

Gabriel Mălăncioiu

Shùdi

for flute and live-electronics

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Program note

Shùdi is the name of a flute used in Ancient China. The connections of this piece with an archaic musical culture are suggested by the extreme limitation of the pitches used in some sections as well as by the usage of the natural sounds from the harmonic series. The bridge to our times is realized by the electronic component, used to enhance some psychoacoustical effects. One of the main idea of using electronics in that piece is to achieve an effect called “binaural beat”, known for centuries by the ancient buddhist monks and rediscovered in our times by scientific researchers. Binaural beats are apparent sounds, the perception of which arises in the brain for specific physical stimuli. The effect on the brainwaves depends on the difference in frequencies of each tone, for example, if 400 Hz was played in one ear and 410 in the other, then the binaural beat would have a frequency of 10 Hz.

The boxed numbers which appear under the flute part are the electronic events generated using a Max Msp patch. Each event will be released by pressing the Space bar.

1	binaural beat using the following frequency shift: left - 5 Hz, right +5 Hz
2	stop event 1
3	binaural beat using the following frequency shift: left +10 Hz, right -10 Hz
4	stop event 3
5	cloud of sounds follow the given melodic contour
6	stop event 5
7	add a tremolo effect, with a little delay
8	stop event 7
9	create sound waves and add distorsion, imposing the tempo on the flute player
10	fade out event 9

The contrasting, darker side of the piece is enhanced by the electronic events 5 and 9

Installation instructions

1. - getting Max/MSP

You can find MaxMSP from the website.

Go to: <http://www.cycling74.com/downloads> and download Max/MSP Runtime for Windows

2. - install Max/MSP

after you have downloaded the application, click on the installer and follow the on-screen instructions.

3. - copy the max patch to your computer

COPY the folder called "Shudi Patch Folder" onto your hard drive.

DO NOT attempt to run the patch off of the CD. You must run the patch from your own hard drive.

4. - start MaxMSP Runtime (or Max MSP)

5. - load the patch

go to FILE/OPEN in MaxMSP Runtime and OPEN "shudi.maxpat"

located in the "Shudi Patch Folder" folder.

Two speakers and a microphone are required.

Shùdi

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2011

♩=50

○ - breathy, diffuse tone quality
● - normal

Flute

4/4

harmonics

multiphonic sound

1 2 3 4
2 3 4 5

p

p

p

p

p

mf

p

5

harmonics

p

mp

p

1

accel.

1 2 3 4
2 3 4 5

1 2 3 4
2 5

1 3 4 5
2 3 4 5

♩=50

mf *p*

2

5

mf *p*

1 2 3 4
2 3 4 5

♩=60

mp *p*

3

5

mp *p* *mp*

1 2 3 4
5

mp

4

5

1 2 3 4
2 3 4 5

♩=50

f *p*

4

2/4 4/4

mp

f *mp*

4

5

1 3 4
2 3 4 5

accel.

As fast as possible

cover the embouchure hole completely with the mouth, and blow as forcefully as possible directly into the instrument

ffff p f p ff

trm whistle jet

frull. frull. frull. trm

6 ff p mf f

frull. frull. mp pp possibile

2/4 =50 4/4

7

{ 1 2 3 4 / 2 3 4 5 }

5

bisbigliando (timbral variations)

3/4

1 2 3 4
2 3 4 5

1 2 3 4
2 5

1 2 3 4 5
2 3 4 5

1 2 3 4
2 5

1 3
2 5

1 2 3 4
2 5

1 2 3 4
2 3 4

1 2 3 4
2

1 3
5

2/4

4/4

4/4

8

4/4 electronic's tempo ♩=60

forceful ingrasive sound

IN IN

f

<ff

f

fff

9

whistle jet

IN IN

p

ff

mf

f

tr gliss.

whistle jet

p *ff* *mf* *f* *f* *ff* *fff*

frull. IN *tr*^b

Detailed description: This staff contains a sequence of notes and rests. It starts with a dynamic marking of *p* (piano) and *ff* (fortissimo) with a hairpin. The notes are followed by *mf* (mezzo-forte), *f* (forte), *f* (forte), *ff* (fortissimo), and *fff* (fortississimo) dynamics. There are markings for 'frull.' (trills) and 'IN' (instruments) with a *tr*^b (trill) symbol.

IN IN IN *tr*^b *tr*^b whistle jet

mf *p* *f*

10

Detailed description: This staff continues the musical piece. It features three 'IN' markings, two *tr*^b (trill) markings, and a 'whistle jet' marking. Dynamics include *mf* (mezzo-forte), *p* (piano), and *f* (forte). A box with the number '10' is positioned below the staff.

$\text{♩} = 50$

p

Detailed description: This staff begins with a tempo marking of $\text{♩} = 50$. It contains notes, rests, and dynamic markings, including *p* (piano). There are also some graphical elements resembling piano keys or fingerings above the notes.

Detailed description: This staff continues the musical notation with notes, rests, and dynamic markings. It includes graphical elements resembling piano keys or fingerings above the notes.

Detailed description: This is the final staff on the page, containing musical notation with notes, rests, and dynamic markings. It includes graphical elements resembling piano keys or fingerings above the notes.

The first staff of music features a treble clef and a key signature of one flat. It begins with a melodic phrase of two eighth notes. The main body of the staff is dominated by a long, sweeping slur that encompasses a series of chords, each marked with a small circle above it. The chords are arranged in a descending sequence. Below the staff, there are several groups of horizontal lines representing bass clef chords.

The second staff continues the musical piece. It starts with a half note followed by a series of chords under a slur. A melodic line with eighth notes and a slur appears in the middle of the staff. The piece concludes with a few more chords and a final note.

The third staff features a long, continuous slur over a series of chords. The chords are marked with small circles. The staff ends with a few notes and a final chord.

The fourth and final staff on the page shows a long slur over a series of chords. The chords are marked with small circles. The staff concludes with a few notes and a final chord.