

Deconstructing Dowland

Duet for guitar and computer (real-time sound processing and electroacoustic sound).

10'00 (2009). 2020 revision for MaxMSP-8

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John Dowland's song *Can she excuse my wrongs?* was published in 1597 in the *First Book of Songs*. The song is in the form of a galliard that we find as both consort setting and as three galliards for lute solo. Taken together, these lute pieces may give an idea of Dowland's art of extemporization. In 2003 Barrett began work on a live electronics composition for guitarist Stefan Östersjö. This composition, *Where shadows do for bodies stand* takes as its starting point Dowland's *Can she excuse my wrongs?* The electroacoustic medium provided a means to connect antique music to a new aesthetic of sound-surrealism serving to expand the guitar's quiet and intimate sonority. Dragging the antique into the modern even further, deconstruction of the three galliards was the source of *Deconstructing Dowland*. The deconstruction is a process of dismantling to create something new, but is also a transgression, a disruption, and a shift of meaning from the inside out. *Deconstructing Dowland* was commissioned by Stefan Östersjö with funds from the Norwegian "Fond for lyd og bilde".

Performers

Classical guitarist.

Computer performer (MaxMSP, live sound processing and score reading).

Technical requirements

- Two low noise condenser microphones
- One miniature microphone (DPA 4060).
- MacOSX computer (current version compatible for OSX 10.14). Rather than providing a CPU specification, please check that the performance patch is running at less than 50% CPU at peak processing. The patch was designed in 2009 for the fastest laptop available at that time, and is therefore unlikely to create significant CPU overheads on a 2020 computer.
- MaxMSP 8.
- MIDI faders to control MaxMSP.
- Audio interface for 1 input and four outputs.
- Mixer with three mic-inputs, four line-inputs, 4-6 post-fader outputs and one aux pre-fader output (see setup and routing options below).
- Concert loudspeaker system of 4 to 6 loudspeakers (see setup and routing options below).

Note: the computer materials are at a sample rate of 44.1 kHz. To obtain the computer materials, please contact at www.natashabarrett.org.

Guitar Notation

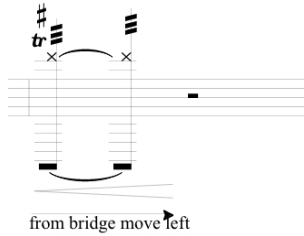
Opening preparation: Press small balls of Blu-Tack or similar, approximately 4 mm in diameter, around the strings approximately 3 mm behind the frets specified below. To find the exact position some experiment is needed, as the result is different for each instrument. Ensure that the 'open string' moves freely without buzzing. It may help to pinch the ball such that the main mass of Blu-Tack is sticking up above the string. The sounding result is different from a normal harmonic.

String-1, fret 18
String-2, fret 13
String-3, fret 17
String-4, fret 17
String-5, fret 15
String-6, fret 13

“Pull-off Blu-Tack” with Bartok *pizz* action (and therefore also removing the preparation).

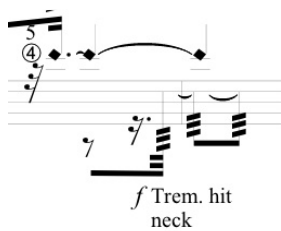
“LH”: left-hand.

Small note heads: fast and always in left-hand slur without right hand re-articulation.



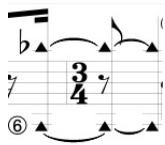
Lower note: tremolo percussive sound using thumb and ring finger on the body of guitar above the sound-hole. Motion from bridge to the left.

Upper note: Trill with right hand hammer-on

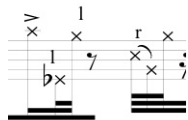


Lower note: tremolo percussive sound using thumb and ring finger above and below guitar neck.

Upper note: sustained.

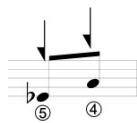


Finger specified pitches, dampen the other strings with left hand, hit the bridge to make the pitches resonate.



Hammer-on, l=left hand, r = right hand.

When no hand is specified use left hand or as it comes naturally.



Finger note as written but pluck string on the left side of the left hand with the right hand. The resulting pitch is **not** the written note.

