

Music for Contrabass & Computer

by Cort Lippe

1995

for Robert Black

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Program Notes

Music for Contrabass and Computer (1995) was written for the American bassist Robert Black, commissioned by the Festival El Callejon del Ruido Competition of Guanajuato, Mexico, and premiered there in 1996. The electronic part, which runs in Max/Msp, was originally created at the Hiller Computer Music Studios of the University at Buffalo, New York, using the IRCAM Signal Processing Workstation and Max, which was developed by Miller Puckette and whose technical support made this piece possible.

Technically the computer tracks parameters of the contrabass, such as pitch, amplitude, spectrum, density, rests, articulation, tempi, etc., and uses this information to trigger specific electronic events, and to continuously control all the computer sound output by directly controlling the digital synthesis algorithms. Thus the performer is expected to “interact” with the computer, triggering and continuously shaping all of the computer output. Some of the sounds in the electronic part come directly from the composed bass part, so that, certain aspects of the musical and sound material of the instrumental and electronic parts are one and the same. Sound material other than the bass is also manipulated via time-stretching and granular sampling. FFT-based cross synthesis, as well as other more standard signal processing such as harmonizing, frequency shifting, phasing, spatialization, etc. are also employed. The instrument/machine relationship moves constantly on a continuum between the poles of an “extended” solo and a duo. Musically, the computer part is, at times, not separate from the bass part, but serves rather to “amplify” the bass in many dimensions and directions; while at the other extreme of the continuum, the computer part has its own independent “voice”.

Duration: 13 minutes.

Performance Notes for *Music for Contrabass and Computer*

All timing markings are approximate.



within a single beat:
accelerando, ritardando, approximate division



micro-tonal trill using 3 fingers of left hand

Section 1

Nota Bene #1 (page 1, system 1)

For all of Section 1, imitate and blend with the computer as much as possible in the areas of pitch, dynamics, articulation, etc. Blending with the computer is most important in the first minute.

Nota Bene #2 (page 1, system 1)

Alternate longer non-tremolando bowing with short interruptions of tremolando bowing. Over time, in Section 1, tremolando bowing gradually takes precedence.

Nota Bene #3 (page 1, system 3)

Keep everything sounding as simultaneously as possible even though string and note alteration is constantly necessary..

Nota Bene #4 (page 2, system 2)

Less and less of open string low "E" (string IV) and open string low "D" (string II) during the 30 seconds of system 2.

Section 3

Nota Bene #5 (page 4, system 3)

Dampen strings with left hand and bow *col legno battuto* on the string(s) based on the location of the "X" marks.

Nota Bene #6 (page 6, system 1)

Dampen sound by pressing the bow against the string(s) during *col legno spizzacato* gesture.

Nota Bene #7 (page 6, system 1)

Begin *col legno spizzacato molto sul tasto* on the fingerboard and slide the bow down towards the bridge during gesture.

Nota Bene #8 (page 7, system 3)

Slide the left hand up--still dampening string(s)--during *col legno spizzacato* gesture.

Nota Bene #9 (page 10, system 1)

The high "b" should be considered the first **entry** note for Section 4. (see the indications for how to begin and end Section 4 at Nota Bene #10)

Section 4

Nota Bene #10 (page 10, after system 1)

Section 4 is “ad libitum” and should last between 3’00” and 3’30”. The computer events 1 through 5 should each last approximately 30” to 40”. Each computer event can be longer than one gesture—a gesture consists of Steps I through IV—but should always start at a “Step I”.

The performer should attempt either to play the same pitch as the computer’s fundamental pitch, or a harmonic of the computer pitch, keeping in mind that the computer pitch is not always easy to determine. The computer chooses a new pitch each time the player stops playing (i.e. when there is a silence in the instrumental part).

Each musical gesture is made up of four parts: **entry**, **tuning**, **arrival**, and **silence**.

A page with examples follows which should help in understanding how this section can be realized. The following directions apply:

Entry: After each **silence**, the performer should choose an arbitrary starting pitch and enter dynamically *dal niente*. When the performer reaches a certain loudness, the computer part will start sounding automatically.

