"Both music and technology are ways in which we come to know ourselves and our worlds" (Owen Green , 2008, p.1).

I hunted crickets when I was a child. I was captivated by their startlingly loud sounds, and excited by their life, invisible in the long grass. On the rare occassions I managed to trap a cricket in my hand, I felt and heard it through my skin, noisily shining its existence.

Practice 4 Report

This seems very different to the typical modern experiences of sound. In a digitalised, sound-saturated world with endless possibilities, in which we must switch off from most noises, **how can digital musicians produce detailed sounds whose life we are thrilled by?** The most innovative and potentially thrilling sounds today are without a body, fed to us as invisible, sonifying a malleable cloud of digital information. The laptop performer prods flat keys and buttons. **How can we bring physicality and emotion into post-tonal digital music?**

As a singer/performer, I use intense textural sounds and subject matter but am very physically restrained. With this project I was seeking to develop a contemporary minimal "noise" instrument to enhance the classic practice of singing bloody-hearted, romantic songs with the still reserve of the likes of Roy Orbison. I wanted the instrument to exude some of the energy that Diamanda Galas or Bjork exude from their own bodies.

Both in terms of spatialised sound, and the design of instruments, I am interested in the ramifications of how our mind intimately extends beyond our "ancient biological skin bag" as Andy Clark puts it (Green, 2008).

Left to right: Roy Orbison, Diamanda Galas, AMT (me).

In addressing all the issues outlined above, three particular NIME developments were inspiring for my project. Firstly, the Reactable (www.reactable.com) gives the digital performer independent objects to play with. In-keeping with this idea, I used a drinking glass containing a small speaker, plus a gesture-sensitive Wii mote. My laptop sounds played out of the speaker could be altered both by the Wii mote (right hand) and by the placement of the (left) hand over the opening of the glass. The resonance of the glass itself altered the sound from the speaker.

Secondly, artists like Emilie Simon (www.emilesimonmusic.com) have personalised interfaces that appear to act as extensions of the body. I used this idea by attaching the glass to the player's chest. I used an adjustable strap remiscent of a guitar strap, referencing the classic singer -songwriter's instrument, but strapped around the torso, more closely bonded to the user.

Thirdly, Ge Wang (http://slork.stanford.edu/) has placed the amplifiers of digital instruments on the body of the player. I emulated this by creating localised sound inside the glass on the player's body. The small speaker, amplified by the glass, requires mic-ing up on stage like an acoustic instrument.

Left to right : Reactable, Ge Wang, Emile Simon

However, I wanted to go beyond these NIME ideas, to bring sound back out of the computer, and have it altered by some physical object before the listener's and player's eyes, ears and hands. This to me is a key to enhancing and developing digital sound-making, utilising the irreplacable spatialised, 'warm' and 'tangible' aspects of acoustic and analogue instruments without regressing from digital possibilities. SOUND AS AN ENTITY QUOTE AS ESSAY.

I wanted to make noise people felt they could bite into, as physically present and palpable as Ryoji Ikeda's glitch, but with the potential fragility, beauty and life of the human singer's voice, gestures, melodies or words.

After looking at instruments using water, ice, glass and wind, I became particularly interested in the glass harmonica. I began exploring the acoustic properties of glass. I experimented with mini speakers placed in drinking glasses and vases. I played a wide range of sounds through them and noted the most interesting/ resonant timbres and pitches that were most affected by the glass. I then built sounds from sine waves in pure data, employing beating effects to create timbres similar to the ones I had discovered worked best. I settled on using a Kronenberg pint glass, as the fluted shape and reasonably thin glass provided good amplification and resonance. I wanted a glass I could find in most pubs and bars, as this is preferable to carrying a glass when on tour.

The name 'Kronenburg' also connects to my interest in Cronenberg for this project. Amidst his body horror are striking images of humans melding intensely with machines. My melding was primarily conceptual; the synth becomes an extension, augmentation and potential warping of the performer's internal feelings. But it also allows the performer to touch, physically enjoy, and manipulate the computer's output.

On a practical level, I began to question my allegiance to DIY. I am interested to develop the piece to be more visually sculptural in a way that would give it greater impact as part of a performance. I am going to be working with artist Imogen Charleston to develop new glass vessels that are more visually striking and potentially sonically resonant. I will also be working with a local toymaker to help develop a soft latex holder/body strap for the glass, with strong reference to the ExistenZ controllers. I would like to coat the Wii remote in a more interesting textile.

It would be interesting to make the melding of woman and machine more literal, and reciprocal. This "emotional expression augmentation" could include use of biometric sensors, and responses to pitch and volume of the voice, affecting the sound of the glass synth. Responsive lights on the body and within the glass could also add to the audience's visual experience.

However, it has become apparent that to realise the initial ideas behind the project may demand a reconsidered and more sophisticated approach in the type of system(s) I create/use. I have claimed that I would like to embrace living sound, but Agostino Di Scopio's notions of the Audible Ecosystem (Green, 2008) suggest that successfully exploring living sound involves abandoning rigid interactions (and artificial insects in jars) in favour of cultivating low-level interpendent interactions that produce traces, as this reflects real organism behaviour. This is an exciting idea that complements Tim Ingold's passionate descriptions of "things thinging", with their own lives and myriad threads (Ingold,). It seems, then, that if I'm truly seeking life, it's perhaps better to stop hunting, and learn cultivational skills instead.

Left to Right: ExistenZ moulded controller, my sketched design, Imogen Charleston's glass pieces

EQUIPMENT USED

Software/Hardware: Pure Data, Music Controller software for Wii, Mac Laptop running OSX
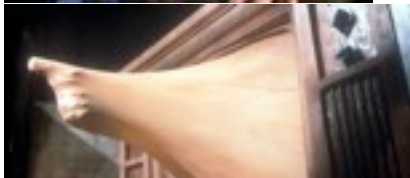**Physical Components:** mini speaker, 3.5 mm jack lead, Kronenburg pint glass, electrical wire, adjustable bag strap, Wii mote, batteries, cardboard tube
Tools, and Other Materials: bread knife, wax, glue gun, car spray paint

BIBLIOGRAPHY

Green, Owen. "Pondering Value in the Performance Ecosystem" in *eContact!* Vol 10 (4), 2006, pp.1 - 16.
Ingold, Tim. *Bringing Things to Life : Creative Entanglements in a World of Materials*. 2008. [online] Available from http://www.reallifemethods.ac.uk/events/vitalsigns/programme/documents/vital-signs-ingold-bringing-things-to-life.pdf [accessed May 2012].

Top row (left to right): Videodrome, The Brood, Videodrome. Middle row: Videodrome. Bottom row: ExistenZ.