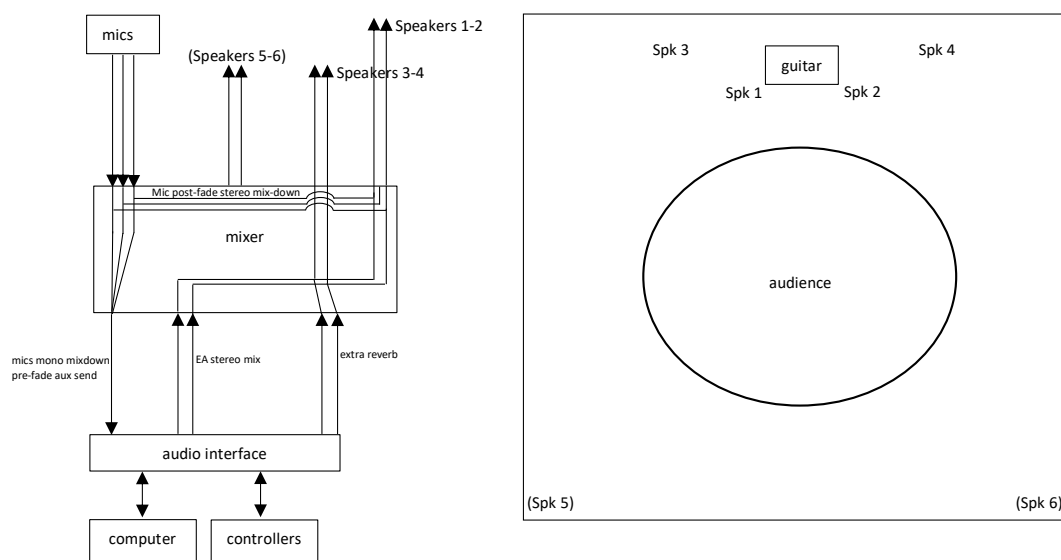


Heavily dampen note (not in normal *pizz* style)



Touch string as if playing a harmonic on the first note that comes naturally under the hand on the 6th string. The result should be a dampened ‘clonk’ sound with harmonic overtones.

Signal routing and loudspeaker setup options



From the computer, channels 1-2 contain EA materials. This is a stereo signal routed to speakers 1-2 and 3-4, at approximately the same volume for both speaker-pairs. These channels can also be routed to optional speakers 5-6 at a lower volume. Speakers 5-6 may optionally point towards the walls to create room reflections rather than a direct sound.

Channels 3-4 contain extra reverb. The level is controlled from the computer and the amount used will depend on the real acoustics of the concert space. This is a stereo signal routed to speakers 3-4 (and 5-6) only.

The live microphones are mixed to stereo, and sent post-fader to speakers 1-2. The microphones are also mixed to mono and sent to the computer (see below).

The guitar and computer volume should be balanced throughout.

Computer instructions

- Use a full version of MaxMSP-8.
- Copy all materials into one folder.
- Launch MaxMSP-8
- Open the main Max-patch: "Deconstructing_dowland-live_max8-44100_wav.maxpat"
- Check for any errors in the Max Console and solve these before going further. If the work has been correctly copied there should be no errors. Also check the console in the first run-through for any warning messages.

The computer part is a MaxMSP patch controlled by a dedicated performer who is not the guitarist nor a normal sound technician. The computer performer triggers consecutive cues in synchronization with the guitarist. These points are indicated in the score by the marks T1, T2... to T56. The computer performer should be able to read complex notation and rehearse with the guitarist prior to the performance. The computer performer should be in visual contact with the guitarist, and be in a suitable location to hear the sound balance.

The guitarist should not attempt to trigger the computer processes via a foot pedal as the score is too complex and errors are likely to occur.

Contents of the computer part

The computer processes consist of the following:

- The playback of pre-made electroacoustic sounds, where one sound is triggered for a given T-point. Note that sound-files overlap.
- Attack detection for automatic synchronisation of short electroacoustic sounds.
- Real-time cross synthesis, filtering and reverberation.
- Sampling of the live guitar for use in real-time cross synthesis later in the score.

The score contains a brief description of the live electronics for each T-point.