Tuning: When the computer part starts sounding, the performer should begin **tuning** to the computer pitch. This **tuning** should be done as unobtrusively as possible by attempting to glissando towards the computer pitch in a relaxed and gradual fashion. String crossings should be as unnoticeable as possible. The duration of the **tuning** should not be increased or decreased during the section since it will mainly be influenced by the difficulty in determining the computer pitch.

Arrival: Early in Section 4, once the performer arrives at the computer pitch, he/she should crescendo quickly to *fff* and then stop playing. As Section 4 proceeds, the performer should gradually increase the duration of the computer pitch he/she is playing, and at the same time, gradually increase the variation of timbre, loudness, and bowing style of the note. Continue always making a crescendo to *fff* just before stopping. The performer is expected to increase the duration and sonic complexity of the arrival part of each musical gesture as the section unfolds. The succession of **arrivals** defines the shape of Section 4.

Silence: Once the performer stops playing the computer pitch, he/she should wait in silence for the computer part to subside into silence before starting the **entry** of a subsequent musical gesture.

(Note that the computer no longer subsides to complete silence starting with event 4, but only subsides to a very quiet dynamic level.)

The first five events of Section 4 should be spaced apart approximately every 30 to 40 seconds. The events should be advanced by the computer operator during silences (or in the “silence” part of a gesture for events 4 and 5).

Indications for how to begin and end Section 4:

Note that the first **entry** note of Section 4 is not chosen by the performer, but is the notated high “b” at the end of system 1 on page 10. (see Nota Bene #9).

Likewise, the last **arrival** gesture of Section 4 at the end of the section should be played for a much longer length of time than all other **arrival** gestures. This final **arrival** gesture is the end of the piece. The last system of page 10 gives indications for how to end the piece. (See Nota Bene #11)

Nota Bene #11 (page 10, last system)

The final **arrival** gesture of Section 4 should continue into the last score system. A crescendo from *fff* to *fffff* (or as loud as possible) should take place gradually over approximately 30 seconds during the last system. Performer should cut sound off as abruptly as possible to end the piece.

Score Interpretation

All markings in the score for string number (Roman numerals I, II, III, and IV) should be considered as one possibility amongst many. The performer is free to choose which string to play a note on, and is in no way obliged to follow the markings in the score for string number.

ad libitum

Computer enters

Computer silence

arbitrary entry pitch

gliss across strings tuning to Computer pitch

(EXAMPLE GESTURE)

arrival at computer pitch

STOP PLAYING

new arbitrary entry pitch

simile...

mp

mf

fff

WAIT FOR COMPUTER SILENCE

-EXAMPLES ONLY- TO ACCOMPANY PERFORMANCE NOTES FOR SECTION 4

Computer silence

Computer entry

gliss across strings tuning to Computer pitch

arrival

molto s.p. → sul → s.p. simile...

arbitrary entry pitch

(LATER EXAMPLE)

mp

mf

ff

mp

f

mf

fff

Computer silence

STOP PLAYING

WAIT FOR COMPUTER SILENCE

new arbitrary entry pitch

simile...

fff

TOTAL TIME FOR
SECTION 4
2'30" to 3'00"

SECTION 1

EVENT

1

(0") (10") (20") (30")

sul tasto *gliss* *molto lento* *gliss simile*

Contra-bass

*NB1 (Computer starts) *NB2

ppp sim... ppp pp

2

sempre poco *lento* *poco a poco accel*

(alternate strings slowly) *poco a poco accel, string alternation*

pp p mp

3

vib. molto, rapidamente *rapidly alternate strings I, II* *gliss*

*NB3

alternate octave harmonic and open *accel. poco a poco on I* *fap gliss*

mp mf

4

poco a poco sul pont. *poco a poco piu tremolando*

(alternate also on II between harmonic and "e") *(quick interruptions on IV)*

STOP STOP

mf f

5 tremolando sul pont. → poco a poco molto sul pont. sempre accel. gliss (2'30")

