Music for Tuba & Computer

by Cort Lippe

2008

Written for Melvyn Poore

Commissioned by the ZKM | Zentrum für Kunst und Medientechnologie, Karlruhe, Germany, and realized in the studios of the ZKM Institut für Musik und Akustik.

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Performance notes

Sung notes. Sing into the tuba, while playing. If the specified pitch is too high or too low for the voice, use the octave transposition most comfortable, and which produces the most "beating" between the tuba pitch and voice.

Intonation on extremely low pedal tones may be somewhat approximate and pitch may drift slightly during notes



Electronic event cues. There are two sections in the piece. Section 1 has 26 events, and Section 2 has 22 events

(Since during Event 2 and Event 6 of Section 1, a live recording is made of the tuba, it is necessary during rehearsal of Section 1 to execute Events 2 and 6. After the recordings are made, events can be skipped to rehearse later events in the section. The recordings are no longer needed from Event 26 of Section 1.)

Sections can be rehearsed separately, and in any order.

Events are triggered by the computer operator.

The tuba should be amplified with cardioid or hyper-cardioid microphones.

A reverb unit can be used in conjunction with amplification.

A mono mix of the unreverberated amplified tuba signal should be sent via a pre-fader aux send to the computer input

The computer, running the software in Max/MSP should be output as a stereo mix.

See the Max/MSP computer patch for further instructions.

Cort Lippe

Program Notes

Music for Tuba and Computer (2008) was commissioned by the ZKM (Zentrum für Kunst und Medientechnologie), Karlruhe, Germany, realized in the studios of the ZKM Institut für Musik und Akustik, and premiered in the Cubus performance space at ZKM in 2009. The piece was written for and dedicated to the tuba virtuoso Melvyn Poore, whose encouragement, patience, and musicality were "instrumental" in making this piece happen.

The electronic part was created using the software *Max*, originally developed by Miller Puckette, whose scientific support made this piece possible. The computer tracks parameters of the tuba during performance, such as pitch, amplitude, spectrum, density, rests, and articulation, and uses this information to continuously influence and manipulate the computer sound output by directly affecting digital synthesis and compositional algorithms in real-time. Thus, while interacting with the computer system, the performer shapes all of the computer output. The intent is to create a level of interactivity between the performer and the computer in which the performer influences the computer output based on aspects of the musical expressivity of his/her interpretation of the score. Much like chamber music playing, in which individual expressivity has a fundamental influence on the entire ensemble; the feedback loop between performer and computer hopefully has a positive influence on the final musical result.

Standard signal processing such as sampling, harmonizing, frequency shifting, phasing, spatialization, and reverb are employed. Less standard, frequency domain spectral processing of individual FFT channels is also explored, including spectral filtering, delay/feedback, spectral spatialization, timbral snapshots, cross-synthesis, noise reduction/enhancement, and component reordering. In addition, phase aligned format synthesis, significant use of analysis/resynthesis via oscillator banks, and FFT-based control of oscillator amplitudes is exploited.

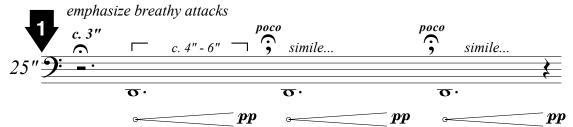
Formally, the piece is in two sections, and the instrument/computer relationship moves on a continuum between the poles of an extended solo and a duo. Musically, the computer part is sometimes inseparable from the tuba part, but serves rather to amplify the tuba in multiple dimensions and directions; while at the other extreme of the continuum, the computer part also has its own independent musical voice.

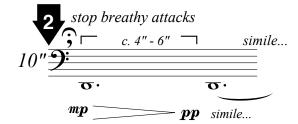
Music for Tuba and Computer is recorded by Melvyn Poore on the Wergo Label CD entitled *Death Be Not Proud*. Duration: 16 minutes.

