Improvisation
Sport & Evolution
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Photos: Konstanze Binder

Recently after a concert in Beijing, I was asked to give a little talk to some music students about improvising and interactive software. I was reluctant as they were "Jazz" students, so I wasn't so sure how it would go down. In the event [and in spite of some wild translation] they seemed to find no aesthetic or ethical problem with the whole business.

This experience contrasts strongly with my experiences of many so called "Improvising musicians" to be found in Europe. There, reactions range mostly from a kind of "luddite" aggression to various "put-downs" based on wilful defensive ignorance. Strange really. I used to think that one important characteristic of an improviser was openness to new ideas. [Whatever happened to fantasy too?] Anyway, I suspect that there are two subjects that will guarantee much debate over the next 20 years, computers and our relationship to them.

My experience with interactive electronics comes out of my 25 year career as a performing musician. I am not interested in being an "electronic music" composer — my instrument is the violin not a mouse or even a few buttons. What stimulates me is to bring the instrument into areas of activity and technology which are actual to our age.

First of all, I DON'T play a MIDI violin. The violin I play costs DM 120, it's a plain vanila one and I bought it in the old GDR. The reason I don't play a MIDI violin is that for me, it is too direct, too much like a well trained digital parrot [in the same way that improvisers get fed up if there's too much copy-cat playing in group improvisation.] O.K. — you could write software that would eradicate almost any kind of connection between MIDI violin and the actual computer instruments used [synth, sampler, etc] but then that for me would be reductive and pointless. I am looking for a physical connection, not trying to avoid one.

I utilize two interface systems which attempt to bring together the physicality and dynamics of improvised music [as played on a violin] with the quick change and virtual possibilities of computer music. The first interface uses ultra sound mounted on the bow or the violinist's bowing arm to measure the actual movements of the bow. The second utilizes a sensor, built into the bow itself, to measure con-tinuously the hairpressure of the bow on the strings [the driving force or motor for the violin]. Naturally factors such as humidity, temperature, how tight the bow was tightened before playing, which end of the bow is being utilized, the pressure used in the previous bow stroke [i.e. after a well dug in bow stroke, the bow might still be in the process of expanding and doesn't get time to reach its normal rest state before the next stroke], etc. determine a very organic, chaotic and unique character to each concert outing — a fundamental necessity for an improviser wanting to take a chance or two! [Whatever happened to that idea too?]

Some technical information

Within the programme are 32 mapping tables. These can be set to work within the standard chromatic scale or a choice of notes can be generated by random generator, algorithms, graphic procedures, or interpolation of sequential patterns between fixed points. Superimposition of these structures in real time leads to very complex patterns but these patterns nevertheless always retain a degree of self similarity due to the physical and rhythmic consequence of the bow. This complexity must also operate in an ever changing mode because of the adjacent violin output/performance operating in parallel, against or with it — ie. those physical actions, movements and techniques of the improvising violinist.

This means that specific areas of interaction can be set up which focus on some found sonic or physical relationship between the two systems. Add to this the voice coming from the violin and there are three pools of information which, through the action of horizontal bow movement or vertical bow pressure, combine to form musical structures that appear to be pulled together by some kind of attractor [to use chaos theory jargon].

Sometimes the attractor is clearly the violinist who can at any time achieve a demonstrative role [i.e. he can shield information from the sensors, he can stop playing, scratch his head, or turn the whole thing off in disgust, etc]. But at other times it seems there is a control centre working away independently of all constituent parts, as happens often in the best of improvised music.

On the scale thing, I've tried to keep a one to one connection between violin and digital instrument by using only one MIDI channel in performance. Sort of basic monophonic solidarity! For me, an important aspect of expression comes out of pushing the natural physical limitations of an instrument to the edge of its possibilities, this includes digital ones as well. Let's see those little digital boxes sweat — or at least get seriously hot!

But the bottom line in all this is … is that it fulfills a creative need. A sustaining, physically exhausting and sometimes quite humorous experience for performer and audience alike. If it was a repeat show everytime, I for one would soon get fed up with it. In this sense, it's a challenge in the same way that playing with any resourceful improviser can be. The process may be determined by the constituent parts of musician and technology but any definition would be quite limiting in trying to describe the quite beautiful psychological and physical states attained in this kind of music making.

This necessity for physicality in music has also been at the back of my mind as I have pursued the sport connection over the years. Sport and music are very conservative activities, they demand certain basic satisfactions from both performer and public alike … primal urges as fundamental as sex. At first it was a question of performing music side by side with sports activities in counterpoint [for example a duo between an amplified squash player and a violinist in 1981 turned out to be a quite logical rhythmic cantus firmus [sport] with variations [the violin]; a full scale indoor Cricket game in 1985 utilized analogue electronics actually built into the bat and the wickets, while the cricketers divided their roles between actually playing the game or improvising commentaries on traditional instruments [some with modifications for mobility in the outfield!]

