Dipl.Psych. Matthias Wille: The new evolution of electronic music

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## *Essay: The new evolution of electronic music*

The tool you use will always influence your outcome. It is the same with every creative work, no matter if you paint a picture, make music or build a chair. If you give the painter a smaller brush he will probably paint another picture than with a wider brush. And it is the same with the music. The instrument you use will influence your musical output.

But with electronic/computer-based music everything changed because of two main reasons: we are not bound to physical restrictions anymore and we left (the necessity of) realtime performance. That had already a big impact on our tools but to my opinion we are still at the beginning of a new evolution in music performance. These developments are just a few decades old while the evolution of other musical instruments went on for over thousands of years beginning with the first caveman beating with bones on stones. So we live in a time where exessive changes happens (as you could read here day by day).

Before going into detail i should maybe first tell you some things about the author: I´m a PHD-stundent in psychology and ergonomic science working with the car-industry for the last 5 years to improve their designs to make them more ergonomic. But I´m also a electronic musician for over 20 years now. Bringing both together you might know what the intention of this article is.....

One thing which is different on tools for making electronic music than on acoustic instruments is that they are no more bound to the physical needs of the sound. A guitar for instance must be build that way to sound the way it does. If you make it smaller – what would maybe more handy from an ergonomic point of view – it will sound different. Or a drum has a certian form or shape to sound in a special way. So in the evolution of this instruments the designers had to deal with the physics of the sound as well as with the usability. But in electronic music the sound is no more build by physical resonances, so the shape of an instrument becomes independent from the physical needs and the designers could concentrate on ergonomics.

In the beginning there was hardware. Also these synthesizers and their controls could be build in any form the user still have to control it in that way the hardware was designed. So if you want to change a special parameter you have to go a special way. Sometimes deep into the menu, then press here, hold there and then – if you´re lucky – success (see an interview with Ryuitchi Sakamoto http://www.youtube.com/watch?v=QfLTFmt9cKQ ). Even on analog synthesizers, where you could control everything direct without stepping through menus, the architecture where a control is located was given.

That all changed the time we switched to digital. Now the content is done by software and for the first time in history the control is independent and free. Just click on a parameter and you can route it to every control you want[1]. So what gave the music instrument companies to us? Uncountable USB-Keyboards. All the same. Some with more faders and encoders, some with less. Well, it is ok to stuck on a familiar, well known metapher while entering new possibilities[2]. But it took years until new controllers came on the market. And it were small

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[1] For shure, with a little midimapping and a gear like the Doepfer Drehbank you could also route your controls before, but it was a little more complicated than just click and therefore seldom used. Because ergonomics is not only about what can be done, it is also about what is easy to handle.
[2] That is actually the way Propellerheads Reason catched many homerecordingstudio-owners: A virtual hardware studio with cables that even swing if you turn around the rack by tab. This "virtual hardware" metapher helped

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companies like Monome or Jazzmutant who made it. Now, nearly a decade since the digital revolution in music, Akai presents its APC40 and it will probably hit the market hard (for those who use ableton live). Also some of us go their own way by abusing the game controller Wiimote to transfer musical data or the i-phone. That is the beginning of a new (r)evolution.

Another point that is different in electronic music compared to "normal" music is, that we left the necessity of realtime-performance. Well, I´m talking of controls which are a part of the realtime-performance, but our melodies and sequences are no more done in realtime. That is, where many people still get lost and say "this is no live music, because the computer makes the music". They are used to see the bassplayer, the guitarist or the drummer sweating the hell out of them to play their individual melodies and stay in timing with each other. That is something they could see and understand. But we don´t have to care about timing. Our machines are doing that. We are just pressing buttons. That is where the saying "labtop-musicans are checking their e-mail" comes from. The audience wouldn´t get the difference if you´re checking your mail and play an mp3 or if you do complex live arrangements. But if you wave around with a Wiimote (like Gustavo: http://createdigitalmusic.com/2009/03/09/gustavo-bravetti-driving-crowds-wild-with-a-wave-of-his-wii-enabled-hands/) they could see the handling corresponding with changes in music and they feel that you´re a great live musican. That makes that Wiimote-thing so attractive, although the control possibilities on a Wiimote are too simple to use it for a whole complex live performance and arrangement. But it is a nice tool to get in contact with the audience.

Beneath that impact on the audience the loss of realtime-sequencing lead to massive changes in the composing process. On a classic acoustic instrument you have to exercise again and again until you can play what you have intended. This might be frustrating, cause you hear every fault immediately, and it also is time consuming. So on your way to become a good piano player you have no more time to switch to another instrument. Of course, making electronic music also needs exercise: You have to learn about your software and the possibilities to realise your ideas. But since we use sequencing you don´t have to play your intended melodies or sequences perfectly, you can edit them. That saves time on exercising performance. (And it makes electronic music a more abstract and theoretical art than acoustic music.) So with the time saved, you can focus on the sound or on different tracks. Without that factor electronic music will never had been developed that way, that one musican is responsible for all sequences (drum, bass, piano, effects, whatever) AND the sound itself – while the sound in electronic music is more important than the sequence (If you print the notes of a house-song an acoustic composer would laugh at for its simplicity). And furthermore the time still left we use to get into new pogramms or controllers, that we change frequently compared to classical instrument players. That keeps us open for new ideas.