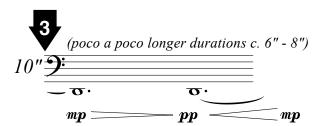
for Melvyn Poore

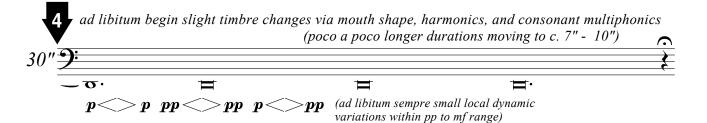
Cort Lippe 2008

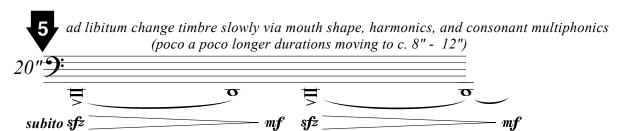


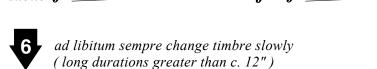




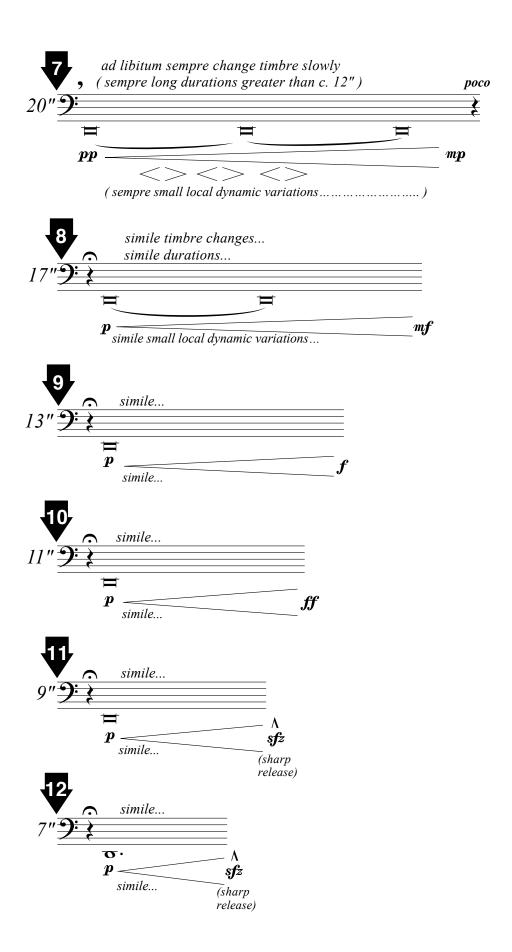