With the arrival and availability of an ultrasound to MIDI interface all movement could render a musical response and the resulting sport sound could render an immediate improvised musical response. Two pieces saw the light of day in 1991, both were satirical responses to the use of sport for political ends — they dealt with the olympics. Original commentary from the 1936 Nazi Olympics was used as an extreme example of what goes on at every football match anywhere in the world. These samples were matched by medical recordings from the body/body fluids under stress and surreal stories of sporting prowess. Cafe House Music from the 1930's was also chopped up [sampled] and the full perversity brought together with the strokes and gestures of a violin bow.

Of course I am not the first musician to be obsessed by both musical adventure and sport. Perhaps the most extreme musician/composer of this century had the same problem. His name was Percy Grainger, or "Perks". He also enjoyed playing Badminton — now, there's an idea!

Grainger was born in Melbourne, Australia in 1882 and died in White Plains, New York in 1961. Although he had a huge reputation in his lifetime as a virtuoso pianist and composer of easy listening pieces such as *Country Gardens* and *Molly on the Shore*, amongst contemporary music fans he is often hailed as innovator and wayward genius. He predicted and experimented with many 20th century music concepts before they became known and credited through the work of other composers. For example, Grainger's *The Warriors* written in 1913 seems to predict Charles Ives with its use of offstage brass band, rhythmic complexities, masses of tuned percussion, use of two conductors and outbursts of spiky dissonance in basically a tonal piece. Throughout Grainger's whole career, he was busy trying to realise the concept of Free Music, a music free from the tonal or atonal structures of western music. Towards the end of his life, he built [with Burnet Cross] a number of Free Music machines out of industrial waste and junk capable of "non-harmony" and "gliding tones". Grainger was also a pioneer of the "found object". For example, a broken cyphering "C" on his harmonium brought about the piece *The Immovable Do* in 1933.

But it is for his extreme personal behaviour that Grainger is now known. While still alive, he built a museum to himself [looks like a public toilet] and it is here that 100's of his letters and artifacts enlighten the workings of his mind. The letters document his passion for flagellation

and sado-masochism; his unforgivable and often contradictory racist bigotry, particularly against Jews [while at the same time admiring many Jewish musicians]; his pre-occupation with incest fantasy. Grainger's brain, like classic quantum interference was a crucible of contradictions where phantom or real alternatives could be both childlike and monstrous at the same time. His favourite composers? Bach, Duke Ellington and Delius.

All good material, eh?! … And now back to the article on interactive electronics & sport.

Space is not the final frontier, nor is it cyber-space — it's the brain, or at least, our understanding of how it actually works. I wanted a simple analogy. I found it with the Badminton court — it represents the brain, the two Badminton players would play out the roles of the left and right hemispheres. But whose brain? Naturally the one belonging to one time Australian musical genius and deviant, Percy Grainger; a man who created some of the most inspired and beautiful innovations in 20 century music while at the same time being capable of the most depressing racial bigotry.

This piece would be a satirical celebration of the "Jekyll & Hyde" in his mind — and perhaps in all of our minds! The "thoughts" of the players would be heard periodically loud and clear throughout the performance. They would react to each other [as sports people do!] with personal comments, spurious philosophical assertions, occasional abuse, and observations on the evolutionary struggle.

On each of the rackets and the net would be mounted contact microphones and accelerometers, accessing musical material. The movements of the rackets would then further control tempo, rhythm, panning, volume, etc. The information from each racket would confront, complement or cut off the material generated by the previous racket stroke. Combat. Competition.

The role of Percy Grainger would be taken by a MIDI controlled player-piano. Texts and video images would be derived from recently discovered [?] letters by the composer and pianist. The violin role would be one of commentary instead of the usual one of protagonist.

I wanted *Perks* to celebrate the physicality and technology of music; using the latest interactive technology to original 1908 Grainger field recordings of Rarotongan music. *Perks* would deconstruct a wide range of Graingeresque music vocabularies and disparate elements … anything from a traditional Irish melody to a chaotic [used in the old sense] version of the Grieg piano concerto. The interactive sounds used in *Perks* would be digital representations of keyboard, percussion & homemade electronic instruments found [or imagined] in the Grainger museum, Melbourne. Visually I imagined some kind of combat — a perverse dance … tribal … contradictory.

Humanity's collective brain seems to remain fundamentally flawed, combative [it takes two to Tango] and tribal [which one do you belong to] in its response to just about every issue from politics to music. Whether it is the expression of racial prejudice, the notion of the Nation State, Football supporters, a religion, or some other exclusive club, we demand that our species be exotic but go to extinction in an orgy of tribal nonsense. We are stuck with our genetic code. And if our branch on evolution's Tree of Life is now full grown with future development possible but unlikely, clearly we are going to need a sense of humour as the game stumbles on into the next millennium.

"Each person must have some subject that fires him to madness, to put up with less seems crazy."
[Percy Grainger]