

The image features a light gray background. On the left, there is a large, semi-transparent purple square. Overlapping the right side of this square is a large, semi-transparent teal circle. The text is positioned on the right side of the image, partially overlapping the teal circle. The text is in a black serif font. The main title is in a larger, bold font, while the subtitle and author's name are in a smaller font.

**'You can make
extremely loose
music with
computers'**

Interview with
Keith Fullerton
Whitman

Arie Altena

Keith Fullerton Whitman was interviewed in his hotel room the afternoon before his electronic composition *Natural Rhythms* premiered at the Kontraste Festival in Krems, Austria, October 2011. The main objective was to ask him about his way of dealing with time in music through the use of software, his compositional methods, and his love for early electronic music. By way of introduction I explained the theme of Sonic Acts XIV and our ideas about music as a way of transforming or manipulating the experience of time. It wasn't really necessary to formulate questions. Keith Fullerton Whitman enthusiastically embarked on what was mostly a monologue, providing answers to questions that could have been asked. This text is based on the recording of his hour-long talk, and has inserted questions for structural reasons and to enhance reading pleasure.

Arie Altena At the Sonic Acts Festival 2012 we would like to focus on the experience of time. We are, for instance, interested in how music and film can manipulate an audience's sense of time...

Keith Fullerton Whitman My favourite example of how music can manipulate the sense of time is a concert by the Swedish composer CM von Hausswloff, which I heard in Chicago – I think it was 2001. He started at 7 pm with just a slowly rising sound, which after a while transformed into a field of unique tones that fluctuated slightly in pitch. The whole room was humming. It was dark, it was a cold winter's day, it was warm in the space and there were still projections of weather maps. The whole setting made you concentrate on the climate. Immediately after entering the concert space I felt as if I was falling asleep. I suppose I went into an alpha state. I was aware I was at a concert, I was aware of the actions, but I wasn't thinking of anything else directly besides the effect of the sound, how it affected the environment, and how comfortable I felt. When the drone finally receded and the volume faded to zero, I sort of woke up with the impression that 20 minutes had passed. It was quite shocking to realise it was 9.30 pm. I thought, wow, that really worked! This is what Von Hausswloff was trying to do: stop the experience of

time, and it was successful. I think everyone in the audience was lifted out of a trance after the two-and-a-half hours.

^{AA} How did he achieve it?

KFW: I still wonder about how he pulled off this time-wizardry, even ten years later. He didn't use any specific timings or time markers; he did it by creating a beautiful blur of sounds. There are of course a lot of magic tricks that you can do with audio, like slowing down and speeding up sounds, Brownian motion (noise created by random intervals), and Shepard tones (sound which creates the impression of continual rising). Maryanne Amacher was very good at this – she had a really scientific approach in this respect. How Von Hausswloff changed the experience of time and duration also had a lot to do with the combination of all the sensory elements, like the warmth in the space and the still images. He streamlined the experience of music to create a static place and time, freezing the experience of time.

^{AA} Is it something that you have attempted in your own music?

KFW Many times. From 1998 to 2006 I did concerts with guitar, laptop and a mixer through which I fed the guitar. The concept was about feeding the guitar notes into a self-evolving system that would eventually sustain itself. A concert of an hour or even two hours often involved only ten minutes of actual guitar playing before arriving at a composition that consisted of the cycling of many different multiple sound 'engines'. Sometimes there would be up to a hundred different clocking engines that were doing various delays and filterings. The effect was like a moiré: you heard the overall sound, you could focus on all the rhythms within the sound if you really wanted to, but even then after a while it wouldn't really matter anymore. A few of these performances were quite long. One was in a school building in a rural town in southern Ireland. That time I just put the guitar down – normally I'm too obsessed with being in the moment and being in front of the audience to do that – sat down on the carpet, closed my eyes, and zoned out for a while.

^{AA} Something similar happens in drone music and in the work of La Monte Young, for example.