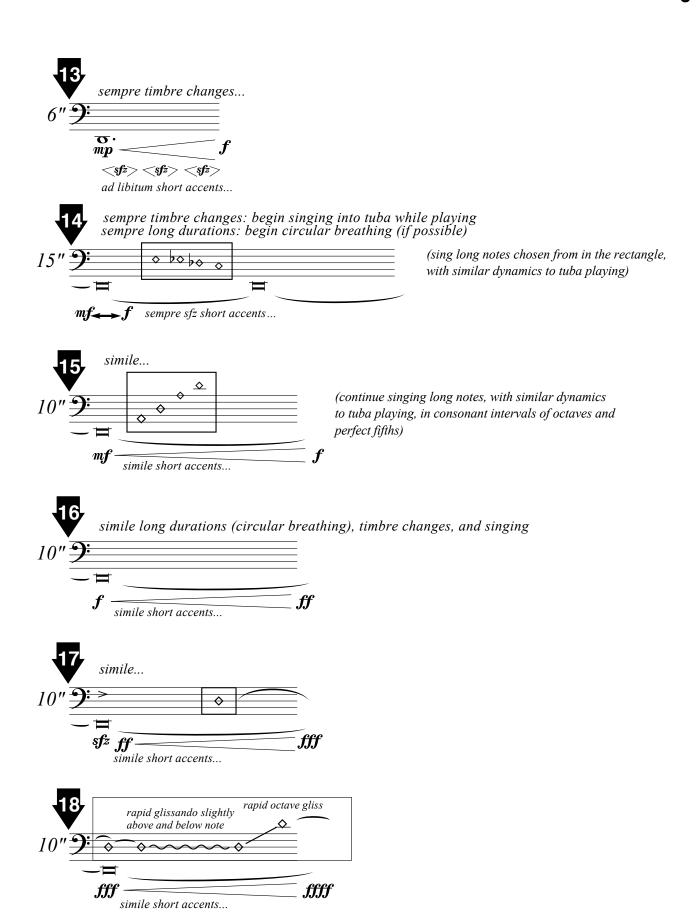


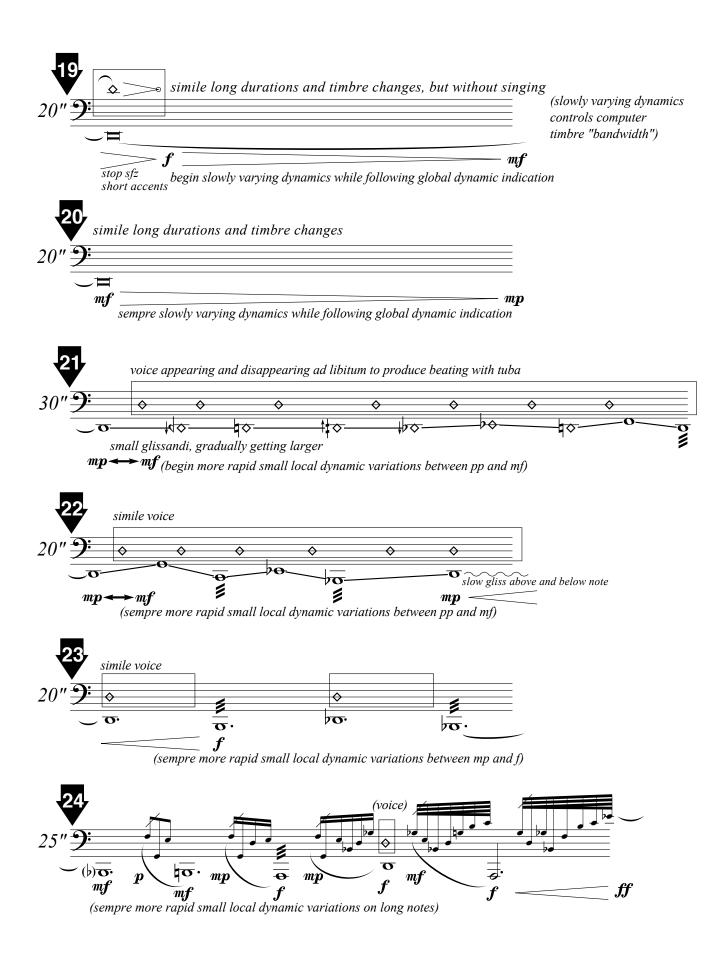










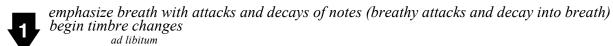


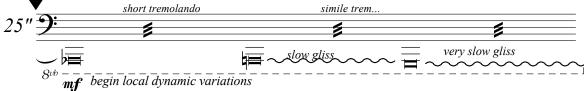
(intonation of extremely low pedal tones may be somewhat approximate and may drift slightly)