Audio processing setup: MaxMSP patch section 1

- Press the 'open' button to reveal the 'Audio Status' window.
- Select your audio interface as the input and output device.
- Status information should have automatically loaded. If not, manually change to these values:
 - Sample rate: 44100 Hz
 - I/O vector size: 128
 - Signal vector size: 64
 - Scheduler in Overdrive: ON
 - Audio Interrupt: OFF
- The audio outputs are by default routed to interface outputs 1-4, and the input to interface input 1. To change these channels, open out of 'presentation mode' and edit the adc~ and dac~

Controllers setup: MaxMSP patch section 2

- Press the open button to reveal the controller setup. The default setup is for a Novation LaunchcontrolXL. Any MIDI controllers can be used.
- Follow the on-screen instructions.

Microphones setup

- Two condenser microphones are positioned as close as possible to the guitar, one covering the fretboard, one covering the sound-hole.
- One miniature microphone (DPA 4060) is fixed under the strings close to the sound-hole, to achieve a high amplification of quiet sounds without feedback.
- Three microphones are connected to the mixing desk for phantom power and EQ. The microphone signals follow two paths:
 - a post-fade mix is sent to the mix output and to speakers 1-2
 - a pre-fade mix is sent to an aux output and into the audio interface.

NOTE: First EQ the mics and create a good mix via the mic input gains while listening to the post-fade mix over the loudspeakers. Then send a mono version of this mix, pre-fade, to the audio interface via the aux output.

- Ask the guitarist to play bars 39-41. Set the pre-fade aux output to the level indicated in MaxMSP patch section 3a.

- Ask the guitarist to play bars 39-41. Set the level of the compressed signal routed to live processing in MaxMSP patch section 3b.
- After setting the input level, the microphones must not be moved and the guitarist should be in the same position. If in doubt, take a photo.

Calibrating the computer

1. Calibrating auto-attack detection: MaxMSP patch section 4.

Ask the guitarist to play bar 12. Change the value until the yellow button flashes only once on each articulation. This value should be in the range 30-50. Next, ask the guitarist play bar 74. Change the value until the yellow button flashes once on each articulation. This value should be in the range 10-20. Save the patch ready for the concert.

2. Check the cross-synthesis at T24 to find a good volume (without distortion but clearly audible).



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⑤ = 1/4 b (not notated)
 ⑥ = Eb; ① = 1/4 # (not notated)

♩ = 50
 Preparation: Blu-Tack balls (until bar 12)

Guitar *mf*

Computer

Gtr. *mf*

cmp

f from bridge move left

f Trem. hit neck

mf

♩ = 40

Gtr.

cmp

T1 (Manual trigger pre-prep sound, 33 seconds)

pull-off Blu-Tack with Bartok pizz

slide RH

① ② ④ ⑥ ⑤

Gtr. *mp* *f* *sfz* *sfz* *sfz* *sfz* *sfz* *f* (*sul pont*)

cmp

T2 (Activate auto trigger pre-prep sound)

molto vibrato

♩ = 50
 (♩ = 100)

Gtr. *mp*

cmp

T3 T4 T5 T6 T7 T8

(Manual trigger pre-prep sound for T3-T23. Accurate synchronisation required.)

Gtr.

cmp

T9 T10

♩ = 40
 (♩ = 80)

Gtr.

cmp

T11 T12 T13 T14

♩ = 40
(♩ = 80)

25

Gtr. *mf* *f*

cmp

T15 T16

28

Gtr. *f* *mf* *f*

cmp

T17 T18

(clear and articulated)

31

Gtr.

cmp

33

Gtr.

cmp

T19 T20 T21

♩ = 30
♩ = 60
♩ = 40

36

Gtr.

cmp

T22 T23

♩ = 120

39

Gtr. *f*

cmp

T24 (Cross synthesis between live guitar and pre-prep sound)

43 *molto vib.*

Gtr.

cmp

T25 (Cross synthesis between live guitar and pre-prep sound)

46 *molto vib.*

Gtr.

cmp

50 *molto vib.* $\text{♩} = 100$ *mf* $\text{♩} = 80$ (clear hammer-on)

Gtr.

cmp

T26 (Cross synthesis between live guitar and pre-prep sound. Auto stop after 8 seconds.)

