Music for Cello & Computer

by Cort Lippe

1999

Commissioned by the Fynske Musikkonservatorium of Odense, Denmark

Cort Lippe

Program Notes

Music for Cello and Computer (1999) was commissioned by the Fynske Musikkonservatorium of Odense, Denmark, and premiered there in 2000. The electronic part was created at the Hiller Computer Music Studios of the University at Buffalo, New York using Max/Msp, which was originally developed by Miller Puckette and whose technical support made this piece possible. Technically the computer tracks parameters of the cello, 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 the computer output. Material is manipulated via time-stretching, granular sampling, FFT-based cross synthesis and analysis/resynthesis, well as by other more standard signal processing techniques such as harmonizing, frequency shifting, phasing, spatialization, etc.
Duration: 12 minutes.

Performance Notes

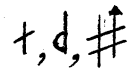
Music for Cello and Computer is notated on systems containing four staff lines, one for each string of the cello.

The *fermata* signs found after each double bar-line in the score indicate rests (silences) which are explained below.

Part A should be played *arco* throughout and as *sul ponticello* as possible, using as light a bow pressure as possible.

Part B is almost entirely *pizzicato*. Some *pizzicato* parts can be played with either the left or right hand. Some require plucking with the right hand behind the left hand fingers between the nut and the depressed strings.

Part C should be played *arco*, beginning *sul tasto* and gradually moving to *molto sul ponticello*. Additionally, it should begin *senza vibrato* and move gradually to *molto vibrato et vibrato rapido*.



quarter-tones (approximate)

tremolando bowing

grace note

Performance Notes—continued

Music for Cello and Computer has three parts: A, B, and C. Each part is divided into a number of "cells", termed A-cells, B-cells and C-cells. Cells are delineated by double bar-lines. Parts A and C are performed in linear fashion, while part B is performed in non-linear fashion as described below. The piece is divided into two global repeats: Repeat I and Repeat II.

The overall form of the piece is:

|: A [B] C :|

Repeat I
All the A-cells of part A should be played in the order in which they are notated. A-cells should be repeated between one and three times. Rests between A-cells and between repetitions of individual A-cells should be as long or longer than the cells themselves. When part A is completed, the player should move to part C and perform it in the same manner as described for part A.

During the performance of parts A and C, B-cells should be freely interspersed from part B either between A/C-cells and/or repetitions of A/C-cells. B-cells do not need to be played in any particular order. The same B-cell can be chosen multiple times. B-cells, when chosen, can also be repeated between one and three times, but this is not obligatory. Rests between B-cells and between repetitions of individual B-cells are optional (note that the *fermata* signs in part B are enclosed in brackets). B-cells can serve as interruptions of A and C-cells. Additionally, certain B-cells can be played at the same time as A and C-cells are being performed. (This is possible because some of the pizzicato B-cells can be performed with either the left or right hand.)

Overall in Repeat I, the total time of silence should be as great or greater than the total time of sound, and dynamics should be static—never greater than ***PP***.

Repeat II
Once the last cell of part C is completed in Repeat I, the player should return to part A and follow the same directions given for Repeat I with two exceptions:

(1) rests should be shorter so that overall for Repeat II, the total time of silence should be less than the total time of sound, and
(2) dynamics should be more variable, while not exceeding ***p***.

Repeat I should be approximately twice as long as Repeat II (mainly because of the use of longer silences in Repeat I).

The total duration for the entire piece should be approximately 11 to 13 minutes.

Performance Notes—continued

In performing **Music for Cello and Computer**, the player should let the activity of the computer part influence their performance.

