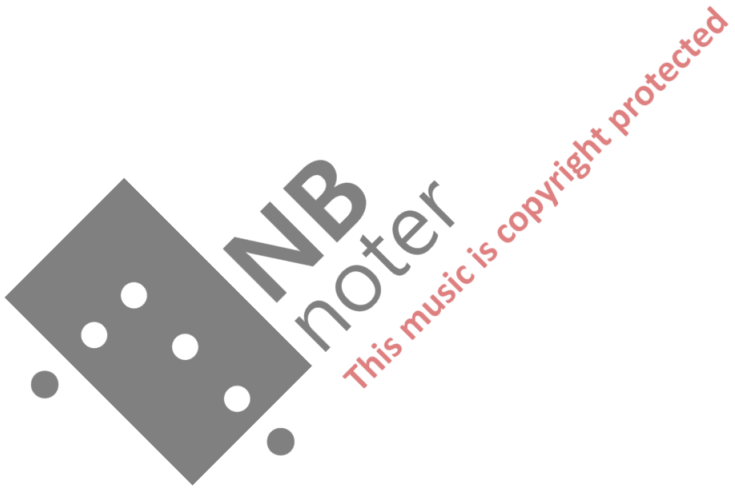
PerM Lindborg

2000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gin/gub

cello soloist
string ensemble (nine to twenty or more players)
conductor
macintosh
electronist (computer technician)
sound engineer

duration is eight minutes

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for performance, the following material is requested
items 1) - 4) are available on rental from NMI at www.mic.no

1)
part for the cello soloist

2)
parts for the ensemble string players, designated
vln1 (two staves)
vln2 (two staves)
vla (two staves)
vlc (two staves)
cb

the optimal string ensemble consists of twenty (20) players
6 vln1
5 vln2
4 vla
3 vlc
2 cb
a minimum of nine (9) players are requested
if gin/gub is played with less than 20 players, slight modifications of the score (double-stops etc) will be necessary
changes are left to the discretion of the concert master

3)
conductors score

4)
gin/gub CDR containing the computer performance material
note that additional software may be needed, such as Max/MSP, OMS etc
Max/MSP is available from Cycling'74 at www.cycling74.com

5)
macintosh computer & audio equipment
the hardware setup consists of
- G3 (G4) ≥300 MHz with ≥ 64 Mb RAM, preferably with Max/MSP installed
(if not, gin/gub_master.app can be used, although this is not recommended)
- microphone (placed close to the bridge of the solo cello)
- audio card (optional)
- midi interface
- pedal (for triggering events, used by soloist or conductor)
- MPX100 effect unit (controlled via MIDI)
- general reverb effect unit
- mixer ≥5 channels (mic, 2 mac, 2 MPX)
- PA system

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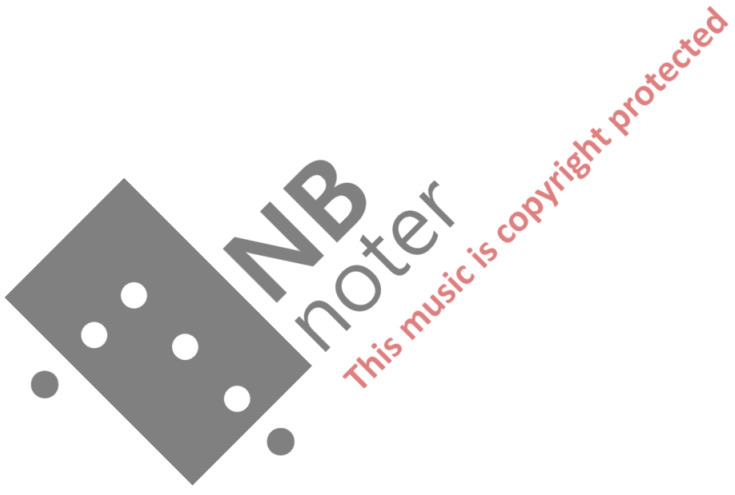
gin/gub was commissioned by Drivhuset (founded by Jon-Halvor Bjørnseth), with fundings from Norsk Komponistråd, as a part of the pedagogical project Bryt Lydmuren ("Break the sound-barrier"), in a collaboration with Barratt-Dues Musikkinstitutt and the Ultima Festival.