But what are controls good for? (Because your main tool is still your software what is off topic to this article). A manual control gives you a more direct, more spontaneous, sometimes unprecise and therefore human influence on your sound than entering a controlvariation with the mouse. The theoretical art of electronic music becomes "alive". Imagine the filtersweep of a 303. Beside the effect that it is great fun for you as a musican to twirl the encoders, it will never get that catchy if the variation was painted with a mouse. We all love rotary encoders. With a Wiimote you can do it in 3 dimensions. That gives you more control possibilities of the sound. Now you can change the filter frequence vertical, the resonance horizontal and a LFO by tilt. All at the same time with one hand. You feel the direct interaction of these

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many users to transfer their knowledge what made the massive change in the production tool more easy and therefore the decision of the user to change more likely.

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parameters and you will probably do another variation than if you had painted it by mouse or recorded it one after another.

On the other side there are new controllers which doesn´t give you more dimensions but changed the content of control. One thing we all want to have is buttons. To fire patterns, to mute, solo, for entering sequences in time or whatever. See the new APC40 for instance or the Monome.

And then there are those touchscreen controllers that gives you the possibility to arrange your controls however you want. The i-phone apps are just at the beginning, cause till now you can choose between different templates but you can not completely free design your surface. But the Jazzmutant Lemur is different. I will focus on that because I own one for 8 month now. (See my videos on youtube: http://www.youtube.com/tonvibration )

There is a lot of dashing on the Lemur because of its "exclusive" pricing. I understand that, but you have to keep in mind that it is not only the hardware, it is also the software which is unique. As far as I know the Lemur is the only tool that allows Joe Average to design his individual control surface. No programming knowledge is needed. It is just like in a paint program: set a fader here, set a rotary here, some multislideres there, change color, size. The routing is death simple: just enter your miditarget (up to 8 but in a simple setup always the same), midichannel and controltype/number and route it to your application software. After that you feel like Lieutenant Commander Data on starship Enterprise searching for live forms on an alien planet while playing your music (for non-trekkies: this is supposed to be great fun). But beneath that fun the building of your own control surface will change your music.

When deciding to buy a Lemur my main argument was to get a visual feedback of the pattern played in Ableton Live (http://www.youtube.com/watch?v=r-LFoxMw1Sc ). But working with it for a while I figured out, that this is not the main thing. I did live-performances before where I triggered the patterns on the keyboard, and although it is nice to get a visual feedback now, the arrangements doesn´t change as much. But what went completely different is that I use more detailed effect controls. I always routed the amount of an effect to a rotary encoder, but now I can go into details that I wouldn´t touch without visual feedback because they are difficult to hear in a complex live-situation and therefore difficult to control. Changing the startpoint of a beatrepeat, the delay timing, pitch jumping on a resonator (while "jumping" wasn´t possible with a knob) are just a few examples. Furthermore I developed a stepmodulation-module that allows me a detailed control of the variation I hadn´t before (http://www.youtube.com/watch?v=aOdAlqucKCg ): With one touch you can choose only a small segment of the typical 16 bars for the modulation or I can fade in the amount of the variation on the fly. In another module I developed a keyboard with only 7 tones each octave what helps you staying in your scale if you jam along ("Scalomat" http://www.youtube.com/watch?v=ny_lxU3ClKY ). Well, after 20 years of music I know the scales a little, but normally I was always using the same tones. Now I just skip the mainscale and I can jam in a-minor without thinking or hitting the wrong tone. And this is just the beginning. Because I´m still busy finishing my PHD, I can´t wait until I got more time…..

That points out another thing: there is no Yin without a Yang. Building your own controls takes time. Time you got less for your composing process. A USB-Keyboard is mostly plug and play. But even getting a Wiimote doing what you want takes a little time and you might need an additional programm and maybe also some scripting. The same with the i-phone apps. On the famous OSCTouch you need PD and also get into OSC. And on the Monome you might at least get somehow into programming. And while setting basic controls on the Lemur is easy for more complex controls you have to get into programming too and for some

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applications you´re half on your way of getting into MAX. I guess you – as a CDMreader – doesn´t fear that. But there are a lot of musicans out there who do. So this kind of border still exists for making use of the new control possibilities for everyone. These tools are still freak-ware. There is no bad connotation in the word freak, because it started all with a freak. But to make these controls products for everyone, there is still a long way to go. And maybe this isn´t doable at all. Because the more freedom you get in your control the more parameters you have to define and so it becomes complex. What the user need is a well designed editor programm, more tutorials and more step by step instructions and a good support to make use of the more complex controls coming. But as I said – we are still at the beginning. (btw: My PHD is almost done and I´m looking for new challenges. So if you are part of the music industry and interested in satisfied users, just drop me line…)

At last I wanna thank all you freaks out there doing great applications and new controls and sharing them with us. You are great. Thanx a lot!