It is suggested that an "introductory" section could include the first 4 events of the computer part in the following way:

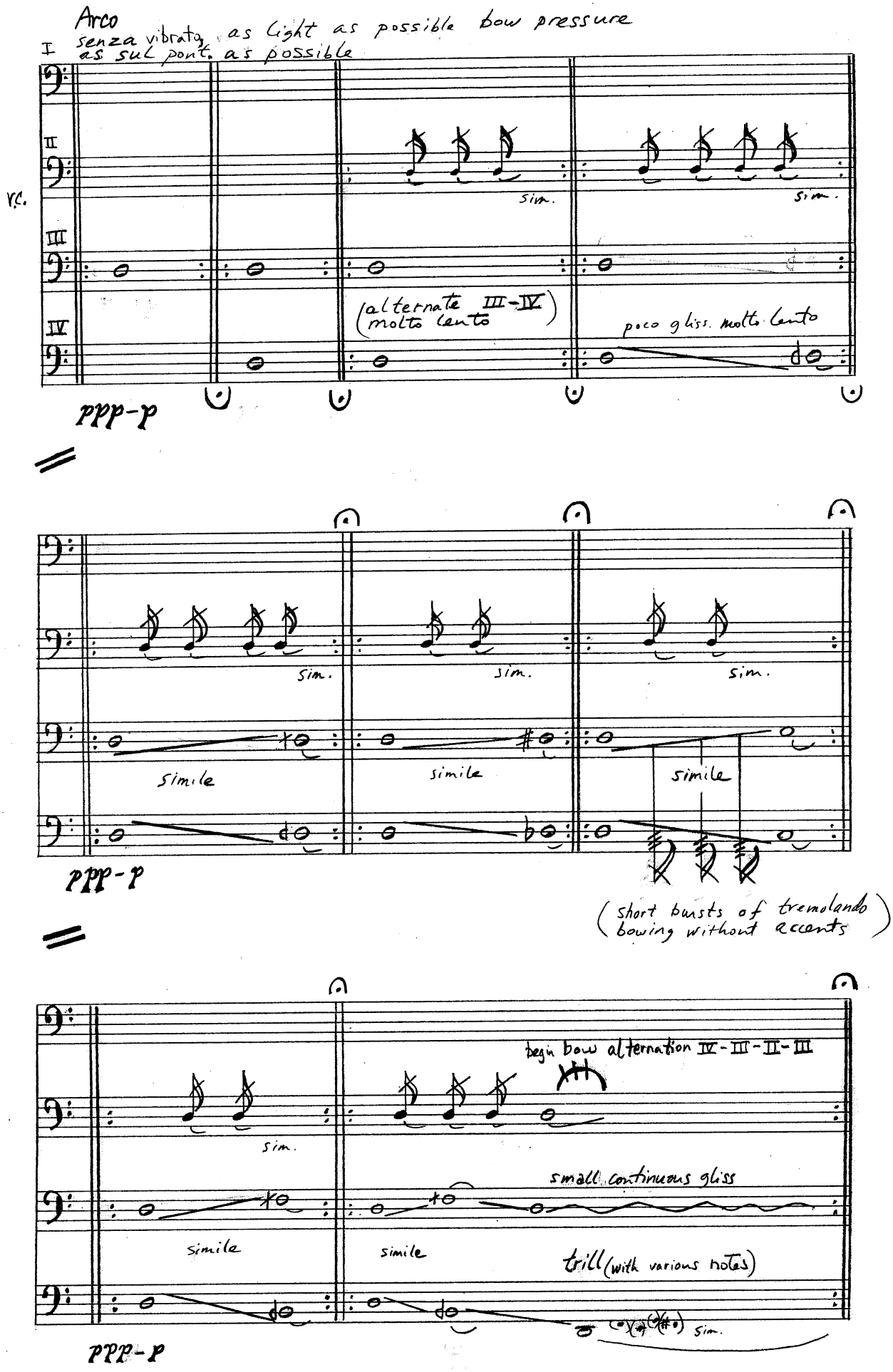
Event 1: the cellist should not play at all. The chord played by the computer can be used as a signal to the cellist that the computer part has started.

Event 2: the cellist can wait until the second chord of the computer part has sounded (signaling event 2) and then play ONLY the first cell of part B a single time.