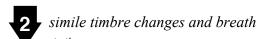


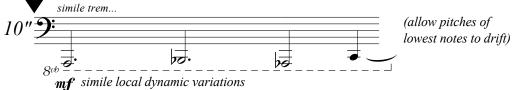


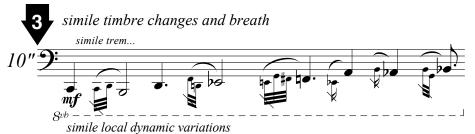








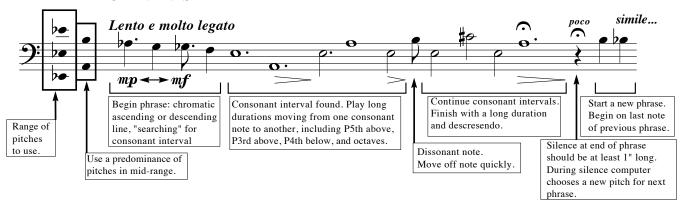








EXAMPLE FOR EVENTS 8 and 9



Lento e molto legato

Event 8: three to five phrases based on the example above

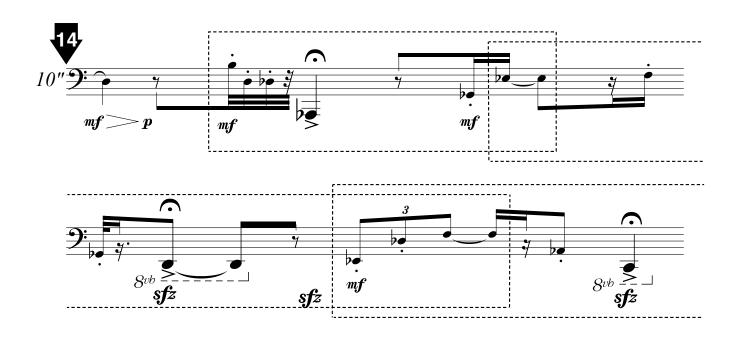
75" **9**:

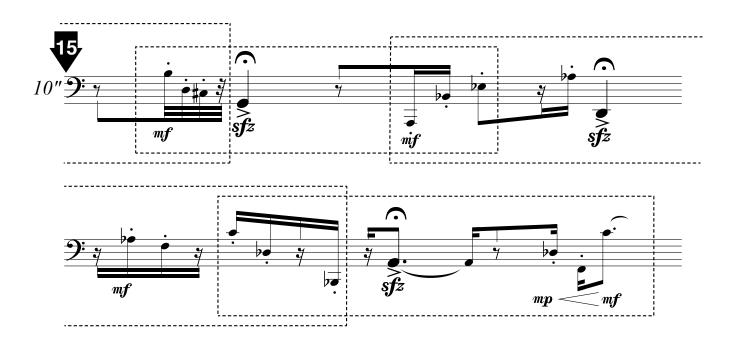
9

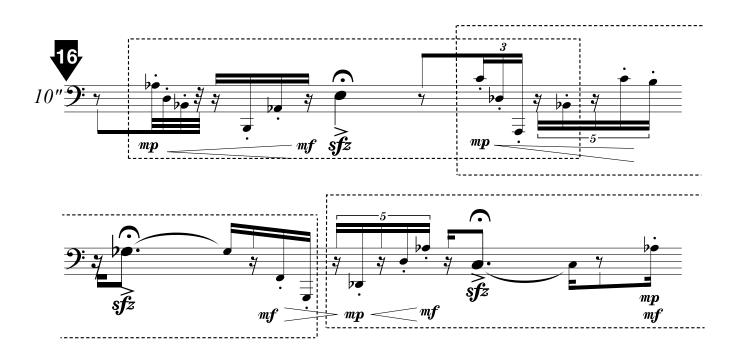
Event 9: five to seven phrases based on the example above

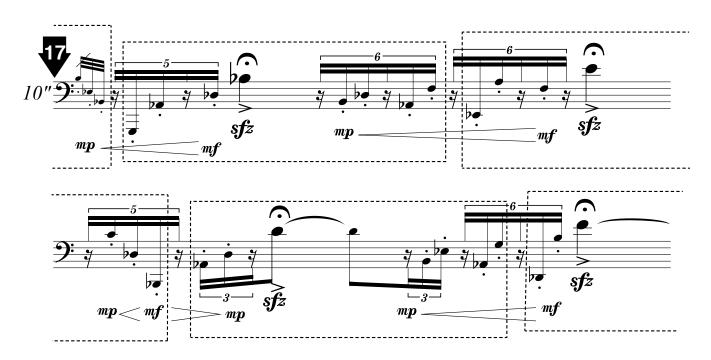
Event 9: poco a poco piu mosso e meno legato











The musical material for events 18 and 19 should be made up of material from events 14, 15, 16, 17. Use the boxed phrases that begin with notes of very short duration, followed by a longer note with fermata, and then another set of notes with very short durations. Phrases should be chosen ad libitum, so that the order in the score is not followed, and with as few repeated choices as possible. Gradually over the course of events 18 and 19, the notes with fermati should get longer and longer in duration while their dynamics of sustain should become more and more varied. At the same time, the rhythms of the short notes should gradually become more staccato and faster, with shorter durations. See the example at the top of page 10.

