



Helm & Slinger (Helmet and Sling) 2001

Composition for Trumpet and Max/MSP. - Michèl Koenders
for Marco Blaauw

At some stage we all have to arm ourselves and in any case it's handy to be able to withdraw from a treaty if it doesn't suit one any more isn't it?

Aside from this.... This is the last piece in my "Armamentscycle" of three pieces for solo instrument and computer (cello: "Bow and arrow", piano: "Spear and Shield", trumpet "Helmet and Sling").

I thought it would be a good idea to use this piece to provide Theater Kikker with appropriate armaments for the future, being a commission for the festive reopening of this theatre in September 2001.

"Helmet and Sling" is, as are the other pieces in the armamentscycle a so-called Algorithmic composition. In short: complex calculations form the basis of the pitch, dynamics and duration of the notes. The use of microtonality (quarter-tones) is interwoven with tonal and chromatic elements in the composition and serves as coloration only. The computer provide the rest of the colour. Harmonizers and time variable delays are used for this as well as convolution and through this techniques such as cross-synthesis in combination with for example, additive synthesis.

Because pitch detection in combination with fractal calculations is constantly being applied to determine the exact progression of the signal processing, the precise development of the signal processing (in order to modify the sound) is recalculated by each new note.

As such "Helmet and Sling" is a so-called "Eventdriven" composition, whereby much of the precise sound manipulation falls back in the hands of the performer.

Original Recording Tapes: 30 January 2002, ZKM Karlsruhe Germany

Recording Engineers: Thomas Saur & Volker Schmitt

All editing, processing and mixing: Michèl Koenders

PostMix: july 2002 DJC Studio, Den Bosch, The Netherlands

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Helmet & Sling - 2001

An Algorithmical Composition for trumpet in C
with quarter tones and Computer.

Duration: 13'32

Score Explanation pages: a - b

Score pages 1 - 10

Commissioned by: 'Fonds voor de Scheppende Toonkunst'

Score Explanation - Helm & Slinger (Helmet & Sling) -

04-04-09 michelk@wxs.nl

Michèl Koenders Utrecht, Augustus 2001 – rev291007

For Trompet in C, Max4/MSP2 - Macintosh (G4 / PowerBook G4 500 mhz)

For Marco Blaauw

Use of con sordino – Harmon Mute or solotone mute (as indicated).

Part I (I-a t/m I-f)

Pretty straight forward. No special things except for some actions.

Max/MSP will make use of a convolution patch with Ambisonic

(Pantophonic panning in space).



Growl, poco a poco more unpitched growl.



Cracked Tones.



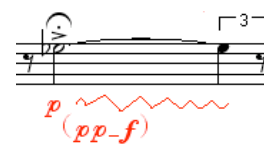
Exponential glissandi (follow the direction of the line).



1/2 valve glissando poco a poco ord.



1/2 valve glissando.

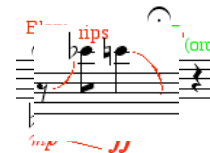


Follow aprox dynamics.
Blow with a certain pitch.

Part II (II-a t/m II-h)

Max/MSP will make use of a layered harmonizer patch with Ambisonic

(Pantophonic) panning in space.



Rips: look for the direction !

A slide glissando:

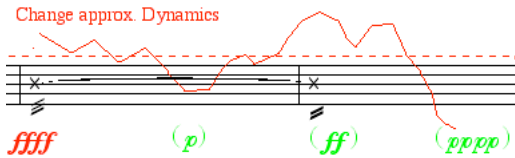




A normal glissando, taken over by a flutterzunge and ending in a rip.



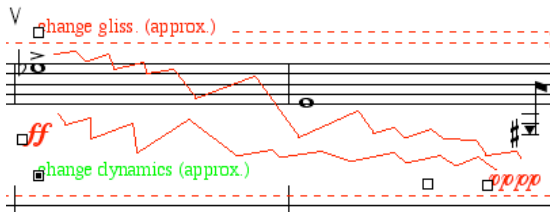
Tap with fingernails on the bell of the trumpet.



Follow the indicated line for the change in dynamics

Part III (III-a t/m III-d)

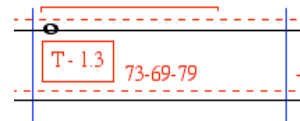
Max/MSP will make use of an extended continuous variable timedelays with ambisonic (pantophonic) panning in space.



Follow the indicated lines for pitch (the upper one) (and end on the lowest possible note) and change the dynamics as indicated by the second (lower) line.

