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Clarinet and Shadow

Jacob Sachs-Mishalanie

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CLARINET AND SHADOW

by

JACOB SACHS-MISHALANIE

A composition submitted to the Graduate Faculty in Music in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

2022

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This manuscript has been read and accepted by the Graduate Faculty in Music to satisfy the dissertation requirement for the degree of Doctor of Philosophy.

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THE CITY UNIVERSITY OF NEW YORK

ABSTRACT

Clarinet and Shadow

by

Jacob Sachs-Mishalanie

Advisor: Douglas Geers

Clarinet and Shadow is a musical composition for clarinet and electronics. In the piece, live electronics pitch shift the sound of the clarinet to create harmonies and add the sound of an artificial instrument. The electronics are the clarinet's shadow: unreal, always there, and tied to its movement.

Clarinet and Shadow

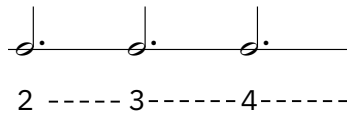
Jacob Sachs-Mishalanie

Composed in Spring 2021 for Gleb Kanasevich
In residence with the CUNY Graduate Center Composers

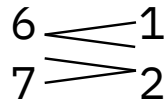
Program note: In *Clarinet and Shadow*, live electronics pitch shift the clarinet to create harmonies and add the sound of an artificial instrument. The electronics are the clarinet's shadow: unreal, always there, and tied to its movement.

Electronics Notation: The electronics include sixteen parameters to be adjusted live during a performance. Parameters 1-13 adjust the volume of a pitch shifted signal of the live clarinet. Parameters 14-15 adjust the volume of a droning artificial clarinet. Parameter 16 adjusts the pitch of the artificial clarinet. The harmonies created by the clarinet and the electronics are notated (in C) in the staves labeled "electronic sound." Parameter adjustments are notated in the staves labeled "electronic control."

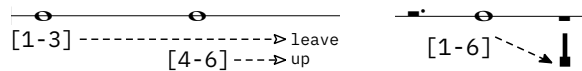
Parameters 1-15 should be silenced most of the time. In the score, a note with a number beneath it indicates that this parameter should be raised to full volume. Each number is followed by a dotted line that indicates how long it should remain at full volume. At the end of the dotted line, the parameter should return to silence. The attack and release of each parameter adjustment should be smooth and quick.



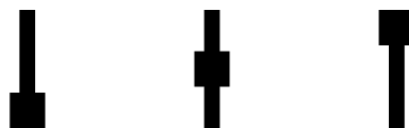
When dotted lines are replaced by a crescendo/decrescendo, the parameter changes should be a gradual crossfade.



At the beginning of the piece and sections B and D, the electronics will follow the rhythm of the clarinet. In sections A and C, pitch shifted channels will be at full volume for long periods of time. For example, in measure 6, parameters 1-6 are brought to full volume, only returning to silence in measure 22. At the ends of these sections, a diagonal dotted arrow indicates that many channels are brought to silence together. In these moments, each fader can be gradually silenced one at a time, ad lib.



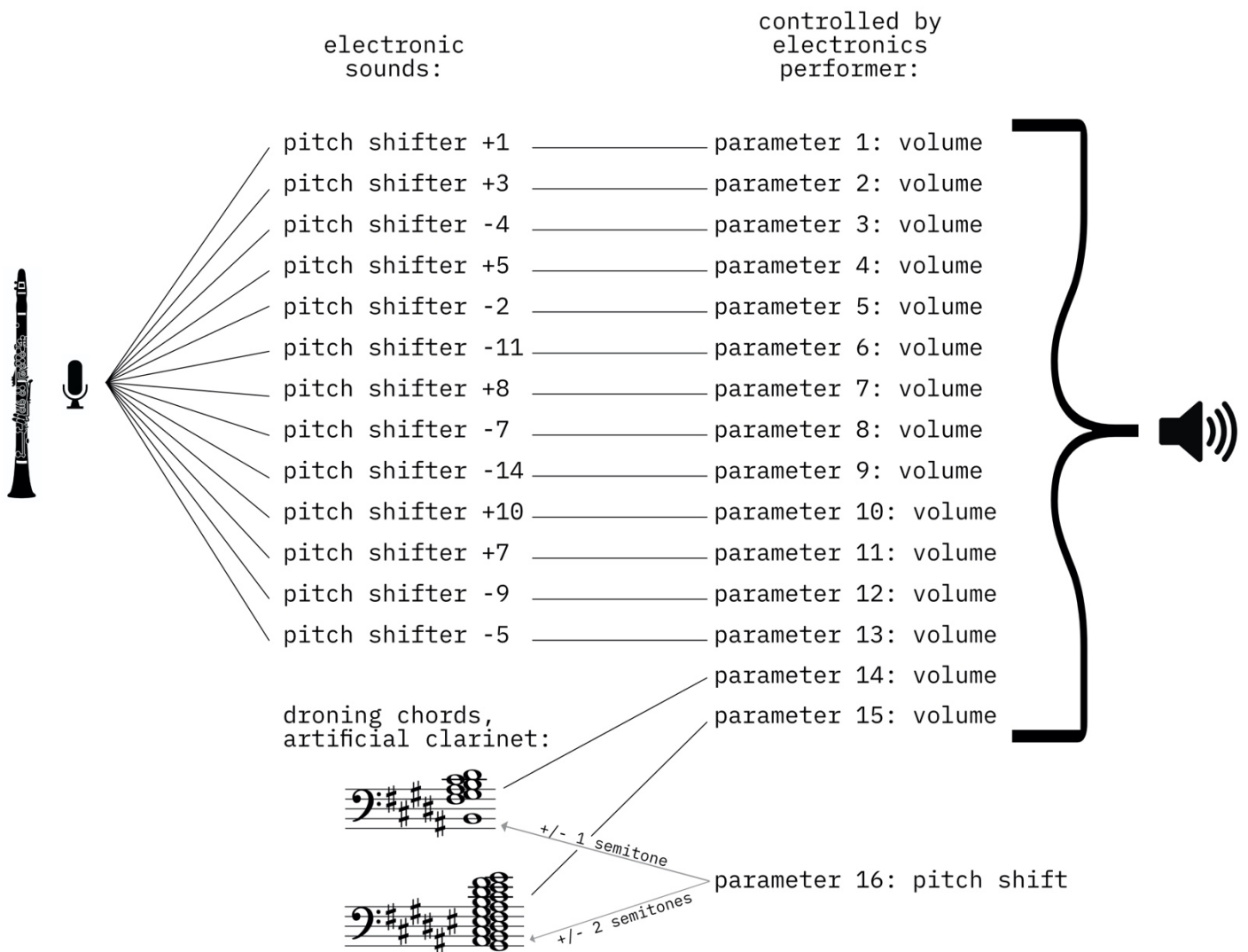
Parameter 16 is notated differently. This parameter will rest in one of three positions: low, middle, or high. Gradual transitions between these positions will create slow glissandi in the artificial clarinet sound. The position of parameter 16 is notated by the following symbols. Gradual transitions are indicated by diagonal dotted arrows.