III (e) (b_e) (4_e) accel. gliss back & forth (b_e) (4_e) (b_e) (b_e) (4_e)

gliss (STOP I) sim... sim... III or II

simile... simile... f fff

*NB4 6 rall. tremolando poco a poco → non tremolando harmonics STOP gliss. (3'00")

rall. gliss back & forth poco a poco → (b_e) (4_e) sim... (b_e) (4_e) sim... (b_e) (4_e)

sim... sim... sempre tremolando sempre trem. (non trem.) II

meno a meno low "E" (T) (T) (T) (T) meno a meno low "D" poco a poco molto vibrato (stop "D") mf

(STOP "E")

SECTION 2

1 (sempre molto sul pont.) (3'10") (3'20") (3'30")

gliss. (stop trem) II

mf p mf p mp p mp p

2 (3'40") arco ~5 ~3 ~6 (3'50") ~4

poco a poco meno vibrato spizz. gliss. (non-spizz) spizz. gliss. arco (non-spizz)

mp > p mp > p mp p mf p mf p

sempre molto sul pont.

Handwritten musical score for the first system, measures 1-4. The notation includes treble and bass staves with various performance instructions and dynamic markings.

Measure 1: *spizz. & gliss.* *stacc. arco* *trem.* *mf*

Measure 2: *spizz* *& gliss* *arco* *p*

Measure 3: *spizz* *& gliss* *arco* *mf*

Measure 4: *gliss* *spizz* *arco* *p*

Annotations: *~6*, *~4 (4'00)*, *(4'10)*, *~6*, *~4*, *(stop trem.)*, *~6*

Handwritten musical score for the second system, measures 5-8. The notation includes treble and bass staves with various performance instructions and dynamic markings.

Measure 5: *(arco)* *simile* *p*

Measure 6: *simile* *mf*

Measure 7: *sim.* *p*

Measure 8: *sim.* *mf*

Annotations: *(stop trem.)*, *~7*, *~5*, *3*, *(4'30)*, *sim.*, *~7*, *~5*

Handwritten musical score for the third system, measures 9-12. The notation includes treble and bass staves with various performance instructions and dynamic markings.

Measure 9: *Sim.* *p*

Measure 10: *Sim.* *mf*

Measure 11: *3* *~3* *<f> p*

Measure 12: *sim.* *f*

Annotations: *3*, *(4'40)*, *~7*, *~6*, *6*

Handwritten musical score for the fourth system, measures 13-16. The notation includes treble and bass staves with various performance instructions and dynamic markings.

Measure 13: *~7* *~5* *mp*

Measure 14: *Sim.* *<f> mp*

Measure 15: *~7* *~5* *f*

Measure 16: *~7* *~5* *mf*

Annotations: *(5'00)*

(5'00") *sempre molto sul pont. spizz. & gliss*

arco (5'10") 7/0

(arco) (molto vib.) (rall. trem.)

mf f>mp f>mp f>mp f mf f>mp f>mp

~7 ~5

I II I

SECTION 3

1

trill (rit. trill) (5'20") ~6 ~5 (5'30") ~7

(vary pressure) spizz & gliss arco gliss. molto lento spizz

mf > p f III > mf <f> mf > pp f III ~6

*NB5 (5'40") gliss molto lento

col legno, batt. spizz arco

f IV ff IV ~8 III ~7 > mf I

2

spizz. & gliss. 4/3 (5'50") 3/2 simile spizz. & gliss. (5'55")

col legno, batt.

f I II III IV # IV (5'50") ff f I

non s.p. arco 3
s.p. non s.p. s.p. non s.p.
spizz. & gliss. molto s.p. arco a.l. (6'10") batt.