KFW I've been reading about Terry Riley playing twelve-hour concerts, about Charlemagne Palestine's two hours of slowly rising music. All of that is extremely relevant in this respect. Lamonte Young's and Marian Zazeela's *Dream House* is of course 'eternal', once turned on it goes on for ever – at least in theory. You can go into the *Dream House* and be lost for quite a long time. The experience of being in there is significant; the experience of time passing is not. It's so powerful because it makes you shut down. When your life is about accomplishing things on a daily basis, business, work, music, doing favours for other people, then having an experience of not being aware, not being conscious of time is meaningful and pleasant. Not many artists and musicians have been able to make such an experience happen. Catherine Christer Hennix can certainly pull this off in a setting where she just has a drone and acoustic instruments playing microtonal stuff around it. Riley, Hennix, Charlemagne Palestine and Lamonte Young abandon many conventions of concert music: the tuning system, the dynamic of going to a concert, the audience-performer relation. If all those things are abandoned, then, when the context is right, it is probably just a small leap to also abandon the sense of time.

Morton Feldman's music is another example. You don't listen to Feldman for the notes only. It is also about all the other elements, the pacing, the timbre. You need commitment as a listener. His *String Quartet No. 2* is six hours long; if you go to see it, you prepare yourself mentally. I have had different experiences with it, actually being in agony halfway through and thinking I couldn't bear it any longer. But when you stay you come to terms with it. You start asking yourself: what is causing this agony, is it my own mind, is it because I'm hungry, or because I'm dying to check my e-mail? It is all of these things, but then you realise all these things are not that important. The most important thing is the present, it is where you are now, and then you get to a place of rest. If that happens, the point of the piece is accomplished. There is an eternal peace in the last hour of this string

quartet. If it doesn't happen to you, you're too much part of the twenty-first century...

^{AA} With La Monte Young, Riley, and Hennix, there is a connection between music and ritual, their music is a vessel for something beyond music. Music, for them, is a means to achieve transcendence, to attain a different state of mind.

KFW As a listener I've come out of some concerts – like La Monte Young playing just intonation piano, for instance – hearing things in a completely new way. Listening to just intonation piano for hours straightens out all the little hairs in your ears. The rest of the world sounds so much weirder afterwards, and you assimilate that into what you knew before. Such experiences change you. Last week I saw Jason Lescalleet playing a concert in Paris. He started with a screeching, roving sine wave of 12 or 13 kilohertz, deafeningly loud. Deafeningly loud at such a frequency is really loud, it's a lot of energy. He only played for about fifteen minutes but with the high tones that he was playing, it seemed an eternity before he receded into quieter, more musical sounds. The high tones he played don't only affect your physiology – you recoil – they completely reframe how you hear everything else too. Somebody coughing or whispering became extremely loud. I became hyper-aware of the non-musical sounds in front of the stage. I could hear a guy washing a glass 100 metres away at the bar; I could clearly hear every turn with the rag. I thought my hearing would be fried after being exposed to such deafening sounds, but it was the other way around. It was a genius thing. He re-tuned the audience. Through the painful ritual act of the performance he made the audience temporarily aware of the architecture and the actions that go on in there.

^{AA} What is your opinion of the music of the Wandelweiser composers?

KFW I quite like the work of Jürg Frey, Antoine Beuger, Michael Pisaro and Radu Malfatti. Their compositions really tune you into the sonority of the space, to the instrument and the dedication of the performer. It is often insanely restrictive for a performer. There is

no room for personality, ego or individuality. It also shows that music cannot exist in an anechoic chamber; all the ambient sounds are part to the performance. I lived in Boston when a lot of the Reductionist music happened, which is very close to the music of the Wandelweiser composers. There was a very heavy power electronics scene, quite viscous and masculine. In the span of six months that scene developed into playing unamplified in punk basements, musicians making the smallest possible gestures and barely audible sounds, just breathing through a metal tube, using all the aspects of sound that you normally take for granted. It was brave and vanguard, and in a sense more painful than the power electronics, and more cathartic.

^{AA} How do you work with the notion of time on the computer? A computer can react faster than a human being when working with sound...