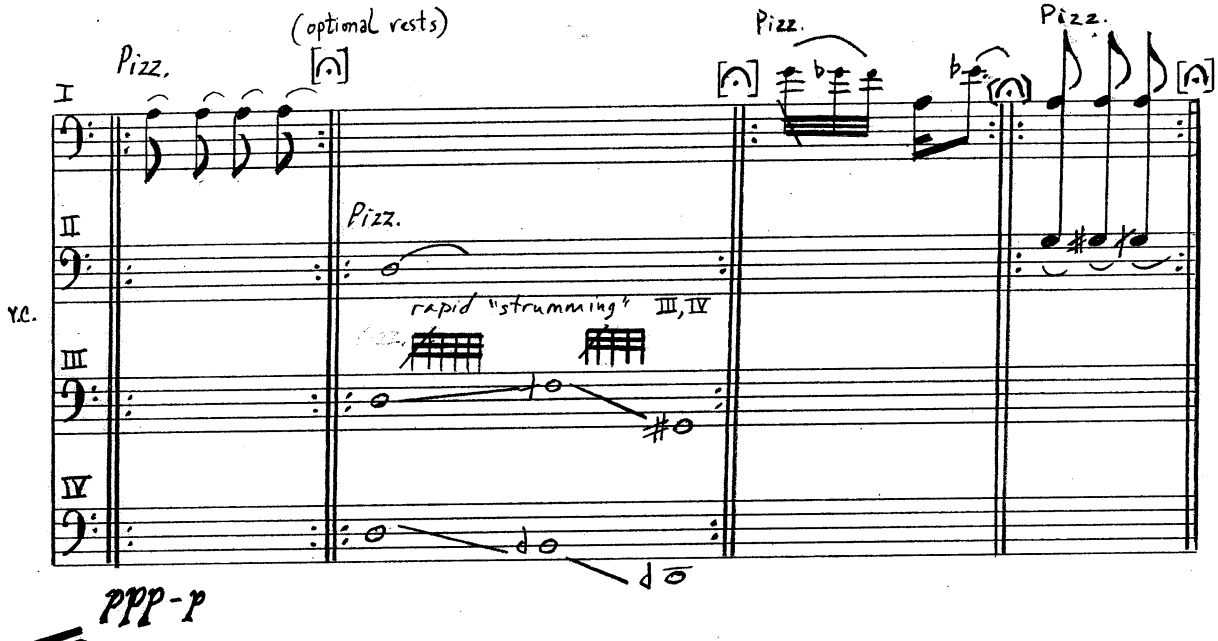
Event 3: again, the third chord of the computer signals the third event. The cellist can again play only the first cell of part B a single time, perhaps eliding the beginning of the cell with the ending of the computer chord.

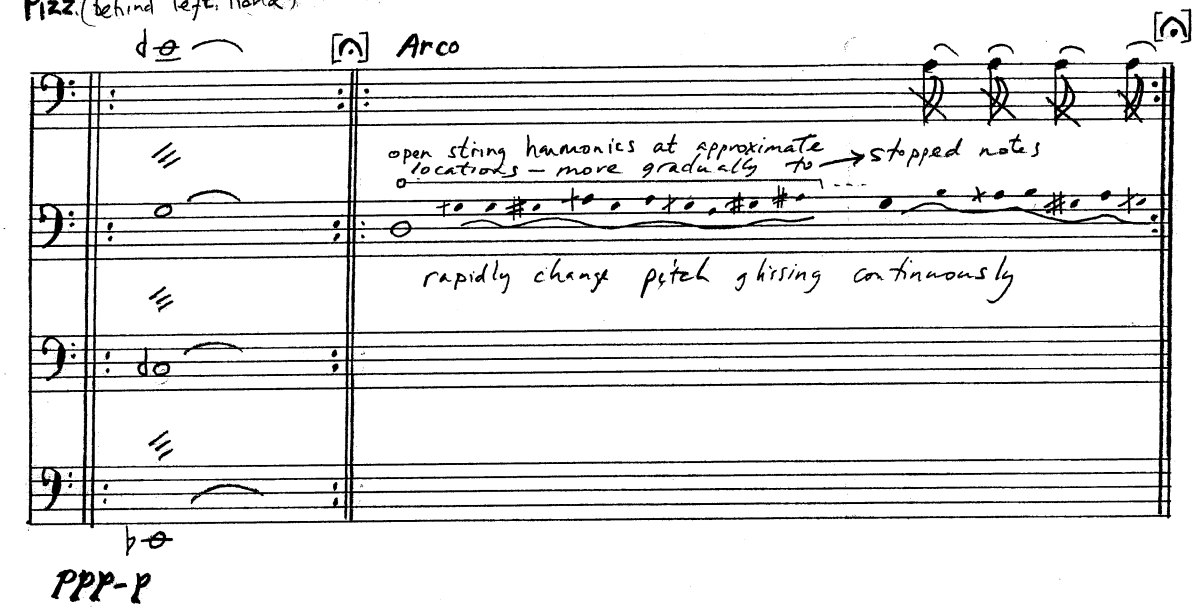
Event 4: the fourth chord of the computer signals the fourth event. The cellist can play the first cell of part B more than once here.