It was first performed by Anton Lukoszevieze, Barratt-Dues Kammerensemble and PerM Lindborg on the 15th of Octobre 2000 at the Oslo Philharmonic 2nd Hall, in a production by the Ultima Festival.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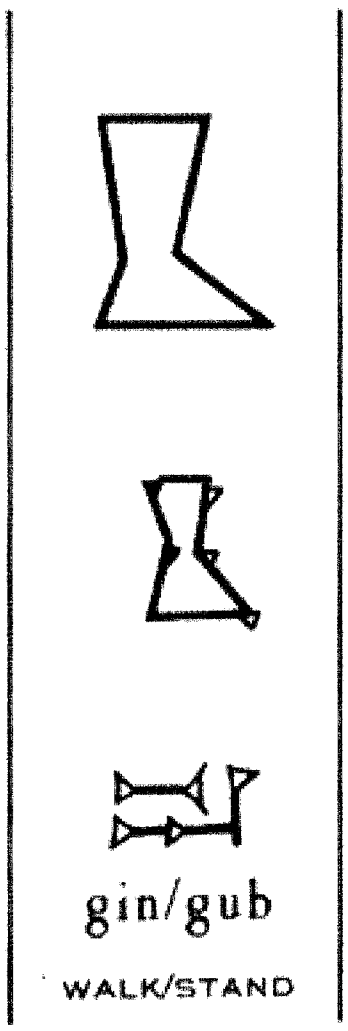

program note

gin/gub is a piece for a cello soloist, an ensemble of string players,a conductor, an electronist running a computer, and a sound engineer.

The title is the approximate pronounciation of an ancient Mesopotamian word which translates as walk / stand. Apparently, the same pictogram (in its earliest form ressembling a boot) could take on both meanings. I find correspondances with the music in the sense that the music, too, either proceeds (runs, jumps, struts) or stands rather still. The computer music, relying entirely on live recorded material, brings about a reflection on the act of memorizing, inprinting and re-reading of a scripture and how this physical evidence of sound is affected over time. The Mesopotamian representation of the words' pronounciations was inscribed onto a clay tablet in the form of a pictogram, still readable more than 5000 years later. In the computer of gin/gub, a sound buffer is written (as it were, onto a tablet made of silicon) and is then read some milliseconds later; at later times in the piece it may be read again. When the piece is finished the buffers are emptied. We, the listeners, have in our memory an inscription of the music, which is all there is left.

The computer runs a program which treats the sound of the cello soloist in real time. There are no pre-fabricated soundfiles. During the piece, direct audio (or earlier live recorded material) is used by different kinds of audio treatments, i.e. granular synthesis, filtering, harmonizing and spatialisation. In addition, there is a virtual instrument, using physical modelling synthesis, excited by jumbled bits of recorded material. The behaviour of the machine is dictated in a script indicating when to record a passage, when to generate a treatment, when to re-play a segment and what treatment to pass the audio through, and so on. Each action is composed, and clusters of actions are triggered at moments specified in the score. The computer can react responsively to agogic variations, and the audio result depends to a high degree on the sound being fed the computer by the soloist. In this way, the interaction is dynamic.

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computer instruments

followin
contains an amplitude tracker and a noise measurer built on zerox~ object [Dudas 1999]
the noise measure affects the spectral spread of the filters in fantasin (see below)
the amplitude of the recbuffs (rec01, rec02, rec07 etc) that have been stored in corresponding coll files which are subsequently used to modulate the noise that excites strängin (see below)

recordin
records sound and amplitudes into buffers and coll files, respectively, at certain passages in the piece (see above)

grainin
uses granular synthesis on a recbuff to generate 1- to 4-note chords that can be stretched, transposed or glissed (from one chord to another following a prescribed curve) to fit a passage

harmin
transposes the incoming audio signal in order to produce 1- to 4-note chords (see also mpxin)
built on harmv2b~ object [jimmies by Zack Settel 1994-8]

memberin
play back of a recbuff, with a certain (primitive) spatialisation
also generates clusters of sounds (aleatoric choice of buffer, onset, pan and level)

strängin
uses the amplitude of a certain recbuff as stored in a coll file (amprec01, amprec07 etc) to modulate noise which excites a sträng~ object [Dudas 1997-8]
"a Modalys mono-string with force connection"

fantasin
filters the semi-jumbled playback of 1-3 recbuffs using the lifeFilter, based on the Life object [Vorn 1996]
"This cellular automaton is based on Conway's Game of Life. It is modeled as a 2D grid of cells and each cell has one of two possible states: alive or dead. "
in lifeFilter (based on a patcher by jhno 1999) the x-axis represents left-right panning, while the y-axis represents the central frequency of the bands
the amount of spectral covering is affected by the current noise measure picked up, in that a noisier cello sound gives a larger (and, in fact, more harmonic-soundig) mapping of the filter onto the current recbuff

mpxin
controls via MIDI the external effect unit Lexicon MPX100
in measures 1-49 and 79-117 are employed various pitching and detuning effects (see harmin) and
in measures 50-78 a reverb (room size) effect

for details, refer to the help text (inside patcher)

rehearsal notes

the conductor
should provide for at least 3 hours of rehearsal time
and must see to that ALL performers are present
(including electronist and sound engineer)
as well as having the electronics (computer, MIDI, PA etc) set up and running for any rehearsal to be effective