For all sections of the Piece:

Trigger note indications (with the pitch notated in MIDI note numbers).



Quartertones:

Down-scale



0 down - 1/4 down - 1/2 down - 3/4 down

Up-scale



0 up - 1/4 up - 1/2 up - 3/4 up

Helmet & Sling (Helm en Slinger)

Michèl Koenders / michelk@wxs.nl

Duration 13:32

An Algorithmical Composition for trumpet in C with quarter tones and Computer.
for Marco Blaauw.

Commissioned by 'het Fonds voor de Scheppende Toonkunst'

05-04-2009
15:44
a = 442 Hz

Score Explanation pages: a - b

Score page 1 - 10

Helmet & Sling (Helm en Slinger)

I

Michèl Koenders

♩ = 74

con sordino (harmon mute)

gliss. - - - - -

ord.

Trompet in C

pp

pp

p

f

ff

f

Computer DSP

Max/MSP Patch - 1 (No Effect)

T - 1.1 69-75-69-61

Computer 3D Surround

I-a

con sordino (harmon mute)

flz. - - - - -

ord.

flz. - - - - -

ord.

Tr.

ff

pp

mp

f

sfz

pp

mf

p^K

f^K

mp^K

ff

mf

pp

DSP.

Max/MSP Patch - 2 (HARM1)

+ Pantophonic4SP

3D

I-b

ord.

gliss. - - - - -

ord.

Blow - - - - -

con sordino (harmon mute)

ord.

Tr.

f

mp

p

ff

p

mp

ff

p

f

p

(pp-f)

DSP.

T - 1.2 76-68-63

Max/MSP Patch -3 (HARM2)

+ Pantophonic4SP

3D

I-c

tr

ord.

gliss. - - - - -

ord.

1/2 v.

gliss. - - - - -

ord.

Tr.

p

ff

p

mf

f

ff

p

ff

mp

f

DSP.

T - 1.3 73-69-79

Max/MSP Patch - 4 (HARM3)

+ Pantophonic4SP

3D

I-d

28 Tr. *mf* *sfz* *p* *f* *ff* *ppp* *f* *mf*

Blow ord. exp. gliss. ord.

3 DSP

3D T - 1.4 71-72-67-68 Max/Msp Patch - 5 (HARM4) + Pantophonic4SP I-e

1/2 v.

35 Tr. *pp* *p* *mf* *ff* *p* *f* *sfz* *pp* *fff* *sfz* *sfz* *ppp* *ff*

ord. 1/2 v. poco a poco ord. (ord.) accel. (ord.)

♩ = 84

♩ = 74

3 DSP

3D

exp. gliss. ord.

42 Tr. *mf* *pp* *f* *pp* *p* *f* *fff* *p* *f*

growl poco à poco unpitched flz. accel. gliss. 1/2 v. exp. gliss. ord.

♩ = 74

3 DSP

3D

49 Tr. *fff* *pp* *f* *p* *mp* *ff* *f* *ppp*

gliss. ord. gliss. ord. ord. gliss. ord. 1/2 v. gliss.

3 DSP

3D T - 1.5 78-73-80 Max/MSP Patch - 6 (HARM5) + Pantophonic4SP I-f

56

Tr.

ord.

ff *mf* *ff* *f* *pp* *mf* *ppp*

DSP.

3D

II

System II-a: Trompet in C (♩ = 84). Dynamics: *p*, *f*, *ff*, *ppp*, *pp*, *p*, *mf*, *p*. Articulations: *ord.*, *gliss.*, *rips*, *ord.*, *blow*. DSP/3D: Max/MSP Patch - 7 (CS) Kraan1_44.1_ST.snd10*, + Pantophonic4SP, II-a.

System II-b: Tr. (♩ = 84). Dynamics: *ff*, *p*, *ff*, *p*, *f*, *p*, *ff*, *p*. Articulations: *slide gliss.*, *gliss.*, *slide gliss.*, *1/2 v.*, *poco à poco*, *tr.*. DSP/3D: Max/MSP Patch - 8 (CS) Leon_ST_1-1oct, + Pantophonic4SP, II-b.

System II-c: Tr. (♩ = 96). Dynamics: *p*, *fff*, *mf*, *ff*, *mf*, *fff*, *ff*, *f*. Articulations: *ord.*, *accel.*, *tr.*, *trem.*, *ord.*. DSP/3D: Max/MSP Patch - 9 (CS) Scissors_ST_1_4*out-2oct, + Pantophonic4SP, II-c.

