

Kalamazoo College Lecture

On Recent Electro-Acoustic Pieces: Two “Easy” Pieces

Dr. Benjamin R. Fuhrman

Biography

Born in Lansing, Benjamin Fuhrman (www.benfuhrman.com) is a graduate of the doctoral program in music composition at Michigan State University, where his principle instructors were Dr. Ricardo Lorenz and Dr. Mark Sullivan. He also holds a master’s degree in music composition from Michigan State University, and a bachelor’s degree in violin performance from Hope College, where his principle instructor was Mihai Craioveanu.

Dr. Fuhrman has had works commissioned from performers such as Grant Gould, Jack Kinsey, Mark Flegg, Shawn Teichmer, the H2 Quartet, University Reformed Church, Blacksoil Church, the Magnolia West High School Wind Symphony, and Jeffrey Loeffert. His works have been performed at the IMMARTS TechArts Festival 2007, Electro-Acoustic Juke Joint 2008 and 2009, the Digital Arts Week 2008 Diamond in the Mud Exhibition, the ARC Gallery, the 2009 World Saxophone Congress, the 12 Nights Electronic Music and Art Festival, University of Central Missouri New Music Festival 2010: Dualities, SCENE&Heard Concerts, and elsewhere in the US, Brazil, Switzerland, and Asia.

***Hypnos* (Loeffert Recording)**

Program Notes - This piece was written for trumpeter Mark Flegg, and is an exploration of the timbral possibilities of the combination of instrument and computer generated material. The relationship between the two parts is blurred over the course of the piece, resulting in a synthesis of the parts over the course of time.

Background – Commissioned by trumpeter Mark Flegg and premiered by him in 2007, revised for soprano sax for Jeff Loeffert in 2008, subsequently revised for violin for EAJJ 2009. Despite the large number of performances, it’s actually my first piece for soloist and computer.

Ideas – Primary considerations were blending timbre between the two forces, and synchronization of the performer and computer. Initially, all materials were to be created by PureData during the performance, but the problems with synchronization in experiments nixed that idea, so Reason was brought in to create similar sounding segments that could be fit together in the performance. All segments on the computer (plus reverb and delay) were to be triggered by pitch recognition within PureData. That didn’t work out so well – trying it in the hall resulted in a cluster of double taps on the target pitch to the extent that the first trigger set off every segment at once.

After some initial experiments, the idea of overlapping segments (sort of a sonic tessellation) was hit upon in order to allow the performer some flexibility in terms of tempo. In order to do this, segments were expanded and ending portions were stretched in order to provide additional material (musical and not) that could be easily relegated to a background role as a sort of tapered ending. Synchronization was then achieved through the use of PureData as a triggering program with a second performer controlling the triggering of each cue in the score. This was later revised by creating a foot pedal so that the performer could trigger events without needing a second performer (instructions are on the Cycling 74 website).

The musical material is based on the idea of an similar and contrasting timbres. The computer part works as a constantly changing and shifting textural wall, punctuated by the soloist's melodic lines (which are later used in the computer part under the improvised section)

Programs/Techniques – Synthesis (and lots of it [Reason]) mostly additive and layering of various sounds (plus filtering), ProTools (mostly for time compression/expansion to create overlaps), PureData (initially for everything, but eventually just for triggering samples).

Fallout – Lots of performances. Led to the commission of *Erebus* (premiered 2009 in Bangkok at the World Sax Congress), which reuses a lot of the code and techniques (plus time stretching), and got me the doctorate. Later – commission for *Songs of a Mute Voice*, which I'm currently working on.

***Cumulus Refractions* (CD Version)**

Program Notes – *Cumulus Refractions* is about speed – or rather, what happens when something is slowed down to incredible levels and contrasted with sounds recorded at their natural velocities. Sound samples were collected and slowed down before being granulated to create static clouds of millisecond long fragments, indistinguishable from their original source. Over these textures, instruments both live and processed are superimposed and arranged in a contrasting [gradually accelerating and decelerating] manner, occasionally synchronizing with the computer edited sounds. Eventually, these mergers give way to areas dominated by electronic materials and accelerating rates of events, before coming to rest in one final cloud of sound punctuated with a brief accelerando in the live instruments.