the electronist (computer technician)
has to be knowledgeble about Max/MSP as well as score reading
his/her function is to
- set up the computer hardware (including MIDI stuff) and software
- monitor the patcher during performance (possibly trigger events if necessary)
- work out changes in the script gin/gub_events with the musicians (if necessary)
the hardware setup consists of
- G3 (G4) ≥300 MHz with ≥ 64 Mb RAM, preferably with Max/MSP installed
(if not, gin/gub_master.app can be used, although this is not recommended)
- microphone (placed close to the bridge of the solo cello)
- audio card (optional)
- midi interface
- pedal (for triggering events, used by soloist or conductor)
- MPX100 effect unit (controlled via MIDI)

the sound engineer
should design his/her setup knowing that
- gin/gub does real-time treatment of audio pick-up from the cello soloist's mic
- the mono signal from the mic goes preferable straight to the audio card
(or via a DI-box to the SoundManager in)
- from the computer, 2 channels (left & right) come from the audio card
(or via a stereo DI-box from the SoundManager out)
hardware minimum:
- general reverb effect unit
- mixer ≥5 channels (mic, 2 mac, 2 MPX)
- PA system

December 2000
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gin/gub

PerM Lindborg, 2000

1

2

FANTASIN (lifeFilter)

rec01

[0]

GRAININ, MEMBERIN

rec01

[pp - mf]

Mac

[MPX chorus] HARMIN, MPXIN, STRÄNGIN

rec01 rec02

8" (13/4)

clb ord

vlc

pp p mf

A ♩=96

8" (13/4)

1

vln1

vln2

vla

vlc

cb

1

3

4

Mac

harm.

MPX

rec03

[MPX]

pont

vlc

mp

pizz

p

[w.nail]

[arco]

poco f

simile

slap D-string (with the thumb) at ft; release (mf) immediately

approx:

rit.

5

3

4

[♩= 96]

vln1

sord

sord

mf

vln2

sord

sord

mf

vla

1. sola (senza sord)

P

sord

mf

vlc

1.2. soli (senza sord)

div

P

gli altri sord

mf

cb

sord div

mf

5

rec01,03

rec01

rec03

Mac

10" (17/4)

vibr

liberamente

vlc

mp

p

(mf)

10" (17/4)

8

vln1

vln2

(p)

vla

(p)

vlc

cb

6 7 8

Mac

MPx

harm

rec07

vlc

clb ord. tr tr

mp mf mf pp mf pp poco f pp p subito

[♩= 96]

3 ♩ ⇒ ♩= 136

10

vln1

(non div) senza sord clb

senza sord clb

mf p

vln2

(non div) senza sord clb

senza sord clb

mf p

mf

vla

(1.) senza sord div

mf p tutte pizz

tutte pizz div

mf PP

div (1.2.)

mf p tutti pizz

senza sord clb tutti pizz

mf p PP PPP

cb

9

10

Mac

rec07

rec09

p cresc

f

rec07

rec01,03,07

sträng

MPX chorus

rec09

vlc

V

3

f molto cresc.

3" (7/4+1/8)

(>) (>)

p

rit. poco

3" (7/4+1/8)

[♩= 136]

15

vln1

ord

pp

vln2

clb

clb

mf

ord.

pp

mf

vla

clb

ord

clb

ord

mf

mp

mf

vlc

arco

div

div

mf

cb

senza sord.

unis

pizz

3

mf

11 12 13

Mac

rec09 MPX harm rec02 harm rec01 MPX rec12 [marcato]

vlc

pp p mf mf f gliss tr

21

vln1

(pp) mf pp mf

vln2

ord. (pp) mf pp mf

vla

vlc

cb

Mac

14

15

rec12

rec02

rec07

stränq

hamm

vlc

meno forte

pizz

f

3" (8/4)

arco

pp mf pp mf

3" (8/4)

[♩=136]

27

vln1

vln2

vla

vlc

cb

clb

gliss

f

ord

div

mf

marcato

(ord)

arco

pizz

unis

p

pp

7

16

17

Mac

rec02

MPX

rec16

ad lib:

[ad lib: gliss

vlc

mf f pp (p) f

33

vln1

1. 2.

f

vln2

pp

f

vla

pp

pizz pizz

f

vlc

(ord)

f

cb

unis

f

Mac

18

19

rec09

rec09

rec01

harm

[MPX gliss]

MPX

rec17

rec19

vlc

pont

ord.

molto vibrato

molto dim.

gliss

39

vln1

vln2

tutti

tutti

vla

arco

ord.

div

vlc

cb

pizz

arco

20

21

Mac.

rec01,03,07

rec07

rec06, 12

rec20

vlc

sempre gliss

poco vibrato

V

pizz

p

f

pp

f

subito molto cresc.

45

vln1

1oco

(non div)

sord.

sord.