^{KFW} One way of approaching the way a computer deals with time is indeed to build systems that react faster than a human being can, where you are no longer in control, although you might think you are dangling the strings. When I'm performing live with a laptop my own timing is almost arbitrary because the music is all about the timing and the clockings of the system I have built. In that sense I'm not really composing music, as much as designing systems to create music. I'm definitely into building sound in a completely hands-off way. I was involved with an analogue version of algorithmic composition for a while. I used a synthesiser and had the internal clocks running slightly out of time. Because I used divergent timings for the engine generating the melody and for the patch generating the rhythm, it generated slightly different music each time I ran that system. In general the computer allows me to do many elastic things with sound. What is the conception of time of a computer? That's a fascinating subject that relates to the question of the soul of the machine. In the 1960s Gordon Mumma and David Tudor were building circuits that were designed to fail. They were power starving circuits and letting them die a slow death. I think the conception of time of an electronics circuit can be really different from ours. Think of the slowly dying

pulse of a battery, how such a non-organic thing creates its own time and space.

^{AA} Can you give an example of a system you built over which you do not have total control?

^{KFW} I built a lot of little pieces of software, which listen for attacks in audio. Let's say I play an improvised set with a drummer, then I might have the drum set miked, and for instance, a hit on the snare drum would be a trigger for an audio engine in my laptop. But exactly how the computer decides which sound is an attack and what is not, lies deep within the algorithms. Being less of a computer programmer these days, I generally work with objects that others have built, so this is not something I can touch directly. How the attacks are processed within the greater system is my end of the composition. I can control it, but ultimately it is also arbitrary. Maybe there's a noise because a cable is badly connected and that gives off a signal that is also interpreted as an attack by the software. The pitch-tracking system that I built in Max/MSP messes up when my travel guitar picks up interference from a light bulb. The bulb sends a pulse wave to the guitar pick-up, and then all the pitch-tracking system registers is 60Hz in the US or 50Hz in Europe. Either my playing is then destroyed or the computer can't recognise it. If I turn away from the light bulb, everything is fine again. There are always ghostly things that are beyond control. No matter how much control you program into the software, it can change as soon as you do real-time stuff. Such uncontrollable external elements are in fact part of the system. And actually, the external elements are quite interesting and attractive, because they cannot be fully replicated each time. These factors are different from night to night. No one has complete control, except maybe if you do pure number synthesis in the computer. I used to perform with these controllers and when a potentiometer broke it sent an awesome analogue channel noise to the computer. It can be very exciting when such an arbitrary breakdown happens, the sound might be great, and you work with it when it happens.

When I'm performing live with a laptop my own timing is almost arbitrary because the music is all about the timing and the clockings of the system.

^{AA} Can you tell something about your new piece *Natural Rhythms*, which you composed at GRM in Paris?

^{KFW} The piece is entirely based on natural rhythms. The source recordings are mostly natural occurring rhythms, like rain falling off the side of the house, rain in the gutter, dripping. A lot of sounds of water, which creates parallel rhythms that are completely irreproducible otherwise. I gave these recordings to musicians, amongst others the drummer and sound sculptor Eli Keszler. He listened to the recordings and then added individual fragments on hi-hats and snares, playing loosely in the mould of the source recordings. There are also recordings of pinball machines, which make fine pointillistic sounds. The sounds are about gravity, energy and entropy. I ran all these recordings through gates in the synthesiser, listening for attacks. The piece is really a collage of sounds and attacks. When I perform the piece a lot of sharp sounds fly around the concert room. In the composition the sounds are very accurately distributed in time and space to create key events when all the sounds are perfectly synchronised. A lot of energy is then lined up across every channel. There is one such event that makes a big impact every minute or so. This morning during the rehearsal I was making notes, at which moments in the performance I should really open all the faders of the mixing desk to have a short big effect when the sounds are synchronised, to have a peak, before it returns to chaos again. It sounds like free jazz in an electronic arcade.

^{AA} There are so many rhythms in the piece that it becomes quite chaotic and intense...

