzz ON

Effect 1 fade all Max/MSP-effects

Effect 2 fade delay

Effect 3 (random harmonizer) rapid bubble effect

Timeline

Amp. Fl. *(poco rubato)* *(a tempo)*

Effect 1

Effect 2

Effect 3

Timeline

12:00 (click on) TRIGGER P (higher than midi-note 95)

Amp. Fl. *(poco rubato)* *(a tempo)* quasi gliss. (con tutta la forza) Fuzz OFF

Effect 1 FFT spektrum of noise: sampling of direct sound for buffer 4

Effect 2 0

Effect 3 enforce sub spectrum playback sampling from buffer 3

12:10

Timeline

Amp. Fl.

Effect 1

Effect 2

Effect 3

add. gradually more and more noise and overtone from high spectrum of the flute.

transform sampling gradually

(lower than midi-note 65)

TRIGGER Q

Timeline

Amp. Fl.

Effect 1

Effect 2

Effect 3

Fuzz ON

(transformed noise)

playback sampling from buffer 1

rhythmic polyphony, random pitch variation

(grad. transformed buffer 3)

(higher than midi-note 83)

TRIGGER T

Timeline

Amp. Fl.

Effect 1

Effect 2

Effect 3

Fuzz OFF

mp

playback 2 sec. buffer 5

mute effects

playback sampling buffer 2

(attacc trigger)
TRIGGER U

Timeline

Amp. Fl. *listen to, and stop with sampler*

fff

Fuzz ON

Effect 1

Effect 2 *open all effects, but cut buffer 2*

Effect 3

12:30

Timeline

Amp. Fl.

TRIGGER V

(attacs between c. 1 sec.)

fff

Fuzz OFF

change chord by noise and add pitch change

Effect 1

Effect 2

Effect 3

12:40

Timeline

Amp. Fl.

12:44

TRIGGER W, timeline

mp

fff

Fuzz ON

listen to, and stop with sampler

playback 3 sec. buffer 5

Effect 1 *mute effects*

Effect 2 *but generate FFT noise*

Effect 3 *transform noise gradually (higher tone quality)*

(attacc trigger)
TRIGGER X

Playback buffer 4, add noise

(rhythmic polyphony, buffer 1)

(transformed extreme buffer 1)

Electra II

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12:50

Timeline

Amp. Fl.

Effect 1

Effect 2

Effect 3

Timeline

Amp. Fl.

Effect 1

Effect 2

Effect 3

(click off)

(rest)

TRIGGER Y

13:00

(short gliss. or bend)

effect 1 into delay

cut rhythm

Delay 100%

feedback, output 10%

effect 3 into delay

fade FFT-noise 13:30

0

Timeline

Amp. Fl.

Effect 1

Effect 2

Effect 3

13:10

13:20

13:30

fade FFT-noise 13:30

0

timeline trigger

fade delay