1. solo

tutti

vln2

(non div)

sord.

sord.

(div)

pizz

arco

vla

unis

unis

sord.

sord.

div

pizz

1. solo

arco

tutte

vlc

sord.

sord

div pizz

1. solo

tutti

arco

cb

div pizz

reverb [room size]

22 23 24

Mac

rec03

rec03

rec 01,02,09,17

sträng

harm chorus/detune

harm

rec22 rec23 rec24

vlc

arco

f

sul G

p

pizz

mf

PP

(mf)

B ♩=44

50

vln1

sul G

f

p

vln2

f

vla

f

vlc

f

clb

clb

mf

cb

pizz

mf

25

26

rec16.17,20

Mac

rec19

pp

rec 17,19,23

harm

reco3

senza vibrato

vlc

3

3

p

♩=40

56

vln1

ppp

senza sord.

[non vibr.]

pp

vln2

ppp

senza sord

senza sord

[non vibr.]

pp

vla

ppp

ord

ord.

[armonici]

ppp

pp

[armonici]

pizz

arco

cb

p

pp

27

28

rec07,12,16,17

01,03,07,12

Mac

rec17

8va

sträng

(arco)

vlc

pizz + come sopra

molto p

clb

mp

(p)

60

espressivo

mp

vln1

1. solo [senza sord]

con vibrato

gli altri con sord

V

p

mp

vln2

sord.

sord.

V

clb

clb

p

mp

mp

p

vla

vlc

[ord]

clb

clb

(pp)

p

cb

Mac

reverb

29 30 31

rec23

sträng

vlc

arco ord. [non vibr.] sul D & G: armonici ad lib.

P PP P

mf P P

64

vln1

V P

vln2

ord ord P

vla

ord. ord. P

vlc

1.2. vibrato

cb

1.solo 2.solo [ord.] clb clb

molto P PPP mf subito

=44

Mac

32

rec24

33

rec33

vlc

simile

pizz

mp

p

[ord.]

come sopra

f

mf

69

vln1

1. con sord

2.

p

tutti

via sord.

mf

vln2

1.

2.

P

tutti

fsub

3.

via sord

vla

senza sord

con sord

cb

34

35

rec33

Mac

rec01

chorus

f

dolce

harm

vlc

mf

pp

p

mf

C

♩=126

75

vln1

senza sord

div

senza sord

pp

f

unis

pp

p

(non div)

(V)

f

vln2

senza sord

div

senza sord

pp

f

vla

senza sord

senza sord

mf

cb

ord

ord

mf

tutti

mf

Mac

36

37

sträng

[filter] rec20

recog

harm

rec19

rec02,22

vlc

clb

ord.

molto dim.

pizz.

80

vln1

8va

loco

vln2

unis

vla

div

arco

vlc

cb

(pizz)

17

38

39

01,07,12,20

Mac

chorus

MPX, harm

[arco]

vlc

arco

f non troppo

(f)

f

♩=136

86

1. solo

vln1

f non troppo

pizz (secco)

gli altri, con sord

sul G

f

vln2

sord

sord

f

vla

sord

sord

f

vlc

sord

arco

sord

arco

f

cb

40

41

Mac

rec02

[o]

rec40

chorus

rec40

rec41

[vibrato]

sotto

vlc

92

(1. solo)

pizz

arco

♩=96

vln1

p molto

vln2

p molto

vla

p molto

vlc

p molto

arco

cb

42

43

[MEMBERIN]

rec03,07,33,40,41

Mac

rec33

p

rec07

vlc

(>)

p

99

vln1

p

(>)

(1. Solo)

pizz

arco

3 pizz

PP

poco f

vln2

PP

vla

cb

Mac

[filter] rec01,03,07,24

rec24

f

mf

[chorus]

vlc

pizz

secco

arco

f mf p mf

103

vln1

arco

pizz

(fsempre)

vln2

vla

vlc

cb

45

46

Mac

rec 07,23,24

07,24

02,23,33

mpx, harm

vlc

10" (17/4)

arco

liberamente

[arco]

mf

mf

107

10" (17/4)

[♩= 96]

vln1

vln2

vla

vlc

cb

47

[all recbuffs]

rec20

rec22

Mac

[recbuffs]

8va

chorus

[Vibrato]

vlc

7" (12/4)

f, non troppo

7" (12/4)

110

PP

PPP

(1.solo)

pizz

arco

vln1

(gli autri)

mp

PPP

vln2

mp

PPP

vla

mp

PPP

vlc

mp

cb

mp

49

rec01,03

dim.

rec02

rec01

Mac

p

mp

sträng

vlc

pizz

arco

mp

ppp

[♩= 96]

115

(1. Solo)

mf

vln1

sul G

p

vln2

sul G

p

vla

sul G

p

vlc

sul D

p

cb