Electronics Setup: The clarinet should be close mic'd. The loudness of the acoustic clarinet should be balanced with the electronic sounds. This may require the dry clarinet sound to be included in the final mix along with the electronic sound.

The electronics are performed with a controller that allows for independent control of sixteen parameters. I recommend a MIDI controller with 16 faders, however other setups are possible.

The electronics can be realized in a DAW with separate channels for each electronic sound, and a controller mapped to the volume of each channel. For channels 1-13, set the input to the live clarinet microphone, and use any pitch shifter plugin. Each pitch shifter should be set to a static interval, which can be found in the diagram below. For channels 14 & 15, use a sampler plugin or a software instrument imitating a clarinet. Map parameter 16 to the pitch bend of the artificial clarinet plugin and set the pitch bend ranges accordingly, following the diagram below.



For a maxpatch, Ableton session, or any questions about the electronics, please contact Jacob Sachs-Mishalanie at jsmishalanie@gmail.com.

Clarinet and Shadow

Jacob Sachs-Mishalanie

♩ = 60

gradual & smooth, only slight dynamics

slightly separated, without full breaks between notes

clarinet
in Bb

pp ————— *p* ————— *pp* *p*

close mic'd for a warm, intimate, hyper-real sound.
sounds that emphasize physicality are encouraged: breath, air, key, instability, etc.

electronic
sound

pitch shifted clarinet

electronic
control

2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 1 ----- 3 ----- 5 ----- 6 ----- 1 ----- 3 ----- 4 ----- 5 -----
1 ----- 2 ----- 4 ----- 2 ----- 4 ----- 2 ----- 6 ----- 2 ----- 6 ----- 2 ----- 4 ----- 6 -----

[16] |

3 *sim. to bars 1 & 2*

cl

pp ————— *p*

1 --- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 1 ----- 3 ----- 5 ----- 6 ----- 1 ----- 3 -----
6 ----- 2 ----- 4 ----- 2 ----- 4 ----- 2 ----- 6 ----- 2 ----- 6 ----- 2 ----- 4 ----- 6 -----

5

cl

pp ————— *pp* ————— *p*

5 ----- 1 ----- 3 ----- 5 ----- 6 ----- 1 ----- [1-3] ----- [4-6] ----- > leave
6 ----- 2 ----- 4 ----- 2 ----- 4 ----- 2 ----- 6 ----- 2 ----- 6 ----- 2 ----- 4 ----- 6 ----- > up

A full, warm

7 30 seconds 15 seconds

c1

gliss as gradually as possible.
 sounds that distinguish the clarinet
 from the electronics are encouraged:
 instability, breaks, etc.

pitch shifted clarinet

fake clarinet

30 seconds 15 seconds

13

c1

(breathe)

16

c1

(breathe) (breathe)

20

c1

alone for the first and only time

(breathe)

> pp

23 **B** *sim. to beginning*

c1

pp

pitch shifted clarinet

7-----
8-----10-----1-----3-----5-----7-----
9-----
4-----6-----

8-----9-----1-----3-----5-----6-----1-----
10-----2-----4-----7-----2-----

c1

p

pp

3-----7-----9-----11 12 >= 1 >= 3-----5 >= 6-----
4-----8-----10-----13 >= 2 >= 4-----7-----
5-----
6-----

8-----10 1-----[2-4]-----leave
9-----[5-7]-----up
[8-10]-----

27 **C** *sim. to A*

c1

mp

pitch shifted clarinet

fake clarinet

15 -----
16 ▴ -----> ▴ 15 -----
16 ▴ -----> ▴ (16)-----▴ 1-----
[9-13]-----> leave up [3-13]

4

30 **D** *sim. to beginning*

c1

Musical score for measures 30-32. The first staff is for the Clarinet in C (C1) and the second is for the Clarinet in Bb (C2). The C1 staff shows a melodic line with dynamics *p* and *pp*. The C2 staff shows a complex harmonic accompaniment. The bass line includes fingerings: 2-3-4, 5-6-1, 9-10-11-12-13, and [3-8].

33

c1

Musical score for measures 33-35. The first staff is for the Clarinet in C (C1) and the second is for the Clarinet in Bb (C2). The C1 staff shows a melodic line with dynamics *p*, *pp*, and *mp*. The C2 staff shows a complex harmonic accompaniment. The bass line includes fingerings: 3-4-5-6-7, 8-9-10-11-12-13, and [7-12].