^{KFW} The piece is a tight textural thing. The effect I create is one of amassing all the rhythms of the sounds, all these sharp sounds flying around. Then you get the moiré effect that I'm after. That's all I aim to do in this piece. There is a moment in the first five minutes when you stop hearing rhythm and start hearing texture, because your brain can't process all the sounds. For your brain there is a gradual transition from hearing just a sound, to hearing lots of sounds, then you get into

hearing polyrhythm, but, if you add even more sounds to this, you arrive at a point when your brain cannot fully process all the sounds and rhythms anymore, and you just start hearing a smear or a spread of sound. After a while you start hearing textures. I'm working on such transitions now. Perhaps it's comparable in a way to how Stockhausen spread out rhythm into notes and melody using his formula composition technique, only I spread rhythm into texture.

^{AA} In what way is your music informed by your interest in early electronic music? For me the interest in early electronic music is more than nostalgia. One of the things I find fascinating is the utopian aspect of early electronic music, the idea that these composers were working to make a new world of sounds.

^{KFW} The significance of early electronic music is not just in the technology, which was new, or in the new working methods that were invented as they went along – which in itself was also an important thing. The key element is that these methods were so cumbersome and time consuming that editing at the composition state had to be very careful. That still comes across. Tape cost money and editing had to be done in such a way that the section you were working on had to be finished before you turned the machine on again. We live in the days of endless undo, Command Z, Command Z. In the 1960s they couldn't afford even one undo – everything in the working process had to be exactly right at every stage. Whenever I listen to a really early piece I think about the process of making it more than anything else.

^{AA} What about the sounds they were using?

^{KFW} Of course the sounds fascinate me as well, because they were not avoiding certain classes of sounds, everything was new. Now there are whole classes of sounds that you can't use, because they are immediately associated with cheesy SF or commercial dance music. These connotations have ruined whole classes of sounds, at least for academic electronic music. I have become very fascinated with

Central and South American tape music. French composers like Jacques Lejeune, François Bayle and Bernard Parmegiani were, each in their own way, quite refined in working with electronics. The Venezuelan and Chilean composers from the 1960s, like Jose Vincente Azuar, were relative outsiders. Their music is cathartic – they used all these slowly descending sounds, and barbershop stuff too, it's as if they didn't know that some of those sounds were already 'forbidden' in serious contexts. It is the punk rock version of electronic music. Early electronic music was also more free, and looser. That's also true for the composers associated with the GRM, the Groupe de Recherches Musicales, in Paris. Luc Ferrari's *Heterozygote* from 1963 is really quite aggressive. He was radically screwing around with different ideas, and *Heterozygote* is completely different from his later pieces, which are based on field recordings. Iannis Xenakis' *Bohor* from 1962 is 20 minutes of grinding BEAD noise; it's crude and nice, and based on just one class of sounds. It. A lot of the early tape music is about the *jouissance* of being able, for example, to speed up and slow down sounds. Nobody knew how to handle that. The blank slate is what draws me to it: suddenly you have tools to do things with sounds that you didn't have before. Everybody in the 1960s had an attitude like: this is brand new; let's see what we can do with it. It still sounds amazing. Now we can play 128 channels of 24-bit audio on our laptops, there is no limitation. Does it make us more blasé that the processes are more automated, and more streamlined?

^{AA} Could we have a similar enthusiasm in contemporary electronic or process-based music?

^{KFW} If you record a sound and play it back on tape and speed it up you get a great sound. Some composers in the 1960s based complete compositions on just such an effect. You can wonder what the value of that is now. We have Max/MSP, and our computers are so incredibly powerful that you can be overwhelmed by the possibilities. It makes it harder in a different way. What I find really interesting is that you can make extremely loose music with computers. Nowadays I gravitate towards music that is really free in time, like Mark Fell's work. It's

so liberating to hear those great electronic dance music sounds turn into something that has no function at all as dance music, and is not minimalism either. It is totally a-synchronous and I want to play it really loud every day in my office to get me into a good mood. Mark Fell reclaimed the sounds of acid techno and has turned them into something else, something that is not about shaking your ass – it's about just appreciating the language of that music. That is super valuable.