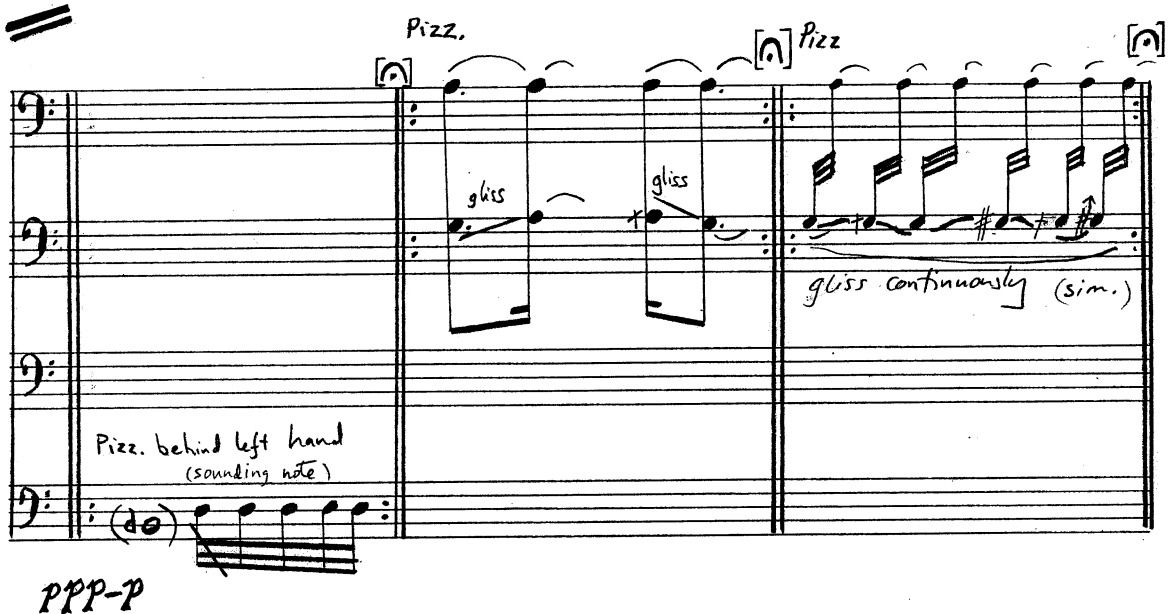
Event 5: from the fifth chord, the cellist should follow the playing instructions on the previous page. This ends the "introductory" section. From here, the player should listen closely to the computer part and allow it to influence their interpretation of the score.


Arco
senza vibrato, as light as possible bow pressure
as sul pont. as possible
I
II
III
IV
Vc.
sim.
sim.
(alternate III-IV molto lento)
poco gliss. molto lento
ppp-p
simile
simile
simile
sim.
sim.
sim.
ppp-p
(short bursts of tremolando bowing without accents)
begin bow alternation IV-III-II-III
small continuous gliss
simile
simile
trill (with various notes)
sim.
ppp-p