The relationship between the acoustic and electronic forces is not just based on speed and density though. The electronic segments are primarily composed of samples of the live instruments (and a few other things found lying around my studio), manipulated into new forms, and then controlled by the pitch and volume of other live instruments. The end result is a subtle and evolving look at the speed and contrast of materials from the acoustic and electronic realms.

Background – After finishing the first movement of *Songs of a Mute Voice*, I needed to start building the computer part. After several weeks of programming, I had most of what I wanted finished, but needed to test everything. During this test process I liked what I heard, and faced with a bit of writers block (at least in terms of the sax part), I decided to work it up into a piece.

Ideas – At the time, I had been re-reading Curtis Roads' *Microsound*, using some of his ideas as a departure point in revising some of my code (that had been based on Xenakis' algorithms from *Formalized Music*). While working on code revisions, I liked what I heard and decided to record it. From that point, I decided that it would be interesting to create a piece where I was reacting to the previous material from the perspective of a performer.

With that in mind, I added live instruments and additional computer parts in order to create a humanizing element to balance the computer generated sounds, and the processed electric guitar. In doing this, I continued to play (and edit) in reaction to what was already present, while also composing segments to better fit the overarching musical narrative. Working in this manner, I then approached the process of editing in much the same way – looking for the more prominent gestures and timbres, and editing the session to bring them to the foreground in a way that the balance between the real and the synthetic begins to blend and move in and out of synchronicity, similar to Mario Davidovsky's *Synchronisms* series.

The results of this method of composing were then reordered and edited to expand the amount of space between events and also to allow me to shape the levels of intensity. This helps the piece feel more “organic” than similar pieces, despite the huge amount of programming involved. Additionally, it helps to accentuate the ideas of speed by contrasting the rapid “clouds of sound” with more low key and drawn out phrases in the acoustic instruments, creating another level of counterpoint that helps to propel the musical narrative forward, while providing a balance of forces that helps define the formal structure.

Programs/Techniques – Granulation, clouds of microsonic events, sampling, time manipulation and reversal, use of classic effects (Chorus, Flanger, LFO, Reverb, Delay, etc.), lots of live instruments (violin, acoustic and electric guitars, ukulele, harmonica).

Fallout – Proof of concept for the various Max/MSP patches created for *Songs of a Mute Voice*. Sent it out to multiple festivals – hopefully it will be premiered at one of them.

Additional Advice

Listen to everything. Look for inspiration from a variety of sources. Study math and programming – a lot. Free software is your friend when you’re starting out (SPEAR, Ubuntu Studio, PureData, Ardour, etc.). Enter and attend festivals and juried concerts – if none exist **START YOUR OWN!!!**

Read the most up to date or important books on the subject you can find – Miranda’s *Composing Music with Computers*, *Computer Sound Design*, Puckett’s *The Theory and Technique of Electronic Music*, Roads’ *Microsound*, Landy’s *Understanding the Art of Sound Organization*, Emmerson’s *Living Electronic Music*, Tenney’s *Meta±Hodos and META-Meta±Hodos*, and finally Xenakis’ *Formalized Music* and *Arts-Sciences, Alloys*.

Listen to electro-acoustic music like Davidovsky’s *Synchronisms*, Stockhausen’s *Gesange der Junglinge*, Berio’s *Visage*, Nono’s *La Fabbrica Illuminata*, Roads’ *Point Line Cloud*, and Xenakis’ *Mycenae-Alpha*, *Concert PH*, *La Legende d’Eer*, *Persepolis*, *Diamorphoses*.

Get away from the idea of the score = music. Experiment with alternate forms of notation – what works, what doesn’t? Consider (very seriously), how much control you as the composer have over a piece after it’s been notated and given to the performer – is there some stuff that’s left to interpretation? Are there sections where accurate notation is a hindrance to understanding by the performer? Are there better ways to get your ideas across?

Avoid conventional music’s clichés, but don’t abandon compositional technique. In other words, don’t try to sound like some dead guy, never use an Alberti Bass, and for the love of all that is musical, do not fall into the trap of composing a melody to an existing harmonic structure (boring and pedantic) or minimalism (static, extremely boring when poorly done). Instead, focus on issues of development and formal balance, manipulating gestures/timbres/textures/time in order to create an interesting musical narrative.

Exercises – draw a graphical score and realize it. Compose a 5 minute piece using only samples that walks through your typical day from waking up to falling asleep. Compose a set of variations on one sampled sound (use time manipulation, playback direction, pitch/timbre modulation, looping, effects).