5/3

(I)

f > mp f > mp f > mf > f

ff

sempre s.p. arco (non batt.) non a.l. spizz. & gliss.

arco tr. rall tr. stop trill (6'20")

gliss

3

spizz. & gliss.

ff f

f

sempre s.p. 3

sempre spizz. arco (6'30")

tr M tr M

a.l. batt. arco non batt. arco molto sul tasto

gliss

f p ff mf > pp

molto s.p. spizz & gliss 3

rit. spizz. & gliss

arco (6'40") sempre tr M

rit trill stop trill (6'50")

sempre molto s.p. spizz & gliss (6'52")

4

f III III

mf mp

f 3

7

S.p.
(2) PIZZ. — c.l. spizz arco

7'50"

(stop tr.)

start trem.

no gliss

(stop trem.)

gliss

IV/III III/II II/I

ff mp

8

sempre gliss (stop gliss)

8'00"

vary bow pressure

c.l. batt. PIZZ. →

I/II II/III III/IV

f ff f

9

*(NB8)

-(PIZZ.) — (8'10") — c.l. spizz.

sempre s.p. arco

gliss

poco

vary bow pressure

ff (slide left hand up) mp

f

10

(sempre gliss.) (8'20")

c.l. batt. c.l. spizz PIZZ. — c.l. spizz.

11

(no gliss)

bow damp.

3

3

6

f ff f ff

sempre s.p. arco gliss. (9'00") c.l. batt. c.l. spizz. -Pizz.→

8 p ff bow damp. mf

(Pizz.) sul tasto c.l. spizz. (9'10")

8 5 6 7 ff (slide l.h. up)

(c.l. spizz.) (?) batt. PIZZ

8 and bow gliss ff

6 6 7 6 6

decresc. poco a poco

(Pizz.) (9'20") c.l. spizz. PIZZ.

8 molto bow gliss mf ff f decresc. poco a poco

5 3 3 3

molto rall. poco a poco a poco →

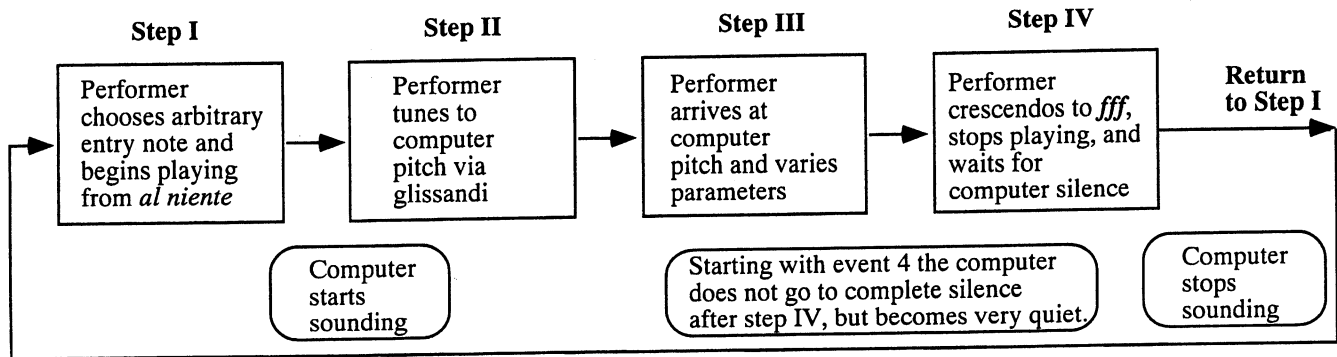
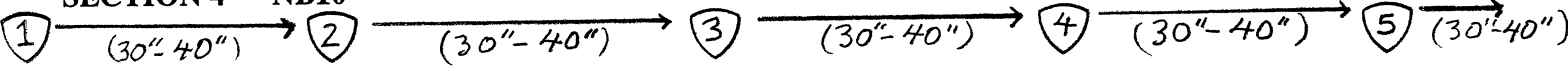
(PIZZ.) (9'30") (9'40") (9'50")

*NB9 arco

molto *ppp*

pp l.v.

SECTION 4 *NB10



duration:
2'30" to 3'00"

→ ⑥ *NB11 ————— ≈30" ————— ⑦ ————— ⑧/⑨

sempre trem. et sempre s.p.

fff *fffff* (≈13'00")

when Computer is silent

SUBITO! SILENCE!

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