System II-d: Tr. (♩ = 96). Dynamics: *ff*, *mf*, *sffz*, *f*, *pp*, *f*, *p*, *ff*. Articulations: *exp. gliss.*, *ord.*, *flz.*, *growl*, *ord.*, *exp. gliss.*, *gliss.*, *ord.*, *gliss.*, *flz.*, *rip*, *ord.*, *gliss.*. DSP/3D: Max/MSP Patch - 10 (CS) (CS) Leon_ST_1-1oct, + Pantophonic4SP, II-d.

System II-e: Tr. (♩ = 96). Dynamics: *fff*. DSP/3D: Max/MSP Patch - 11 (CS) texBabsST20out10*, + Pantophonic4SP, II-e.

Tr. 29 (ord.) flz. ord. growl 3 3 3 ord. 3 3 growl 3 3

ff f p mf f pp mf ff f

DSP.

3D

Tr. 36 flz. ord. accel. exp. gliss. ord. exp. gliss. ord. 3 flz. exp. gliss. tr. ord. growl

pp f ff f ff f p ff p pp

♩ = 96

DSP.

3D

Tr. 43 flz. gliss. ord. gliss. ord. accel. ord. 3 flz. ord. 3

f ff mf fff ff f p

♩ = 96

DSP.

3D

Tr. 50 ♩ = 48 poco à poco trem. flz. (accel. flz.) ord. flz. gliss. exp. gliss. ord. 3 growl 3 ord. 3 gliss. ord.

mf f p f ppp ff p < f ff p mf f

♩ = 96

DSP.

3D

Max/MSP Patch - 12 (CS) textBabsST20out10*.2Oct

+ Pantophonic4SP

II-f

57

Tr. *mp f* *ff f* *p* *pp > pppp* *f* *fff mf*

exp. gliss. ord.

DSP.

3D

Max/MSP Patch - 13 (CS) Leon_ST_1-1oct

+ Pantophonic4SP

II-g

64

Tr. *ff* *pp* *ff* *mf* *ff* *pp* *f* *pp* *ff* *pp*

exp. gliss. gliss. ord.

growl ord.

flz. gliss. ord. flz.

DSP.

3D

71 fingernails on bell

Tr. *fff* *f* *ffff* *(p)* *(ff)* *(pppp)*

Change approx. Dynamics

DSP.

3D

Max/MSP Patch - 14 (CS) termites_St_2_out_2

+ Pantophonic4SP

II-h

III

84

con sordino (solotone mute)

ord.

Trompet in C

Computer DSP

Computer 3D Surround

III-a

NO Max/MSP Patch - (loading 14 (DEL1))

Max/MSP Patch - 15 (DEL1)

+ Pantophonic4SP

III-b

8

Tr.

DSP.

3D

III-c

Max/MSP Patch - 16 (OSCB+DEL2)

+ Pantophonic4SP

III-c

66

ord.

exp. gliss.

f, ff, mf, f, ff, sfz > pp < f, ppp

15

ord.

Tr.

DSP.

3D

poco à poco fiz.

ord.

tr.

ff, p, f, sfz > pp < f, ff, mf, p, f

22

Tr.

DSP.

3D

change dynamics (approx.)

exp. gliss.

p, sfz > ppp < f > pp f, mp, ff, mf, ff, pp, ff, f, p

Tr. *ord.* *f* *poco à poco trem.* *ord.* *exp. gliss.* *ord.*

DSP.

3D

Tr. *change dynamics (approx.)* *(f)* *p* *change dynamics (approx.)* *ff* *change gliss. (approx.)* *pppp* *ord.* *mf* *f* *mp*

DSP.

3D

Max/MSP Patch - 17 (HSDELAYS3)

+ Pantophonic4SP

III-d

Tr. *43* *f* *ff* *p* *accel.* *f* *mf* *ff* *110*

DSP.

3D

Tr. *110* *1/2 v.* *ord.* *mf* *f* *p* *f* *ff* *pp* *mf*

DSP.

3D

57

Tr. *f* *p* *f* *fff* *f* *pp* *ff*

ord. gliss. V ord. gliss.

DSP.

3D

64

Tr. *f* *fff* *ff* *p* *mf*

V V V V

DSP.

3D

71

Tr. *p* *ff* *mf* *f* *ff* *f* *p* *mf*

1/2 v. flz. ord. gliss. V

SndFile

DSP.

3D

78

Tr. *ff* *fff* *f* *mf* *f* *ff*

V V V

DSP.

3D

85

Tr. *fff* *f* *ff* *mf*

DSP.

3D

91

Tr. *f* *p* *ff*

DSP.

3D

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