55

Gtr.

cmp

T27 (Manual trigger pre-prep sound, 31 seconds)

60 *f (subito)* *sfz* *sfz* *sfz* *sfz*

Gtr.

cmp

63 *retune in gliss* *mp (subito)*

Gtr.

cmp

66

Gtr.

cmp

T28 (Manual trigger pre-prep sound, 16 seconds)

69

Gtr. *f* *mf*

cmp

72

Gtr. *tr*

cmp

♩ = 50

NOTE: fingered pitch is not the sounding pitch

♩ = 50

74

Gtr.

cmp

T29 (Activate auto trigger pre-prep sound)

T30 (Activate auto trigger pre-prep sound)

T31 (Activate auto trigger pre-prep sound)

T32 (Manual trigger pre-prep sound, 5 seconds)

78

Gtr.

cmp

T33 (Manual trigger pre-prep sound, 24 seconds)

81 (check tuning, take time needed)

♩ = 100

Gtr. *f*

cmp

83 *sul tasto* *mp*

Gtr. *f* *Pizz*

cmp

T34 (Manual trigger pre-prep sound, 21 seconds)

85 *nat.* *mp*

Gtr. *f*

cmp

87 *Gtr.* $\text{♩} = 90$
cmp $\text{♩} = 90$
sul tasto
p

89 *Gtr.* $\text{♩} = 90$ *pizz*
cmp $\text{♩} = 90$ *pizz*
 T35 (Manual trigger pre-prep sound, 27 seconds)

91 *Gtr.* $\text{♩} = 100$
cmp $\text{♩} = 50$
gentle

93 *Gtr.* $\text{♩} = 100$
cmp $\text{♩} = 50$ *legato (as possible)*
pizz
molto vibrato
sfz
 T36 (Manual trigger pre-prep sound, 12 seconds)

96 *Gtr.* $\text{♩} = 100$
cmp $\text{♩} = 50$
sul tasto
p
ff
 Detune
 ⑥ = Eb;
 ① = 1/4 # (not notated).

100 *Gtr.* $\text{♩} = 100$
cmp $\text{♩} = 50$
 T37 (Start record)

103 *Gtr.* $\text{♩} = 100$
cmp $\text{♩} = 50$
mf

106

Gtr. *sfz*

cmp

108

Gtr. *sfz*

cmp

T38 (Stop record)

111

Gtr. *f*, *mp*, *sfz*

cmp

T39 T40 (Cross synthesis of live guitar and recorded section)

(Manual trigger pre-prep sound, 2 seconds)

116

Gtr. *sfz*

cmp

120

Gtr. *sfz*

cmp

T41 (Manual trigger pre-prep sound, 4 seconds)

T42 (Manual trigger pre-prep sound, 5 seconds)

124

Gtr. *f*, *mp*, *f*, *mp*

cmp

T43 (Manual trigger pre-prep sound, 7 seconds)

from bridge move left

129

Gtr. *molto sul tasto*, *mf*, *f*

cmp

T44 (Manual trigger pre-prep sound, 59 seconds)

T45 (Manual trigger pre-prep sound, 4 seconds)

T46 (Manual trigger pre-prep sound, 4 seconds)

19 (with r-hand thumb)

from bridge move left

132

Gtr. *f*

cmp

from bridge move left

T47 (Manual trigger pre-prep sound, 5 seconds)

T48 (Manual trigger pre-prep sound, 7 seconds)

135

Gtr. *mp*

cmp

tr (LH)

T49 (Manual trigger pre-prep sound, 81 seconds)

T50 (Manual trigger pre-prep sound, 14 seconds)

Trem. hit neck

138

Gtr.

cmp

hit top of neck

from bridge move left

from bridge move left

move dampening / pizz hand from right to left

T51 (Manual trigger pre-prep sound, 12 seconds)

141

Gtr.

cmp

Re-tune: ⑥ = Eb (quickly, but take time needed)

♩ = 100

T52 (Cross synthesis between live guitar and pre-prep sound)

143

Gtr.

cmp

T53 (Cross synthesis between live guitar and pre-prep sound)

146

Gtr.

cmp

150

Gtr.

cmp

art harm 10

T54 (Cross synthesis between live guitar and pre-prep sound)

154

Gtr.

15 12

5:4

5:4

mp

3/4

5/4

3/4

4/4

CII

2

9

6

7

0

T55 (Cross synthesis between live guitar and pre-prep sound)

158

Gtr.

8

0

11

8

11

T56 (Cross synthesis between live guitar and pre-prep sound)

161

Gtr.

VII

CIII

3

3:2

p

2/4

165

Gtr.

5:4

5

sul tasto

molto sul tasto