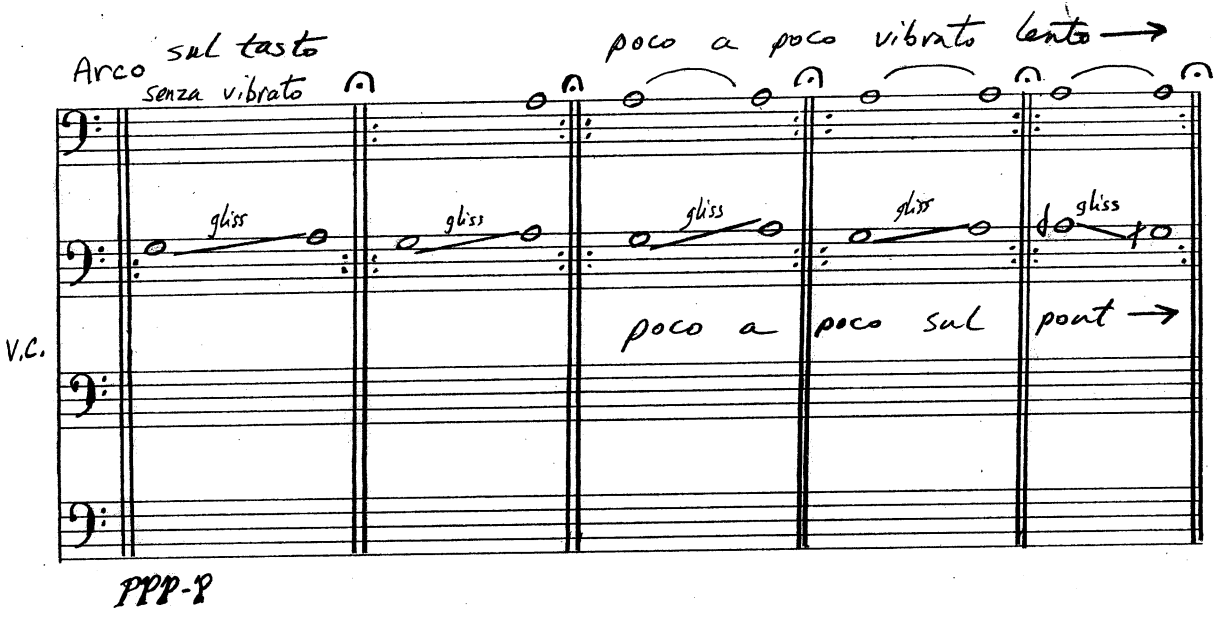
- part A -

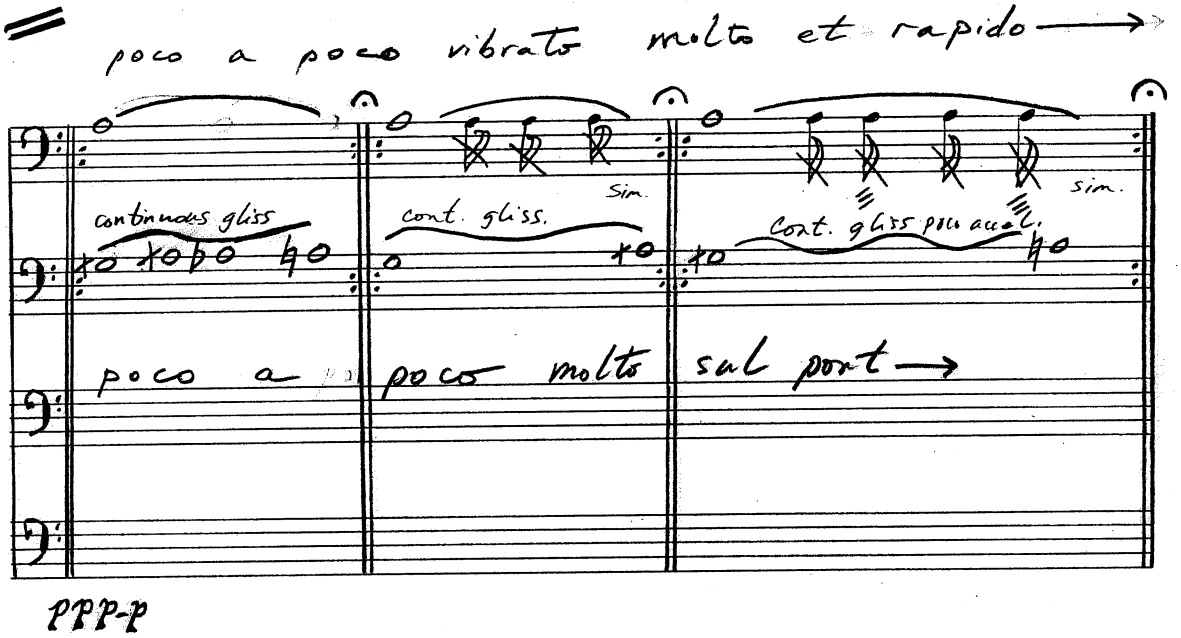

(optional rests)
Pizz.
Pizz.
Pizz.
Pizz.
I
II
III
IV
rapid "strumming" III, IV
Vc.
ppp-p

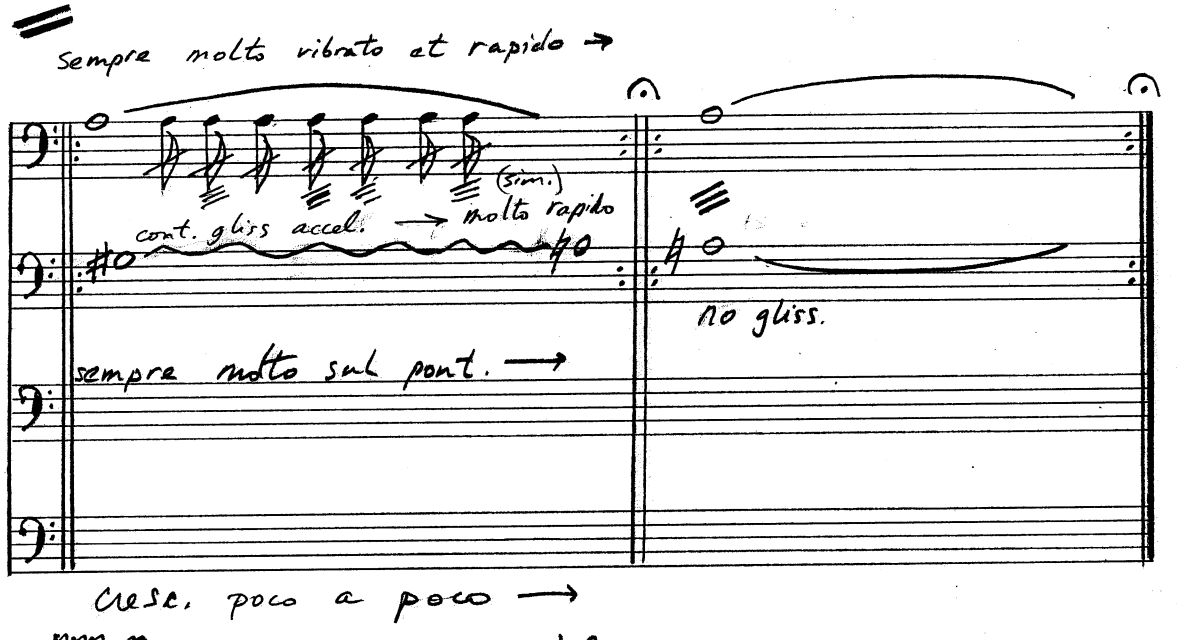

Tremolando
Pizz. (behind left hand)
Arco
open string harmonics at approximate locations – more gradually to → stopped notes
rapidly change pitch glissing continuously
ppp-p


Pizz.
Pizz
gliss
gliss
gliss continuously (sim.)
Pizz. behind left hand
(sounding note)
ppp-p

- part B -


Arco sul tasto
senza vibrato
poco a poco vibrato lento →
gliss
gliss
gliss
gliss
gliss
poco a poco sul pont →
V.C.
PPP-P


poco a poco vibrato molto et rapido →
continuous gliss
cont. gliss.
Sim.
cont. gliss poco accel.
sim.
poco a poco molto sul pont →
PPP-P


sempre molto vibrato et rapido →
(sim.)
cont. gliss accel. → molto rapido
no gliss.
sempre molto sul pont. →
Cresc. poco a poco →
PPP-P

-part C-